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Original Articles.

ON POISONING BY THE INHALATION OF ILLUMINATING GAS.[1]

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It is a noteworthy fact in human experience that agencies and forces which have been devised and utilized to promote the most beneficent ends possess possibilities of the gravest harm together with the power to enhance man's comfort and convenience. The mountain-brook whose waters are impounded to make a wholesome water-supply or a productive mill-power for a populous community may take advantage of a contractor's blunder, and, breaking its artificial barriers, may rush down the valley carrying death and devastation in its terrific descent. Steam, under control, aids in the highest degree in developing industrial progress and enlarging human happiness; but it has within itself a potentiality of destructive mischief which requires vigilant foresight for its control. The mysterious fluid which we call electricity is just undergoing the experimental and sometimes crude attempts of man to harness it for the drudgery of daily work; it seems to delight in the spasmodic demonstration of its power to shock and to kill without warning.

So, too, the product which the chemist's skill has extracted from two of the most abundant of nature's materials, from coal and from water, and which if kept in proper subjection and properly used is an important aid, as illuminating-gas, in promoting the welfare of mankind, has a toxic quality which is truly dangerous, and which is becoming recognized as an available means for the accomplishment of evil purposes. I propose to consider briefly in this paper this harmful and destructive capacity of illuminating-gas and the clinical and anatomical data by which that capacity is represented.

My attention has been directed to this subject more forcibly by the increasing number of suicides which official investigation has brought to view during the present year, in comparison with previous years, in this city. The following tabular statement of all the deaths from gas-poisoning which have been called to my notice as medical examiner during the past fifteen years will make this fact more clear.

Year.	*Suicides.*	*Accidents.*	*Totals.*
1878	..	2	2
1881	...	1	1
1882	2	.	2
1885		1	1
1888	..	1	1
1889	.	1	1
1890	..	4	4
1891	2	1	3
1892 11 mos.	10	4	14
	14	15	29

This manifest increase in the number of deaths is sufficiently noteworthy to elicit an inquiry concerning its cause. I think the explanation is found in two facts: one is that the company which supplies customers in Boston with illuminating-gas, distributes at present a more poisonous product than formerly came through the street mains; and the second is that, thanks to journalism, a reliable means of self-destruction is widely advertised every time the details of a suicide by this method are published. The sudden rise in the mortality rate in the last three years is something more than a matter of chance; it is coincident with the manufacture and distribution of water-gas. Before the change was made, a death by coal-gas was a rare event; but now the cases are numerous enough to be without the quality of novelty. At present, the gas which is supplied is a mixture of coal-gas and water-gas in indeterminate proportions. It is not necessary to the purposes of this paper to describe the processes of the manufacture of the two kinds of illuminating-gas. It is sufficient if we recognize the element which, found in both products, is an adequate explanation of the symptoms and lethal effects after exposure. Among those who have a right to speak with authority upon this matter there is substantial agreement that of all the constituents found in coal-gas or water-gas carbonic oxide is the one which may claim the distinction of possessing capacity for the gravest harm. If the other components exercise any influence in a harmful direction, it is secondary and remote when compared with the more powerful activity of carbonic oxide.

Now there is a wide difference in the amount of carbonic oxide which the two compounds, coal-gas and water-gas, contain. The ordinary illuminating-gas, made from bituminous coal, is found, on analysis, to consist of hydrogen, marsh-gas, olefiant-gas and other hydrocarbons, small amounts of carbonic-acid gas and air, together with from four and a half to seven and a half per cent. of carbonic oxide. The water-gas, on the other hand, consists essentially of hydrogen and carbonic oxide only, the latter constituting from twenty-eight to forty per cent. of the compound product. As it comes from the retorts, water-gas is odorless; but as it is delivered to the consumer it is not to be distinguished from coal-gas, for in order to increase its illuminating properties it has been mixed with a highly luminous gas made from naphtha, or it has been enriched by the addition of coal-gas made according to the older methods from soft coal. The only excuse for making and distributing this very poisonous illuminant is the excuse of economy. Water-gas is four or five times more dangerous than coal-gas, but it costs less in the manufacture; and the custom of combining the two so as to form a compound of greater value for domestic lighting does not materially modify the possibilities for mischief which reside in the undiluted product. I call attention again to the fact that the introduction of water-gas into Boston has been followed by a noteworthy increase in the number of carbonic oxide deaths each year since the change. This increase is not a surprise to those who uttered emphatic warnings and publicly prophesied the impending harm when the subject was discussed at the time when legislative sanction was sought for the new enterprise. Nor can it appear extraordinary when we study the conditions and the circumstances usually attending the fatal events.

The most emphatic demonstration of the poisonous properties of the illuminating-gas at present supplied to consumers in this city is found in the cases which have a fatal result due to this cause. And before alluding to other classes of cases which are not of this most serious degree I desire to present a brief review of the data which enable one to make a diagnosis of the cause of death from the anatomical appearances. For this purpose I have selected a case from the considerable number which it has been my privilege to examine at the autopsy table. A single example of this class is quite sufficient for demonstration, since there is close identity in the post-mortem appearances and one case may be taken as a type of which nearly all others in its class are but duplicates.

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[1] Read before the Boston Society for Medical Improvement, November 28, 1892.

John P., a house painter, fifty-seven years old, was sent January 16, 1892, to do some inside work in an unoccupied room, which had been leased as a store or office, in the second story of a building the first story of which was used for the sale of clothing. P. was alone at his work until half-past two o'clock in the afternoon, when a gas-fitter went to the place and connected the meter in the hall-way with the fixtures in the new store, the supply having been cut off since the place was vacated many weeks before. The gas fitter's work was finished in half an hour, and at three o'clock, having tried the three gas-fixtures and found all of them tight and secure, he left the premises, with P. in sole possession. He was positive that no gas was escaping when he went away.

Three hours and a half later persons passing on the sidewalk outside the building noticed the odor of gas and notified the clothier, who proceeded at once to investigate. He went upstairs, found the door of the room in which the painter had been at work locked on the inside. The odor of gas was very strong in the entry-way. A wrench was found and the gas-supply was shut off at the meter. The door of the room was forced open. It was now after seven o'clock and quite dark. The room was filled with gas; with commendable presence of mind, the man remembered the danger of explosion present in such a mixture and wisely kept his matches in his pocket. He groped about the room and found the keys at the three bracket fixtures turned on full. The windows in the room were closed. P. was found lying on the floor in the middle of the room, limp and warm, but without sign of life. The interval, then, in which the painter was alone in the room and within which fatal toxic effects followed the inhalation of the gas was four hours; the actual time of exposure was probably shorter.

The autopsy was made thirty-eight hours after the death. External inspection found a diffused fresh pink discoloration of the skin upon the dependent parts, in marked contrast with the usual dull-blue lividities. The face had a fresh color, unlike the commonly observed cadaveric pallor. The conjunctivæ were slightly injected; the corneæ were bright. The lips were of a life like tint. The tongue was within the teeth and not between them. There was a little vomitus on the beard. A slight odor of illuminating-gas (naphtha) was exhaled from the body.

The internal examination disclosed characteristic appearances. The muscles had a fresh florid color. The structure of the heart was normal; the cardiac cavities contained blood of a bright cherry-red color, nearly fluid, but showing a few small, soft, stringy clots. There was no engorgement of the right auricle and ventricle.

The lungs presented the anatomical alterations due to chronic quiescent phthisis, with foci of cheesy degeneration bounded by a periphery of indurated tissue. Both lungs showed the characteristic red color everywhere manifest. There was slight reddening of the bronchial and tracheal mucous membrane, and the air passages contained blood-stained froth. There were no punctate ecchymoses, either subpleural or subpericardial.

The spleen was large, soft, and bright red.

The stomach was empty and of healthy appearance.

The intestines showed a reddening of the mucous membrane in the jejunum and upper part of the ileum.

The pancreas was of a pale reddish color.

The liver contained more than the usual supply of blood, and, like the other organs, had a distinctly heightened color.

The kidneys were injected, slightly above the normal size, and of a cherry-red color. The capsules came away with difficulty and the cut section showed anatomical elements obscurely outlined.

The bladder was empty.

The scalp and skull were intact. The vessels of the pia were injected, and bright-red puncta cruenta appeared abundantly on cut sections of the brain substance.

This case may be regarded as an illustrative example of its entire class. It has the advantage of presenting data as to the time of exposure which are not usually available. The anatomical appearances were characteristic. The one central fact which dominates all the rest is the peculiar change in the blood; this change explains the altered aspect of the tissues and makes manifest the true cause of the death. It is a common custom, both in the profession and among the laity, to speak of these cases as examples of asphyxia or suffocation by the gas. In one sense this is an error; but from another point of view it is scientifically accurate. The fatal consequences of inhaling illuminating-gas are not due to any obstruction to the entrance of air to the lungs, such as brings about the phenomena and port-mortem changes ordinarily observed in asphyxia; they are produced rather by genuine toxic effects upon the blood wrought by the introduction, through the respiratory organs, of carbonic oxide to a degree that is incompatible with life. The method by which the fatal result is accomplished offers one of the most interesting problems in physiological chemistry. It is so graphically described by Michael Foster[2] that I cannot do better than to transcribe his words: "The red corpuscles, by virtue of their hæmoglobin, are emphatically oxygen-carriers. Undergoing no intrinsic change itself, the hæmoglobin combines in the lungs with oxygen, which it carries to the tissues; these, more greedy of oxygen than itself, rob it of its charge and the reduced hæmoglobin hurries back to the lungs in the venous blood for another portion. . . . Hæmoglobin combines in a wholly similar manner with other gases [besides oxygen]. When a known quantity of carbonic oxide gas is sent through a hæmoglobin solution, it will be found on examination that a certain amount of the gas has been retained, an equal volume of oxygen appearing in its place in the gas which issues from the solution. . . . In fact, hæmoglobin combines loosely with carbonic oxide, as it does with oxygen; but its affinity with the former is greater than with the latter. While carbonic oxide readily turns out oxygen, oxygen cannot so readily turn out carbonic oxide. Indeed carbonic oxide has been used as a means of driving out and measuring the quantity of oxygen present in any given blood. This property of carbonic oxide explains its poisonous nature. When the gas is breathed the reduced and unreduced hæmoglobin of the venous blood unites with the carbonic oxide, and hence the peculiar bright cherry-red color observable in the blood and tissues in cases of poisoning by this gas. The carbonic oxide hæmoglobin, however, is of no use in respiration; it is not an oxygen carrier; nay, more, it will not readily, though it does so slowly and eventually, give up its carbonic oxide for oxygen when the poisonous gas ceases to enter the chest and is replaced by pure air. The organism is killed by suffocation, by want of oxygen, in spite of the blood not assuming any dark venous color. As Bernard phrased it, "the corpuscles are paralyzed."

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[2] Text book of Physiology, page 406.

Such is the accepted view of the mode in which carbonic oxide kills, whether the source of the gas be in the invisible but useful agent devised for artificial domestic illumination, or in the slow burning of wood, as in buildings on fire, or in the process of smothered combustion carried on in lime-kilns, or in the deadly fumes of burning charcoal. In all these cases a sufficiently prolonged inhalation of carbonic oxide gas leads to identical results. The time required for the fatal consequences in the human subject will vary with all the conditions under which the exposure occurs. It is a common experience in these cases to find the victim of imprudence or of suicidal purpose in bed, in a small room, with all chance of renewal of the air by ventilation through windows, doors, or artificial openings prevented, with the atmosphere of the room fully charged with the gas and its unobstructed escape going forward at the wide-open key at the fixture. Sometimes special provision is made for assuring successful results. The first case of suicide which came to my notice from this cause was that of a man who had removed the perforated tip from the gas-fixture, and in its place had adjusted a piece of rubber tubing long enough to reach the pillow at the head of his bed; having made all the necessary preparations and written his farewell letters, he turned on the gas to the fullest, lay down on his bed, inserted the free end of the tube in his mouth, covered his face with several thickness of towelling arranged to retain the tube in place, and thus deliberately ended his life. In other instances, the careful and methodical sealing of all holes and cracks in the bedroom is accomplished with paper and mucilage, or with articles of clothing. But experience shows that these precautions to prevent interruption and to secure the fulfilment of the desired end in suicide cases are not essential, for the majority of the fatal instances are found without them. The case related in this paper illustrates the rapidity with which the poisonous gas does its work, without special measures to confine it, the entire interval from the beginning of the opportunity to the end of the tragedy being less than five hours. That the death is a sure and speedy one under favoring conditions has been demonstrated experimentally. In 1885 the State Board of Health of Massachusetts undertook an investigation of this subject, and among other instructive results determined that animals placed in a chamber containing 1,140 cubic feet of air space and 55 cubic feet of water-gas died after only an hour and a half of exposure.[8]

There is no indication in the attitude or appearance of the bodies of those who have succumbed to carbonic oxide poisoning that there was distress or suffering of any kind in the lethal process. Generally, the cases occur at night when the victim has retired to bed; when discovery of the event is made, the dead body is found in a perfectly natural posture, with the bed-clothing in position, an expression on the face as of one asleep and entire absence of evidence of any consciousness of unpleasant sensations before death. Rarely, one comes on an instance in which the tip of the tongue is engaged between the tightly apposed incisors and the inference is justified that at some stage in the asphyxia a convulsion occurred; but even in these infrequent cases it is still true that the death is a painless one and that, as in the more numerous class which are without this incident, the passage from sleep to coma and from coma to the fatal ending is absolutely free from conscious suffering.

But it is to be remembered that this record of deaths is not the only evil result for which illuminating-gas is responsible. There are many instances of poisoning by this agency wherein the effects stop short of fatality. These non-fatal cases may be classified as chronic and acute. Of the latter class numerous single illustrations are afforded in the cases of persons, usually domestic servants and inexperienced visitors in cities, who on retiring have extinguished the gas-light as they would a candle-light. They are found in an insensible condition from which they are aroused with difficulty. Of this group of patients I do not propose to make further mention in this communication. But I wish to offer as illustrations of acute poisoning by illuminating-gas, some facts relating to another variety of casualty. On several occasions in the last three years, I have had the opportunity of studying the effects of the accidental entrance of large volumes of the gas into the air of dwelling-houses, in consequence of the breaking of street-mains and other similar mishaps, the gas making its way through imperfectly constructed street sewers or untrapped house-drains or sometimes the ground alone, through the foundations of the dwelling and into the rooms generally. The numerous victims of these accidents lose no time in bringing claims against the gas-light company whose product has wrought the alleged mischief and in an inquiry in the interest of the defendant corporation to determine the validity of the claims presented, I have had the opportunity to study one aspect of the symptomatology of illuminating-gas poisoning. These accidents have been six in number and the persons, of both sexes and all ages, who claimed that they suffered harm therefrom numbered one hundred and sixteen. A synthesis of the subjective symptoms, as derived from the statements of the patients or other sources of information, offers a composite picture of the effects following a brief exposure to this dangerous agent. It is to be understood, as a matter of course, that the conditions under which the exposures occurred necessarily offered some variety in the details of time, amount of the gas in the air breathed, individual susceptibility, intelligence and disinterestedness; and this want of identity in the circumstances is to be borne in mind in any summary of the symptoms recorded. But even with this discount, we may obtain a tolerably satisfactory view of this interesting side of our subject. Placing the symptoms in the order of their reported frequency, they stand as follows:

In the primary group, or those following immediately upon the exposure, were nausea and vomiting, nausea without vomiting, dizziness, headache, stupor and mental apathy, insensibility, great weakness, pain in the eyes, diarrhœa, sensation as of smothering, noises in the ears.

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[8] [illegible] W. T. Sedgwick [illegible] State Board of Health [illegible] M.D. [illegible] the American Public Health Association.

In the group of secondary or consecutive symptoms, reported after varying intervals of time, were the following: Continued headache, weakness and loss of appetite, persistent nausea, pain in the back, bronchitis, continued dizziness, loss of memory.

The cases from which the data of the foregoing summary were derived represented acute poisoning in only a moderate degree of severity; they might be described as sub-acute. In the entire series there was only one group of such gravity as to have any fatal cases, and these, three in number, occurred in a small basement-room which received very large volumes of the gas through a defective sink-drain. Generally the exposure was of short duration and the effects consisted of the four nearly constant symptoms, nausea and vomiting, dizziness and headache. The other symptoms were relatively rare. In only ten of the one hundred and sixteen cases was insensibility observed and in these it was not of long continuance.

It is in the presence of this last mentioned condition only, that of insensibility, that medical aid is imperatively demanded. This condition is the most serious of all the symptoms of gas-inhalation and generally means impending death. The subject of the correct treatment of this alarming condition of coma does not properly come within the scope of this paper. Only the briefest mention, therefore, of the management of the latest stage of one of these cases will be made. It is evident that if the view of the cause of the symptoms observed be correct, and if it be admitted that carbonic oxide has usurped the place of oxygen in the oxygen-carrying elements of the blood, the rational remedy is a restoration of oxygen to its rightful place in the blood and an overthrow of the usurping poison. To this end, the inhalation of oxygen is an obvious aid; and experience confirms its utility. Besides this measure addressed to the poisoned blood through the respiration, other means deserve trial. The condition of the cardiac function is generally alarming and suggests prompt stimulation. To meet this indication Hoffmann, of Baltimore, has used with excellent effect hypodermic injections of nitro-glycerine in doses of one sixty-fourth of a grain in the precordial region. Others have suggested subcutaneous injections of strychnia. The persistent use of artificial respiration and of the ordinary means for external stimulation will not, of course, be overlooked.

The subject of the more or less remote secondary consequences of acute poisoning by illuminating-gas has attracted the attention of scientific students in France and Germany. The reported results of their researches indicate that the individual who survives the insensibility into which his exposure to the gas has brought him has not in that primary recovery escaped all the perils of the emergency. Among these consequential damages are included bronchitis, hæmoptysis and pneumonia; persistent headache, mental apathy, neuralgia, paralysis, delirium, cutaneous hyperæsthesia and sometimes localized anæsthesia, chorea, aphasia and amnesia, and certain trophic disturbances of which herpes, pemphigus, and gangrene are examples; diabetes mellitus and albuminuria are also included in the somewhat formidable train of possible consequences. The anatomical changes wrought in the cerebral tissues by carbonic oxide poisoning have been studied by Boulloche,[4] Poelchen,[5] Simon,[6] and Klebs.[7] They agree in the observation that the disorders due to lesions in the brain depend upon capillary apoplexies, meningeal hemorrhages, and localized softening affecting the motor zones either cortical or deep; and these changes, they declare, are the legitimate effect of carbonic oxide inhalation, acting as a poison on the central nervous system and producing the psychological and neurological phenomena observed clinically. None of these graver consequences of gas-poisoning have been recorded in this country, so far as I am aware. The only purely psychological effect of acute poisoning which was observed in the series of cases represented in this paper was a loss of memory, the patient in one instance, a young girl of ordinary intelligence, declaring that all the incidents attending and immediately following her accidental exposure to the gas were entirely outside her memory, although her behavior at the time seemed to her neighbors and kindred perfectly natural.

This study of the poisonous effects of illuminating-gas upon the human system will be incomplete without an allusion to another aspect of the subject. I refer to what may be described as chronic poisoning from this source; and I mean by this the consequences of a prolonged exposure to an atmosphere containing a small but appreciable contamination by coal-gas or water-gas. These consequences are not demonstrable; but they are intelligible and credible. The air of an ill-ventilated room into which, day and night, there is escaping from defective piping joints or leaking fixtures a steady stream, however small, of carbonic oxide urged forth under pressure, is not without a menace to health. This state of things is common enough in well-ordered dwellings; it is much more common in the tenements and workshops of the poor, who pay rent to landlords who are slow and careless in making repairs. The habitual use of such an atmosphere for purposes of respiration must, one would think, inevitably make an unfavorable impression on the health of the person exposed. May we not find in it one of the factors in the etiology of the headaches, the neuralgias, the loss of appetite, the debility, the gastric derangements which we are too ready to diagnosticate comprehensively and hastily as neurasthenia, but which are only an expression of chronic poisoning by carbonic oxide?

The preventive remedy for the ills and risks considered in this paper is plain. It consists in the rejection of water-gas and coal-gas, as far as is practicable, from the class of agencies for artificial illumination. Human ingenuity will find the substitute which will replace this useful but dangerous product. The favorite illuminant of the twentieth century will be electricity, an agent which does not introduce itself to notice by a vile stench; which does not carry a menace of death into every sleeping-room, and make easy victims of the heedless; which does not lend itself to the purpose of the suicide; which does not waste and heat and vitiate the air while doing service in illumination; which is clean, wholesome and cheerful. Such a domestic servant is to be welcomed, and the herald of sanitary progress will not fail to appreciate the great gain to the public health which will follow the general introduction of the incandescent system of electric lighting into our dwellings at such reasonable rates as to compete successfully with illuminating-gas.

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[4] Archives de Neurologie, September, 1890.

[5] Archiv f. Pathol. Anatomie, Bd. cxii.

[6] Archiv. f. Psychiatrie, Bd. i, s. [illegible]

[7] Virchow's Archiv, Bd. xxxii.

THE CLINICAL ASPECTS OF ILLUMINATING-GAS POISONING.[1]

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These notes are purely clinical; but it is hoped that they may supplement, to some extent at least, the interesting paper of Dr. Draper.

A careful search of the records of the Boston City Hospital by Dr. Augustus S. Knight, Medical Registrar, shows that thirty cases of illuminating-gas poisoning have entered the hospital, of which seven resulted fatally. The first case was admitted in 1875; and cases were very infrequent until 1890, since which year the numbers have increased considerably. Thus there were in:

1875	2 cases.	1889	1 case.
1876	1 case.	1890	6 cases.
1882	1 "	1891	6 "
1883	1 "	1892 (9 mos.)	5 "
1885	1 "		—
1887	4 cases.	Total,	30
1888	2 "		

So it appears that more than half the cases have been admitted in the last three years. The growth of the city would partly account for this, and also the ignorance of immigrants, since twelve of these unfortunate persons, mostly from the Provinces, had blown out the gas at hotels on the first night of their arrival in Boston. Three others were drunk when they went to bed; and three had taken large doses of morphine or opium. In two cases only was a leaking pipe the cause of the accident; and in four, all in very recent years, the intent was clearly suicidal but unsuccessful.

Ten cases had, when they reached the hospital, partially rallied from the state of unconsciousness in which most of them were found, and presented varying degrees of stupor from which they rallied in a few days. (See Cases I to X.) The other twenty were all comatose at entrance. Thirteen recovered and seven died. Dead companions were found in the same rooms with three who got well and one who died; the survivor in one instance being a boy four years old whose mother had succumbed.

SYMPTOMS.

Cardiac, Circulatory and Respiratory. — The heart was always weak and irregular, the skin was cold, and cyanosis was often present. The respiration was rapid and shallow, rarely stertorous; "Cheyne-Stokes" in one case. Pulmonary symptoms were frequent, and in two post-mortems acute lobar pneumonia was found; in another extreme congestion. The temperature in uncomplicated cases was usually from 100° to 102° F. In one case (Case XX) 93.5°. The vital depression may cause subnormal temperatures at the outset. The highest was 105°, with pneumonia.

Urinary. — The poison seems to be largely eliminated by the kidneys, as is shown by the gas-smelling urine in some cases. The catheter was often required but in a few cases there was incontinence. Albuminuria was sometimes present with a little blood and renal epithelium and a few hyaline and fine granular casts. Sugar was not found in any case.

Brain and Nervous System. — These patients all entered in a state of coma, except the ten milder ones, in whom there had been, or still was, deep stupor. They usually emerged from the coma, within twenty-four hours after admission, even in cases which proved fatal at a later stage. A few recovered after two days of unconsciousness, and there were but two who gave no sign of returning intelligence. Tremors and convulsive spasms were observed in four cases; and in three others more severe convulsions resulted fatally (Cases XIX, XXVI, XXVII).

Paralysis of limbs was observed in one case only (Case XIII). This is said to be a not infrequent sequel of gas-poisoning, and is sometimes of long duration (neuritis). Severe headache and dizziness were common, as were pains in the back and limbs during recovery.

REMARKS.

It is stated that, in gas-poisoning, the carbonic oxide forms with the hæmoglobin an insoluble compound, displacing the oxygen and rendering the blood, for the time, incapable of reoxygenation. Therefore, free venesection, to rid the system of the poisonous fluid, and the subsequent transfusion of blood, milk or a saline solution, have been recommended and tried with success in some instances elsewhere. But it seems to me, from our cases, that reoxygenation *does* go on pretty rapidly, under the influence of a free circulation of air, and, especially in the severer cases, with the frequent inhalation of oxygen. The cyanosis disappears, the respiration becomes deeper, the pulse fuller and more regular, the patient is roused from his stupor and the impending danger passes, it may be to return again in another form; but, after a considerable use of this agent, I am inclined to think that this is the one condition in which oxygen may be regarded, both theoretically and practically, as of pretty constant value.

Neither venesection nor transfusion was resorted to in any of our cases, because most of them, even of those which ultimately proved fatal, showed a strong tendency toward recovery under other measures; and some cases of transfusion have died just the same. Dr. DaCosta mentions a case of venesection for coal-gas poisoning in the *Philadelphia Medical News*, January 16, 1892, in which that procedure was of no avail, and in the nature of things such must often be the case.

A record of these cases, mild, severe, and fatal, is appended. Case XIII is reported at some length because it was treated by oxygen made at the bedside by Dr. Charles D. Sawin, then house-physician. At that time our present cylinders were not in use.

Case XXIV, the first which came under my care, was reported at length in the Journal, Vol. CVIII, page 196, and was fatal from pneumonia, as was Case XXVI. The question arises: May an irritant gas or poison set up lobar pneumonia?

MILDER CASES.

Case I. May 6, 1887. O. B. F., expressman, age forty-nine, was led by fear of being sent to insane asylum to take half an ounce of laudanum at 12 m. on May 5th, and another smaller dose at 8 p. m. As there was little effect, he hung himself from the chandelier. The gas-pipe broke. He remained in the room two or three hours, and was then brought to hospital in a stupid state. Discharged well in three days.

Case II. March 19, 1887. M. F., female, age nineteen, from Nova Scotia. United States Hotel. Arrived in Boston with sister the evening before in good health. Sister blew out the gas. No further remembrance until she awoke in hospital. Exposed eight or ten hours. Symptoms: Headache, taste of gas, vomiting on recovering consciousness. Color good, pulse fair, urine normal. Windows opened and air allowed to circulate. Discharged well in two days.

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[1] Read before the Boston Society for Medical Improvement, November [illegible], 1892.

CASE III. March 8, 1890. Female, age forty-two, from Scotland. Park Square Hotel. Went to bed drunk, and was found eleven hours later in room with gas escaping. Symptoms: Cyanosis, cold extremities, alcoholic breath. Pulse 100, temperature 99°, respiration 25. Treatment: Heaters, stimulants, oxygen. In twelve hours awoke from stupor, and was discharged well in two days.

CASE IV. March 18, 1890. Female, age twenty-two, from Ireland. Turned on gas accidentally the night before, and awoke next morning to find a physician trying to revive her. Symptoms: Headache, dizziness, nausea, vomiting. Discharged well the next day.

CASE V. February 25, 1890. Female, age twenty-five, from Ireland. Had inhaled considerable gas the night before from a leaking pipe. Symptoms: Stupor, headache, nausea, vomiting. Temperature 99.2°, pulse 88, respiration 24. Recovery in two days.

CASE VI. September 10, 1891. Female, age seventeen, from New Brunswick. Found in room unconscious. Accidental. Symptoms: Stupor, pulse 124, temperature 100°, respiration natural. Next day was rational, and was discharged well two days after admission.

CASE VII. November 13, 1891. Male, age forty-one, from Ireland. Said he went to bed with gas burning, and was waked up by policeman pulling him out of bed. Entered hospital at midnight; and with the exception of a weak, irregular pulse, was well the next morning. Treatment: Stimulants, digitalis. Discharged well in three days.

CASE VIII. January 12, 1892. Male. Found in "man-hole" unconscious. Symptoms: Partially conscious at entrance; heart weak, irregular and intermittent; great restlessness; refused all food. Discharged same day by his own request.

CASE IX. September 13, 1892. Male, age twenty. Took opium the night before with suicidal intent; then went to his room and turned on the gas. He had been drinking heavily. Symptoms: Stupor; pin-hole pupils; slow, labored respiration, twelve to the minute. Treatment: Atropia, stimulants, walking. Discharged well in two days.

Case X is missing.

SEVERE CASES.

CASE XI. February 23, 1875. Boy, age four. Burst gas-pipe. Mother in same room died. Symptoms: Pallor, hot skin, dilated pupils, brown tongue, rapid respiration, pulse 140. Deep stupor. Fresh air from window allowed to blow over face. Milk with wine. Up and dressed in three days, and discharged well in two weeks.

CASE XII. May 4, 1875. Male, age forty, teamster, Boston. Blew out gas, and was found unconscious in morning. Exposure, eight to ten hours. Symptoms: Extreme stupor, face dusky, tongue coated, pupils normal. Pulse good, respiration 16. Treatment: Patient placed so that a current of air from the window blew over him. Blankets and heaters applied. Sinapisms to calves. Brandy and carbonate of ammonia given. Could talk the same evening, but remembered nothing except tasting smoke, and thought he had been in a fire. Discharged well in two days.

CASE XIII. Paralysis of the leg. On the 15th of April 1883, a young man nineteen years old was admitted to the hospital about eleven o'clock A. M., having been subjected in a closed room to the action of illuminating-gas for over nine hours. His condition at the time was as follows: Coma; muscles of extremities in a state of tonic contraction, but no convulsions; skin very dry; face flushed; distension of veins of neck; eyelids partially closed; pupils equal and reacting sluggishly; pulse 128, and feeble; respiration 30, shallow; and temperature per rectum 101°. Examination of the chest gave negative results. Various methods of stimulation were resorted to, including hypodermic injections of brandy, slapping of the chest with a cold wet towel and faradism. The application of electricity seemed to be followed by the most lasting results, for in the afternoon, the pulse grew perceptibly stronger, and the sensation more acute. When shouted at loudly, he would now open his eyes. Cheyne-Stokes breathing. A specimen of urine drawn by catheter was of normal odor, and contained, besides a trace of albumen, some blood with a few brown granular and epithelial casts. No sugar. The odor of gas was very noticeable when one placed himself in close proximity to the patient.

At seven P. M., he was still unconscious, but seemed to be very much affected by the application of any external irritant, and groaned frequently. The forehead was contracted into a frown. There was some congestion of the conjunctivæ. His temperature and pulse both remained at about 100 during the night, although little general improvement took place. The odor of gas disappeared.

In the afternoon and evening of the following day, as the patient still remained unconscious, oxygen manufactured extemporaneously from chlorate of potash and binoxide of manganese, in the usual way, was administered by means of an ether sponge to which the gas was conducted through a rubber-tube after having been passed through water. The sponge was moistened, in order to prevent too great a loss of the gas. As soon as the patient began to breathe the oxygen, he struggled violently, and, for the first time, spoke, using rather strong and abusive language. He was perfectly quiet, however, when the sponge was removed. The gas was given twice, for about twenty minutes each time. Marked flushing of the face, and acceleration of pulse followed each administration.

During the night he tossed about considerably in bed, but was observed to move the left leg much less than the right. Sensation was found to be much diminished also in this same extremity. On the morning of the 17th, he talked more or less, but not in a rational manner, and endeavored to sit up in bed. He complained of sore throat, but no cough; was perfectly rational later in the day, and said his left leg "felt heavy."

His condition soon became normal with the exception of the loss of power in the left lower extremity which was the seat of "sharp needle-like" pains, requiring the frequent use of moderate doses of morphia.

On the 30th, two weeks later, he attempted to walk a little, but threw the left leg along with much difficulty. Under massage and frequent rubbing with ammonia liniment, the muscles improved very much, so that when he was discharged three weeks after admission, he could walk fairly well.

CASE XIV. March 17, 1887. M. W., male, age twenty-six, from Prince Edward's Island. Boston Hotel. Arrived in Boston March 16th. Blew out the gas at 7 P. M. Woke at 1 A. M. feeling very sick, and smelt the gas, but did not know what it was. Went to sleep again and was brought to hospital unconscious in the morning. Exposed twelve hours. Not cyanotic. Urine normal. Treatment: Brandy, one ounce by enema every two hours, three doses; oxygen. Recovered consciousness in ten hours. Discharged well in four days.

Case XV. June 14, 1887. R. R., German, age twenty-seven, teamster. Went to bed well the night before. Thought he turned off the gas, but was found in his room unconscious. Exposed to gas eight to ten hours. Symptoms: Coma, contracted pupils. Temperature 100°; pulse 135; respiration 24, stertorous. Inability to swallow. Enemata rejected. Urine normal. Treatment: Fresh air, oxygen for two hours, brandy (two ounces in all, under the skin) and tincture of digitalis. Eight hours after entrance could answer questions shouted into his ear, but remained dazed for two days. Discharged well in six days.

Case XVI. November 30, 1888. Male, age twenty. Clark's Hotel. Was discharged from his position, and went to bed after turning on the gas with suicidal intent. Sixteen hours later he was brought to the hospital in an apparently moribund state. Symptoms: Coma, dilated pupils, tremor and occasional spasms, blue lips. Pulse weak, 120; respiration shallow. Treatment: Brandy and ether subcutaneously; oxygen, ten or twelve inhalations every hour at first, and less frequently as respirations and pulse improved. In four hours he could show his tongue when told, and drank milk and brandy. Thirteen and one-half hours after entrance he regained full consciousness. Very drowsy for two days. Discharged well in five days.

Case XVII. December 21, 1888. Male, age thirty-five, from Ireland. Shawmut Hotel. Blew out gas through ignorance the night before, and was found twenty-four hours later unconscious. Coma. Temperature 102°, pulse 100, respiration 26. Oxygen. Recovered consciousness the next day, and in a few days was well.

Case XVIII. October 2, 1890. Male, age twenty-four, from Cape Breton. Hampton House. Arrived in Boston October 1st. Blew out gas. Friend found dead in same room. Symptoms: Coma, cyanosis. Pulse irregular, 140; temperature 102°; respiration 40. Treatment: Brandy under the skin; oxygen, fifteen minutes at a time. This seemed to over-stimulate, so it was given three minutes only at a time. After eight hours the color improved, and in fourteen hours he regained consciousness. Discharged well in six days.

Case XIX. December 5, 1890. Male, from Nova Scotia. Hotel Thorndike. Blew out gas. Twelve hours' exposure. Symptoms: Coma, cyanosis, respiration rapid and shallow, profuse frothy expectoration. Convulsive movements of arms and legs every two or three minutes, lasting thirty seconds, during which the cyanosis became deeper and the breathing more labored. Treatment: Brandy subcutaneously and oxygen inhalations continuously (140 gallons used). Responded rapidly, the pulse becoming stronger and the respiration easier. In twelve hours opened his eyes, and the next morning was perfectly conscious, complaining only of pain under sternum. Discharged well in five days.

Case XX. October 27, 1891. Male. Blew out the gas when drunk. Companion found dead. Exposure, twelve hours. Symptoms: Coma, general cyanosis. Pulse 80 to 95, weak and irregular; respiration 40; temperature 93.5°. Skin cold. Expiration very forcible with tremor of whole body. Treatment: Constant use of oxygen; stimulants. In three hours breathing became normal, consciousness returned, cyanosis disappeared, and patient vomited food which had a marked smell of gas. Discharged well in four days.

Case XXI. December 11, 1891. Male, colored, age thirty-seven, from North Carolina. Said to have misappropriated funds collected for a college. Went to the United States Hotel, locked the door and window, and turned on gas. Twelve hours later brought to hospital, comatose. Treatment: Oxygen inhalations for seventeen hours. Consciousness began to return and conjunctivæ became sensitive in two hours. Gradual recovery. Discharged well in a week.

Case XXII. May 12, 1892. Male, age thirty-five. Found in room with gas turned on. Accidental. Symptoms: Coma, cyanosis. Treatment: Oxygen. Gradual recovery of consciousness. Discharged well after two days.

Case XXIII. September 15, 1892. Female. Brought in unconscious; vomiting, and grinding of teeth; cyanosis. Heart weak, irregular, intermittent. Arms rigid. Urine: 1028, trace of albumen, blood, no casts. Treatment: Oxygen constantly, brandy, digitalis nutritive enemata. The next day the patient was semi-conscious and could swallow. Pain in back and legs. Discharged well after fourteen days.

FATAL CASES.

Case XXIV. September 19, 1882. Male. Blew out gas at a hotel. Brought in twelve hours later unconscious. Pupils contracted, no cyanosis. Pulse 120, weak; temperature 100.2°; respiration 50, shallow. Abundant râles. Three pints gas-smelling urine drawn. The next day pulse 140, temperature 105.8°, respiration 65. Patient remained unconscious; symptoms of pleuro-pneumonia developed; and he died on the fourth day. Treatment: Hypodermic and rectal stimulation; cold sponging. (No oxygen was at that time to be procured in cylinders.)

Autopsy showed recent fibrinous pleurisy of both sides; 200 cc. puriform fluid in left pleural cavity; upper lobe of right lung showed acute, fibrinous pneumonia; gray hepatization. (See Journal, March 1, 1883.)

Case XXV. October 8, 1885. S. S., male. Robertson House. Went to bed drunk at 3 P. M., and was found unconscious three or four hours later in a room full of gas. Symptoms: Coma; shallow respiration; quick, feeble pulse; congested face; equal pupils, reacting to light; reflexes present; sensation diminished; incontinence. Urine: smelt strongly of gas; acid 1,030; faint trace of albumen. Treatment: Oxygen, which improved the respiration; enemata not retained. Patient used oxygen but three times daily after the first day, and gradually regained the power of speech, but grew more cyanotic, and died on the fourth day.

Autopsy, by Dr. Draper: Congestion of brain and of all the organs of the body; nothing else.

Case XXVI. January 13, 1889. J. L., age thirty, male. Entered room at boarding-house at 11 P. M. the day before. Eighteen hours later was found unconscious. Valve of tube to gas-stove turned on. Symptoms: Coma, stertorous respiration, cyanosis, contracted pupils, strong odor of gas in breath. Knee-jerk absent. From thighs up, cutaneous sensation seemed unimpaired. Urine: smoky; acid; trace albumen; vermilion color at line between nitric acid and urine; no odor of gas. Treatment: Oxygen at entrance; brandy, ether, carbonate of ammonia, and atropia subcutaneously. A few hours later patient opened his eyes, and pupils reacted to light, right more than left. Could swallow milk and brandy. Slight convulsions ensued, the spasms recurring oftener and oftener. Respiration stopped, and was started again by faradic battery. In the evening, pulse imperceptible; temperature 104°; respiration 60. Patient died on the second day.

Autopsy records: Acute pneumonia and bronchitis; chronic hydronephosis (Dr. Draper).

CASE XXVII. September 20, 1890. Female, age thirty-five, from Nova Scotia. Two nights before entrance had blown out gas, and was found unconscious the next morning. Twelve hours' exposure. Symptoms: Coma, cyanosis. Respiration rapid and shallow, 30; pulse 100; temperature 101°. Urine: 1,033, trace of albumen, hyaline, and fine granular casts. The day after entrance convulsions began, first of arms, with closed fists and thumbs turned in; then increasing to opisthotonos. They occurred every three or four minutes, and lasted thirty seconds or more. Treatment: Nutritive enemata, rectal injections of chloral and bromide, oxygen inhalations frequently. On the third day she answered questions, swallowed easily; no cyanosis; pulse full and regular. Convulsions had ceased. But patient became weaker; coma returned; and she died after six days.

No autopsy.

CASE XXVIII. November 27, 1890. Boston Hotel. Female. Blew out gas. Found unconscious in morning. Man dead in same room. Symptoms: Coma, cyanosis, stertor. Treatment: Oxygen, stimulants, heaters. No response. Died day after entrance.

No autopsy.

Case XXIX. March 6, 1892. Male. Said to have morphine habit. Bottle half full of morphine brought with him. Found in room with gas turned on. Symptoms: Coma; pulse 112, weak; respiration 44; fine, moist râles at base of lungs. Urine: 1,020, slight trace of albumen, blood, and renal epithelium, no casts. Treatment: Oxygen frequently, black coffee, atropia. Died in ten hours.

No autopsy.

CASE XXX. April 20, 1892. Male. Brought in unconscious by police, after twelve hours' exposure to gas. Skin warm and moist. Moved arms and legs. The next day more comatose; slight convulsions; free perspiration; pulse weaker. Oxygen every half hour. Swallowed a few drachms of milk and brandy. Failed rapidly, and died during the night. Duration two days.

No autopsy.

THE WHITE HOUSE QUARANTINED. Placards announcing that scarlet fever is within have been placed on the White House in Washington. In order that this disease may not be included among the inheritances to the next administration, the building will be thoroughly cleaned before the arrival of Ruth Cleveland.

FURTHER NOTES ON REMOVAL OF THE STAPES.

BY FREDERICK L. JACK, M.D.

AT the last meeting of the American Otological Society, July 20, 1892, I presented for consideration a new method of treatment for the relief of symptoms attending adhesive inflammations of the middle ear. This method, the removal of the stapes, was described, and sixteen cases were reported as the beginning of a series of original investigations. The results gave reason to hope that a means of relief in many cases was on the verge of realization. Aural surgery, as is well known, had by degrees been advancing in the direction of the oval window, and there was a growing belief that an open fenestra ovalis would very greatly improve the power of hearing.

Among those who have published their investigations in this direction are these: Kessel, in 1875, first performed circumcision of the stapes, with improvement. In 1876 Michel[1] perforated the drum, and exerted pressure upon the stapes with a sound, improvement in hearing following. In 1888 this operation was revived by Boucheron and Miot.[2] Tenotomy of the stapedius muscle was first performed by Kessel,[3] and later by Urbantschitsch,[4] who out of three cases got improvement in two. Cases of exfoliation of the stapes with improved hearing have been reported by Berthold.[5] He ascribed the gain to the closing artificially of a perforation in the drum. Also cases by Tröltsch,[6] by Buck,[7] by Bœck,[8] and two cases by Schwartze.[9] One case of accidental removal, with improvement in hearing, by Botey.[10] He also removed the stapes from animals safely and thereby improved their hearing.

The practicability of this procedure on the human subject has now been fully demonstrated by several observers and its value in some cases clearly proven. No claim is made that it will help all cases, but it surely does some. My object in this paper is to give the results of further observations and experience with the operation, especially as to its technique, and its application to the different forms of middle-ear disease; also to record the permanency of the good results in most of the original sixteen cases.

In general, the operation previously described is employed.[11] There are a few details, however, worthy of brief notice. The shape of the incised piece of membrane is immaterial, but it is important to carry the posterior and upper cut as close to the auditory ring as possible, for in not a few cases the joint is on a line with this ring or situated a little above it. Usually, after any incision except a straight one, the membrane curls away from the edge of the wound. Cases will undoubtedly occur where, from bony ankylosis, or from a high position of the oval window, or what is practically the same thing, a prominent auditory ring, removal of the ossicle is rendered more difficult. At times it is impossible to remove the bone entire. Where the head of the bone is high up, the operator must by careful manipulation pass the hook between the crura. The sense of the feeling can be the only guide, since the bone is beyond the range of sight. A case recently operated on best illustrates this point, and also one other point, namely, the importance of a differential diagnosis:

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[1] Zeitschrift für med. Wiss., 1876, No. 42.

[2] Bullet. med. de Paris, 1888, p. 553.

[3] Archiv für Ohrenheilkunde, vol. ii, p. 199.

[4] Wien. med. Pr., 1877, vol. xviii — xxi.

[5] Zeitschrift für Ohrenheilkunde, vol. xix, p. 1.

[6] Archiv für Ohrenheilkunde, vol. iv, p. 100.

[7] Manual of Diseases of the Ear.

[8] Archiv für Ohrenheilkunde, vol. viii, p. 228.

[9] Archiv für Ohrenheilkunde.

[10] Expériences d'avulsion de l'étrier chez les animaux, Annales des maladies de l'oreille, No. 1, January, 1891.

[11] Boston Medical and Surgical Journal, November 10, 1892.

Miss C., thirty years old, complained of progressive deafness of many years standing in both ears. The left membrana tympani was very much thickened and retracted, manubrium decidedly foreshortened, leaving a much-contracted field for operating. The usual small triangular opening in the drum was made. The incudo-stapedial joint could only be made out when the assistant held the patient's head considerably to one side. The operation was performed in the usual way up to the point of extraction of the stapes. This step was made entirely in the dark, on account of the high position of the oval niche. The ossicle was quickly found and removed, with so little resistance however as to lead to the belief that it could have offered little obstacle to the sound waves and that therefore the hearing apparatus beyond in the vestibule was the real seat of the trouble. This condition was strongly suggested by the tests made before the operation, and it was confirmed afterwards by the same means. There was no dizziness, and the patient, as frequently happens, was up and about on the next day.

In all cases the ear should be rendered aseptic by syringing with a mild antiseptic fluid some time before the operation, in order to avoid congestion of the tissues, because in such a condition the parts are not well defined. It is seldom necessary to cut or injure the mucous membrane. Care should be taken to thoroughly perform each step, and to render the field of operation perfectly free from hæmorrhage by the use of a sterilized four per cent. solution of cocaine. In one case in which instruments dipped in ninety-five per cent. alcohol were used, a sharp inflammation followed the operation. That this was due to the irritating influence of the alcohol is a fair supposition, from the fact that in the operations before and after, in which a solution of carbolic acid (1 to 60) was always used for the instruments, no inflammatory reaction has occurred.

As regards the application of the operation to the different classes of ear disease. In cases of otitis media suppurativa, after the otorrhœa has ceased the incudo-stapedial joint is firmly fixed by bands of adhesion. Briefly described, this condition of the bone offers a mechanical hindrance to the transmission of sound waves to the vestibule. Relieving this obstruction by removal of the stirrup is found to increase the hearing power for the voice very materially.

Another set of cases is very similar pathologically, otitis catarrhalis adhæsiva. There is proliferation of tissues with ankylosis of the ossicular chain. Here again good results by removal of the bone have been demonstrated.

There is a third class, otitis media insidiosa (sclerosis), in which it is generally believed that the ankylosis is not fibrous but osseous. This condition is usually characterized by a high degree of deafness and tinnitus. Appearances of the tympanum are either normal or nearly so. Judging from a few experiences with this troublesome condition, the region of the foot-plate would appear to be the principal seat of the bony ankylosis. I can only say in evidence of this that in some of these cases the foot-plate, in part or whole, remained behind after the removal of the head and crura, an accident which at present is unavoidable and insurmountable. As might be expected the improvement in hearing is not as great as in other cases. Larger experience with this class of cases may, however, give better results.

It seems hardly necessary to say that diseases of the internal ear are not affected by this operation. It must be carefully determined beforehand therefore in each case by special tests whether the impairment of hearing is due in part or whole to changes in the labyrinth.

It is now six months since the first cases were operated upon, long enough to form some idea as to the permanency of the results. Most of these cases have been again tested within a week, by Dr. William S. Bryant and myself, aided by Dr. Crockett, house-officer. The ears, without a single exception, have remained healed; the wound in the drum in most cases was found cicatrized, thereby restoring the natural protection to the middle ear.

The influence of the operation on tinnitus aurium, judged by these cases, is very uncertain. Some, in whom it existed previous to the operation, have been free from this trouble since. On the other hand, the reverse is true in a few cases where a slight noise is now noticed at times.

A matter of considerable interest is the effect of removal on the labyrinth. Theoretically, there should be a grand general disturbance; practically, this is not the case. The symptom, vertigo, was closely searched for, but was found in one case only, that of a woman forty-seven years of age. Dizziness was, however, an old complaint with her, and was very likely due to dyspepsia. She volunteered the information that the trouble was less frequent of late than for a short time after the operation. In a few cases vertigo, which was complained of before the operation, has entirely disappeared.

The improvement noted in hearing the tuning-fork, both by air and bone, was found essentially the same as when tested six months ago.

The test by König's rods showed in one case a slight gain of 5,000 vibrations per second; in another, the loss of the same. In one case the considerable gain of 15,000 vibrations after the operation was still held.

The hearing for the watch indicated in some cases a slight gain, in others, a slight loss. In cases of slight loss for the watch and rods, this of course indicating a diminished perception for high tones, the hearing power for the voice was apparently increased. This peculiarity in the relation between hearing the voice and high tones is frequently found among deaf people.

We now come to the point of most importance, to the patient at least, namely, a report of the hearing power for the voice. It is impossible at present to apply tests for this with anything like scientific accuracy. This is especially true in cases where the hearing is good in one ear and bad in the other. In these cases the ear on the other side was tightly stopped with cotton and the finger of an assistant pressed tightly into the meatus. In those cases where the oval window was completely cleared, the change, if any, was a slight increase of hearing since that immediately following the operation. There was one exception. On the other hand, where the foot-plate remained, there was practically no change from preceding tests. In one case of removal from both ears the hearing remained perfectly good for five months, and was then somewhat dulled after a head cold, which closed the Eustachian tubes and caused marked retraction of the membrane. After inflation of both middle ears through the catheter the hearing was restored in one and partially so in the other. This would seem to show that the cicatrix over the oval niche was driven into the window by the closing of the tubes, and acted as an obstruction. It is proposed to remove, under cocaine, a piece of membrane from one side, with the object of contracting the cicatricial drum. By this it is hoped to counteract the tendency of the cicatricial membrane to sink into the fenestra.

In conclusion, I wish to emphasize the importance of a careful differential diagnosis in each case before advising the operation.

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Clinical Department.

SOLID TUMOR OF OVARY.

BY J. COLLINS WARREN, M.D.

SOLID tumors of the ovary are said to be exceedingly rare. According to Greig Smith, "Of all tumors of the ovary probably not more than three per cent. are solid; most of them are malignant sarcoma or cancer; true myoma has been found; pure fibroma is almost unknown."

The following case seems, therefore, worthy to be placed on record:

J. R., domestic, single, forty-three years of age, entered the hospital November 2, 1892. For the last twelve years she has suffered from epileptic seizures, which she describes as "giving warning," and affecting the right side mainly. Her general health has otherwise been good. There is no history of any injury to her head. Her mental condition is slightly below par. Catamenia have been regular, but ceased two months ago. She first noticed some soreness of the abdomen on bending over about four months ago, but not until two months ago did she notice any enlargement. She has not had any pain, but has experienced a feeling of weight and dragging when walking about.

The patient is poorly nourished, and there is a slight suggestion of cachexia in the face. On examination, the abdomen was found to be somewhat distended with ascitic fluid, and a large, very hard, and nodulated tumor was felt extending three inches above umbilicus and down to the pubes. It was quite movable and could be pushed readily from side to side in the ascitic fluid.

On vaginal examination the uterus was found to be small, movable, and not connected with the growth. The hymen was well developed. The lungs and kidneys were normal. There was a slight presystolic murmur, but the heart's action was otherwise good. The tumor was regarded as probably of a malignant nature and possibly attached to the omentum. It was, however, thought advisable to perform an exploratory operation.

Laparotomy was accordingly performed on November 11th. An incision was made below the umbilicus, about four inches in length, which disclosed a hard nodular mass of an opaque whitish color floating in ascitic fluid, about two quarts of which escaped. The incision was enlarged by the scissors to two inches above the umbilicus and with some manipulation the tumor was brought out through the wound, and was found to be attached to the left broad ligament. The pedicle was long and thin and was easily tied with a Staffordshire knot. The tumor on removal was found to be about the size of an adult head and to weigh eight and one-half pounds. An examination of the other ovary showed it to be about twice its normal size and hard and nodular, resembling somewhat in this respect the diseased ovary.

The patient made a good recovery, the temperature not rising above 100° F, although the evening of the operation she sat up in bed and had several epileptic seizures during her convalescence. The stitches were removed on the thirteenth day, the union being perfect. The catamenia appeared on November 28th, immediately after one of the seizures. Having been satisfactorily fitted with an abdominal belt, which I apply to all cases of laparotomy, she was discharged December 6th in excellent condition.

The following is the report of the microscopical examination of the tumor by Dr. W. F. Whitney: "A large lobulated growth (size of the head), firm, not covered by peritoneum and united to a fragment of the Fallopian tube. Microscopic examination showed it to be made up of fibrous tissue, with here and there a few bundles of unstriped muscular fibre. Fibro-myoma."

There were no cysts in any part of the tumor.

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A REMARKABLE DEFORMITY OF THE PELVIS, IN CONSEQUENCE OF FRACTURE OF THE SACRUM.

BY BARTON COOKE HIRST, M.D., PHILADELPHIA.

A WOMAN brought in to the gynecological ward of the Philadelphia Hospital, on December 16th, gave the following history:

Age thirty-two. Has had six children, the last, three years ago. Three months ago, during a menstrual period, she fell from a third-story window striking with an unbroken fall upon the brick pavement of the yard below. One leg was broken, the skull, she thinks, was fractured, and some injury, she believes, was inflicted on the backbone. Since the fall she has not menstruated, and has suffered severe pain in the lower abdomen, which, however, of late has steadily decreased. She was transferred to our department from the surgical ward after her head injury and the broken leg had been repaired. An examination of the pelvis gave the following result: The uterus is in good position, movable; behind and to the right is a mass that gives me the impression of a diminishing, encysted hæmatocele. Directly the finger enters the vagina, a peculiarity of the posterior pelvic wall attracts attention. The coccyx and lower sacrum are much higher than they should be in the pelvic cavity, and they project forward at a right angle to the rest of the sacral bone, so that they encroach, to an extraordinary degree, upon the antero-posterior diameter of the pelvis. An external examination shows a transverse fracture of the sacrum at the level of the posterior inferior spinous processes of the iliac bones, a dislocation of the lower fragment inward, and a firm bony union of the two fragments at a right angle. From the seat of fracture to the tip of the coccyx, the pelvimeter measures seven centimetres. From the tip of the coccyx to the lower edge of the symphysis pubis the measurement is seven and a half centimetres. Thus the antero-posterior diameter of the pelvic outlet is reduced three and a half centimetres or almost one and a half inches, for the backward displacement of the coccyx in labor, that increases this diameter from nine and a half to eleven centimetres, has become impossible. I believe, therefore, that should this woman again become pregnant a symphysiotomy or a Cæsarean section would be necessary for her delivery, most likely the latter.

Out of 13,200 fractures reported from nine large hospitals in this country and in Europe, but 0.8% were fractures of the pelvis; and in this small proportion, fracture of the sacrum figures as the least frequent of all injuries to the pelvic bones. When one considers that almost all grave injuries to the pelvis end fatally, the rarity of a pelvic deformity in a woman of childbearing age dependent upon a united fracture of a pelvic bone may be appreciated. In a rather cursory search through obstetrical literature I cannot find anything just like this case.

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Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

(Concluded from No. 26, page 622.)

CONGENITAL LUXATION.[11]

Karweski reports five cases of congenital luxation, one spontaneous following scarlet fever, and eight of paralytic luxation.

Following Hoffa's suggestion in 1890, Karweski operated upon a child three years of age. In four other children whom he operated upon, all being girls, the oldest was eight, the other three, and two were four; all of unilateral luxation. In none of the children of from three to four did he find muscular contraction mentioned by Hoffa and Lorenz; and traction in bed previous to the operation, carried out for two weeks, did not give any results. The section of the muscle was also useless. The cotyloid cavity was found abnormal, presenting a surface which was almost flat, and the head and neck were distorted in a measure. In operating he divided the capsule, the flaps were drawn apart and after the reduction were stitched together tightly over the head, presenting a point of resistance for the traction of the head. The external incision was that of Langenbeck. The treatment after the operation consisted in the application of plaster-of-Paris bandage, which reached as high as the axilla. At the end of three weeks passive motions were made. At the end of eight weeks permission was given for the patient to walk with traction apparatus fastened to a leather corset. There was no suppuration in any of the cases.

The ultimate result was good in all the five cases.

A SPLINT FOR USE AFTER OPERATION ON THE HIP-JOINT.[12]

A device is shown, for use particularly after excision of the hip-joint, which allows turning of the patient in bed without disturbing the relation of the leg to the trunk of the patient. The apparatus consists of an elliptical-shaped band of steel connected with the bottom of the traction-splint in such a way that when the patient is rolled upon the well side, the foot is raised and rolled outward and in the same degree as is the hip, so that there is no motion in the hip-joint by turning the patient on the side or on the face. The apparatus is fastened to an ordinary long splint, either a Taylor or any form of traction apparatus.

PSEUDO-ARTHROSIS OF THE HIP AFTER COMPLETE CURE OF SEVERE HIP-DISEASE.[13]

Several cases of this rare affection are mentioned. The only diagnosis to be made is from congenital dislocation. These patients are able to walk without much limp, provided the tubercular process has healed. Several of them have a walk which resembles very much that of unilateral congenital dislocation. The only question is the question of diagnosis, and the diagnosis lies between that and congenital dislocation. Unlike the ordinary result of hip-disease, they have often most excellent motion at the hip-joint. Surgical intervention, such as resection is of no advantage, the result being no better than the conditions in which the patients are. They walk readily without much limp. The limp can be modified in a measure by the use of the shoe with a high heel.

A REMOVAL OF APPARATUS IN THE COURSE OF TREATMENT OF HIP-JOINT DISEASE.[14]

Dr. Schaffer has given his opinion from a large number of observations, and concludes that the duration of the disease is, as a rule, about four years, and that during this time a latent tuberculosis may become active by trauma.

The attempt at leaving off mechanical treatment must always be tentative, and the splints be reapplied if symptoms reappear.

The examination of a joint under ether he does not think advisable, as more force than is necessary is liable to be used.

In determining whether the brace shall be omitted, two symptoms are of particular value: One is the gait and the attitude of the patient in walking; and second, the character of the resistance of the joint to motion, indicating the resistance of muscular contraction. Pain is not a valuable symptom; and the presence at any time during disease of suppuration is not of value, as many of these cases have a shorter course than many without suppuration. The symptoms on which the conclusions are made for leaving off treatment in the disease are: (1) The disappearance of the characteristic attitudes; (2) the disappearance or the modification of the muscular spasms.

OBLIQUE OSTEOTOMY OF THE FEMUR FOR DEFORMITY FOLLOWING HIP-DISEASE.[15]

A case is reported in which there existed a marked degree of deformity following old hip-disease. The operation was done through an incision on the outer side of the femur and the section by the osteotome made from before backwards so that the lower fragment impinged upon the upper. It is claimed by this that perfect apposition is maintained during healing and that the result is thus more certain.

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[11] Karweski: Centralblatt für Chirurgie, September 10, 1892, No. 36.

[12] British Medical Journal, 1891, vol. ii, p. [illegible].

[13] Menard: Revue d'Orthopédie, November, [illegible]

[14] Dr. Newton Schaffer: New York Medical Journal, November 28, 1891.

[15] Terrier and Hennequin: Revue d'Orthopédie, [illegible]

In the case reported, recovery took place after several weeks of rest in bed with extension, with the leg in good position, and also with motion in a joint which had before been almost completely stiff.

DISEASES OF JOINTS IN HÆMOPHILIACS.[16]

The author has observed eight cases of this disease, and he would divide it practically into three stages. The first consists of the first occurrence of the hæmorrhage, from which the joint may entirely recover; or, if it acts as an irritant body, a kind of an arthritis is liable to be set up. This constitutes the second stage, — from this it is doubtful if complete recovery ever occurs. The symptoms are much like those of an ordinary tubercular joint, more particularly like the hydrops tuberculosus fibrinosus. The third stage consists of the stage of retrogression, and during this the deformity known as deformity of the bleeder's joint can occur. The diagnosis is comparatively easy so long as the fact of the inherited taint is known. The treatment consists of rest and compression, and occasionally it may be well to draw off the fluid and wash the joint out. It is questionable if operation is ever desirable. Of three cases operated upon, owing to a mistaken diagnosis, two of the patients died from the hæmorrhage.

ARTHRITIC MUSCULAR ATROPHY.[17]

Hoffa is quoted in an article upon muscular atrophy following disease of the joint. Vulpian and Paget formulated the theory that this was due to a reflex pain; and if this theory is true, as has been shown by Reymond and Deroche, this should be wanting in case the reflex arc is interrupted in any one place. To prove this Hoffa experimented upon a dog, cutting the third, fourth, and fifth lumbar pairs to the first sacral pair. He then injected nitrate of silver into the knee of both lower extremities, and an arthritis followed. On the right side where the nerves were cut, there was no muscular atrophy, whereas it was very marked on the left, the extensor muscles on the left side measuring scarcely two-thirds of the muscles on the right. The extensors are affected in preference, on account of the anatomical relations between the nerves of the muscles and those of the articulation. On the contrary, however, Fischer has shown that there was always a preference for the tensors of the articular capsule.

OPERATIONS UPON THE KNEE-JOINT.[18]

The author considers that two conditions are necessary to make an operation advisable: disease in the articulation, and deformity whether with or without disease. The operation consists in removing all carious bone; in following up the sinuses, and, if necessary, giving them drainage through the shaft of the bone, and removing enough of the bone to make a flat articular surface. The cavity which is left in the bone from the collection of the pus does not heal readily. There are three methods by which it may be filled: the blood-clot, implantation of the decalcified bone, and the implantation of a skin-flap. Tubercular disease beginning in the synovial membrane, with insidious swelling, and without pain and tenderness, he considers, often calls for early amputation. He found that the disease began in the bone in 11 cases; more frequently in the tibia, in which it seems to run a more active course than when the femur is the seat of disease. Of the operations, 25 were excisions, five erasions. In nine, the articular end of the bone was operated upon. Of the excisions, 22 cases were cures; in one there was bony union; in two, the limbs were amputated, and four of the patients died. The shortening in many cases was considerable, varying from a slight amount to four inches. No drainage-tubes were used, but plugs of iodoform gauze in place. The leg, after the dressing was applied, was held in position by three splints, one posterior and two lateral. This was considered as preferable to plaster.

ELONGATION OF THE LIGAMENTAL PATELLÆ.[19]

The author has described a condition, which is occasionally met with, of an elongated condition of the ligamentum patellæ. He finds that normally it is seldom over two inches in the adult, whereas in those cases, he has met it three and quarter. The patella is found to be elevated, resting between the condyles of the femur; and clinically there is difficulty in walking, particularly in going up and down stairs, while in the severer cases walking is almost impossible. In certain cases there is associated with the condition a slight genu valgum. He employs a mechanical treatment to keep the ligament in place. He considers the question of shortening the ligament by operation, but hardly as one of much practical utility.

OPERATIVE TREATMENT OF DISPLACED SEMILUNAR CARTILAGE.[20]

Southam reports a case of removal of the semilunar cartilage of the knee-joint. A patient of eighteen sprained the knee. The joint remained painful, and the external semilunar cartilage could be found subluxated. A fixation bandage was applied in the hope of causing adhesion of the cartilage to the head of the tibia, but there was no result. At the end of several months there was considerable effusion, and clicking movements of the joint. On the external surface there was depression between the head of the tibia and the condyle of the femur, especially marked on flexion. An operation being necessary, an incision was made, and the semilunar cartilage was found separated and divided into two fragments, which were removed. There was a rapid recovery, and the movements of the articulation became normal.

THE ULTIMATE RESULT OF FLAT-FOOT WHICH HAS BECOME STATIONARY.[21]

Lucke reports his generalization after considerable experience in flat-foot. He claims that every acquired flat-foot, whether it is rapidly or slowly developed, either when due to an abnormal weight (superincumbent weight) or through hereditary tendency, comes finally to a stage of rest and to a condition which may be regarded as more or less permanent. Persons who have what he terms a stationary flat-foot, usually suffer only from interference in the use of the limb, such as the peculiar gait which is so characteristic, without spring to the foot; and this also leads to a greater fatigue after long exertion. But this statement has its limitations, for there are a sufficient number of patients, even with well-marked flat-foot, who are able to go about both on level and on hilly country with perfect freedom. Lucke has found this to be the case in

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[16] Dr. Franz König: Medical and Surgical Reporter, June 25, 1892.

[17] Hoffa: Compte rendu du 21 Congrès de Chir., Allemand, 1892.

[18] Dr. Chas. T. Poore.

[19] Dr. Newton Schaffer: Medical Record, January 16, 1892.

[20] British Medical Journal, January 2, 1892.

[21] Lucke: Deutsche Zeitschrift für Chirurgie, xxxiv.

Switzerland among the cowherds, who are accustomed to climb the mountains. In general, the observation can be made that people with a well-pronounced flat-foot possess a weaker muscular system in the lower extremities, from the fact that persons with weak muscles of the legs are particularly inclined to flat-foot. But if the muscles are thoroughly developed and strong, either by energy in their use even while the feet are painful, or from the fact that their occupation obliges them to walk about, when the stationary stage is reached they become able to use their limbs with perfect freedom.

TREATMENT OF FLAT-FOOT.[2]

Dr. Whitman considers more particularly the question of the treatment of flat-foot with reference to its radical cure. He divides flat-foot into five classes: (1) Weak ankles, such as are seen in weak and rachitic children; (2) the long, weak foot seen in adolescents; (3) the weak foot in older people, particularly in women who are obliged to stand a good deal; (4) the flat-foot in young adults, which is accompanied by spasm and a good deal of rigidity; (5) the true flat-foot without particular symptoms. He lays a good deal of stress upon the position in which the foot is used; and he calls the weak position that of toeing outward, and shows that the strong and healthy position is with the toes pointing directly forward, with no tendency to abduction. He considers that the cause of the breaking down of the arch, in adults particularly, is not necessarily due to an inherent weakness, but rather to a disproportion between the amount of weight that is borne and the disadvantage at which the part is placed. For instance, he considers that the attitude in standing and the position of the feet in walking have much to do with the breaking down and forming of this condition; that the toes should normally point directly forward and not out, as in the ordinary way, in which the greater part of the weight is thrown upon the inner arch and thus places the foot at a disadvantage. The principal symptoms he classifies, which are usually present, are inelastic walk, the deformity, pain, and stiffness.

The treatment he sums up as follows: (1) Forcible correction and over-correction; (2) the temporary support; (3) proper shoes; (4) the manipulation and stretching of the short and contracted structures; (5) exercises; (6) re-education of the patient in the proper manner of walking and supporting weight. He considers the manipulation of particular importance and is the same that was described by him some time ago in another journal.

The subject has also been considered in a very comprehensive way by Mr. Dane, of the Massachusetts Hospital. He has also in this made a study of the development of the arch in infants, in which he has made the following conclusions: At birth there is a normal arch, which is maintained until at about the age of eighteen months. At that time it begins to disappear, and a little more quickly and fully in boys than in girls; this he considers as due to the additional weight of the sex. At about the age of three the arch then begins to reappear, and in this case a little earlier in the girls than in the boys. He explains the condition as follows: At birth the arch normally exists; at the time when weight is begun to be borne on the foot the muscles are not strong enough to sustain the weight fully and it gradually breaks down, but later, with the completion of muscular development, the arch re-forms. In all of these stages, however, some exceptions are of course found, as in infants, feet are found flat, and again, others in which the arch has not disappeared.

PAINFUL AFFECTION OF THE FOOT.[3]

The author has described a condition which he considers analogous to anterior metatarsalgia, but located in the great toe. He considers this as due ordinarily to wearing too narrow shoes, and the condition is located in the joint and causes a compression upon the nerve. It, as a rule, appears suddenly, and is easily cured by adopting the proper kind of shoe — ordinarily a wide one, and sometimes one with a place left for the enlarged joint. At times the condition has appeared very suddenly, and again has disappeared when the proper shoes were applied.

A CASE OF VALGUS TREATED BY OPERATION.[4]

The author describes a case of extreme deformity of this character treated quite successfully by means of operation. In this case there was probably an inherited tendency, and the patient also presented a spina bifida which had been cured spontaneously. The foot presented a condition of extreme valgus with dorsal flexion and abduction, so that very little of the sole came to the ground in walking and a large callus formed over the head of the astragalus. The operation consisted of tenotomy of the long peroneal and the common extensors, and of open incision of the integument and the articulation of the cuboid. On the inner side the operation consisted of a wedge-shaped piece of the scaphoid, of the head of the astragalus, and of a portion of the cuneiform and scaphoid. The wire suture was used to hold the bones in position. The result was by no means perfect; but there was marked improvement in the foot, both in its appearance and in its usefulness.

CONGENITAL SPASTIC PARALYSIS.[5]

Lorenz divides this affection into three groups: (1) Where there is equinus; (2) where there is a contraction of the flexors of the knee; (3) those which are characterized by a contracture of the abductors of the thigh. The gait is awkward, rather by the exaggerated action of muscles than by the paralysis. The treatment consists of tenotomy, excision of the nerve or of the tendons. In equinus, tenotomy of the tendo-Achillis is sufficient. In four cases of contracture of the abductors Lorenz excised the obdurator nerve on both sides. In the contracture of the knee he recommends simple section of the biceps, and a resection to the extent of one or two centimetres of the tendon of the right insertion of the semi-tendinosus and the internal insertion of the semi-tendinosus and semi-membranosus. In one case ten tendons were either divided or excised. The result was very satisfactory.

CASE OF MYOSITIS OSSIFICANS.[6]

This author reports a case of this rare condition occurring in a child of seven years, in which the condition had existed for three years. The disease was located principally in the muscles of the neck, shoulders, and back. There were also exostoses along the spinous processes and on the tibia and radius. An examination of the tumors in the muscles disclosed a spongy tissue which was covered by connective-tissue, and in this were found calcareous cells, while the exostoses were found to be true bone resembling epiphyseal formation. A table is given also containing 37 cases, which are carefully analyzed He comes to the conclusion that it is a disease found principally in infants; it is one of nutrition primarily; the muscles of the neck and back are most often affected. It is due primarily to some disturbance of nutrition, and the condition is usually one of degeneration of connective-tissue accompanied by inflammatory change which is more or less constant, and is also evident in the rigidity of certain articulations. Certain deformities often accompany it, as torticollis and scoliosis, which are, however, purely mechanical, due to the presence of the tumors. The nature of the malady is not known. The termination is usually fatal, and its duration about ten years.

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[2] Dr. R. Whitman: New York Medical Journal, February [illegible], [illegible]

[3] Dr. G. Gautier: Lancet, March [illegible], [illegible]

[4] E. D. Lardner: Revue d'Orthopédie, September, [illegible]

[5] Internat. klin. Rundschau, [illegible], No. [illegible]

[6] Dr. [illegible]: Archivio di Ortopedia, No. [illegible]

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, November 28, 1892, Dr. FREDERICK I. KNIGHT in the chair.

DR. FARLOW showed a photograph of a man with a

HARD CHANCRE OF THE UPPER LIP.

It had been mistaken for malignant disease, but it presented marked characteristics of the initial lesion. It disappeared under specific treatment, and later was followed by a secondary ulceration of the fauces.

DR. F. W. DRAPER read a paper on

POISONING BY ILLUMINATING-GAS.[1]

DR. A. L. MASON read a paper on

THE CLINICAL ASPECTS OF POISONING BY ILLUMINATING-GAS.[2]

DR. J. G. BLAKE: I have very little to add. My experience has been limited to poisoning by coal-gas and to illuminating-gas previous to the introduction of water-gas. The case of the child that recovered I do not recall. The woman I remember very distinctly; we had every reason to suppose that she was going to recover, having survived five or six days, but she sank away a good deal as you sometimes see in cases of opium-poisoning where you have a recurring narcosis. I remember one or two cases of that sort where I felt that perhaps the recurring narcosis, which was a new feature to me, but which is treated in the text-books on toxicology, might to some extent be due to the remedies. In this woman's case I thought perhaps the fatal result might be influenced somewhat by the condition of her kidneys, although the indications from the examination of the urine were not very marked. In the matter of coal-gas poisoning I had a very interesting experience in the early days of the hospital. There were four Irish laborers, recent arrivals in this country, who slept in the same room in which there was a cylinder stove. Before going to sleep they turned the damper and took off the lid of the stove. They were carried to the hospital the following morning in a state of profound coma. It was rather difficult to obtain oxygen in quantity in those days. I think we did succeed in getting one or two bags down on Boylston Street. We used that as long as it lasted and used as much as we could make in the hospital, but without effect in three cases. One, however, recovered. To what extent his recovery was due to the small quantity of oxygen gas I am unable to say.

I want to make a statement which is very peculiar. We remember the contest in the legislature of the Boston Gas-Light Company when opposing the manufacture of water-gas, the charter for which was sought by the Bay State Gas Company. A person connected with the gas company stated that there was no well authenticated case of death from the old illuminating-gas on record. I told him that the records of the City Hospital would prove the contrary. I suppose they were disinclined to admit that their gas was poisonous, and anxious to prove that the Bay State water-gas was poisonous to a greater degree.

The treatment that I should depend upon most would be supporting the patient, using stimulants, and the long-continued and careful administration of oxygen.

DR. E. S. WOOD: I have here two specimens of blood taken from patients poisoned with illuminating-gas, and they show very nicely the peculiar cherry-red color of the carbon monoxide hæmoglobin. One is the blood taken from the Clark woman, one of the three cases of poisoning which occurred in North Grove Street from the leakage of the gas-main there, and the other is a specimen of blood taken from the man found dead in the gas-holder at Fall River. The carbon monoxide hæmoglobin, which is the compound of the blood pigment formed by the carbon monoxide of the illuminating-gas, is an exceedingly stable compound of hæmoglobin. It is soluble. It is far more stable than carbon dioxide hæmoglobin, but it does yield to thorough treatment with oxygen, which explains the efficacy of the oxygen treatment. By repeatedly shaking a carbon monoxide hæmoglobin solution with oxygen it will gradually decompose and oxyhæmoglobin be found, and the inhalation of oxygen is the only rational treatment for the breaking up of this comparatively very stable compound of the blood pigment. Its stability is very well shown by these two bottles, the blood there being about two years old. The peculiar appearance of the coloring matter is as plainly perceptible to-day as then. One of these specimens I have mixed with an equal volume of borax solution. It keeps better in that way.

The diagnosis of such a case is exceedingly easy, on account of the peculiar spectrum of carbon monoxide hæmoglobin, which, when examined with the spectroscope, shows similar absorption bands to the oxyhæmoglobin; but if you treat the solution with a reducing agent you don't get the change which occurs in the case of oxyhæmoglobin. The two bands of oxyhæmoglobin, when its solution is treated with sulphide of ammonium, apparently unite and a large absorption band appears occupying the space between the two former; this does not occur with carbon monoxide. The reducing agent has no effect.

With regard to Dr. Mason's cases, I have been very much interested in them, but wish there could have been some analyses comparing the cases which occurred before the introduction of the present illuminating-gas and that of the old illuminating gas. The present gas contains somewhere in the neighborhood of thirty per cent. to fifty per cent. of carbon monoxide, and is very much more poisonous than that which used to be manufactured by the old Boston Gas-Light Company. Dr. Blake mentioned the hearing at the State House, which I attended, and opposed bitterly the doing away with the law restricting the quantity of carbon monoxide in illuminating-gas. I favored the restriction to ten per cent.— that was the old law. The fight in the legislature was by the Bay State Company to have this law repealed, so that they could manufacture water-gas and not remove the carbon monoxide from it; so that the present illuminating-gas contains a great deal more than the old limit. It is a very much more dangerous gas, more poisonous gas. Dr. Draper's statistics show the much greater fatality which has occurred in Boston from the illuminating-gas which has the larger proportion of carbon monoxide, and the treatment in cases of poisoning by the present gas is of less efficacy than the same treatment would be in cases of poisoning by the old illuminating-gas, because the amount of hæmoglobin in the blood which is changed to the carbon monoxide hæmoglobin is much greater now than from the inhalation of the same quantity of the old illuminating-gas with five per cent to six per cent. carbon monoxide.

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[1] See page 1 of the Journal.

[2] See page 5 of the Journal.

Dr. Homans: A gentleman connected with the Gas-Light Company told me that gas had killed more people in the first four months of this year than in the whole history of the Gas-Light Company before the water-gas was introduced. I do not think that was an accurate statement; it was probably an exaggeration, but it shows how fatal the present water-gas has been. My informant was an opponent of the introduction of water-gas. In my house on Beacon Street two years ago there was a smell of gas, and I got the gas people to come over from West Street several times. They could not seem to find it, but ultimately it was found in the passage-way behind the house under the asphalt pavement. There was a large leak and the gas had penetrated the house through the soil. I think these figures of Dr. Draper and Dr. Mason are very interesting, as showing how fatal this water-gas is. I would like to ask Dr. Wood if this gas would have any odor if other ingredients were not mixed with it.

Dr. Wood: No odor to speak of. Pure water-gas is composed of hydrogen and carbon monoxide, and is comparatively inodorous; and that inodorous gas can be used for heating purposes, which it was proposed to do at that time in many cities in the West. If it is used for illuminating purposes they are obliged to mix naphtha or certain other illuminants which have a powerful odor. I made the remark in a paper read before the American Public Health Association that the illuminating gas was comparatively little if any more dangerous than common coal-gas on account of the ease with which a leak in the pipes could be detected. I meant simply that *accidental* poisoning was not much more liable to be caused by it from an ordinary leak than by common coal-gas; but Robert M. Morse made a powerful handle of that statement, and used it with very great effect in his argument before the legislature. The plain water-gas has but little odor, and is exceedingly dangerous to use for heating purposes, even from a small leak, but the illuminating-gas has a powerful odor and can be detected pretty quickly.

Dr. F. Minot: I would like to make simply a historical allusion on the subject of treatment of asphyxia from carbonic acid gas, which I have already made, I think, to this Society once before, that about fifty years ago when I was in college two men were asphyxiated in the University building. One was a baker and the other a cook. They were found in the morning completely asphyxiated. The night before was very cold and they had lighted a charcoal fire in the bedroom in which they both slept. Prof. Webster suggested immediately the inhalation of oxygen gas, and accordingly several members of the Chemical Club, of which I was one, spent the day in manufacturing oxygen gas, which was given to these men. It being Sunday, we were consequently exempt from attendance at chapel and were very willing to perform that service. The most interesting thing in regard to the result is that one of the men died and the other recovered, they having both been treated with large doses of oxygen gas. I suppose it was not given so methodically as it now is, but they got a very large quantity of it.

Dr. A. H. Nichols: Upon observing the announcement of this paper, I had the curiosity to look up my records, to ascertain how many cases of gas-poisoning I had personally seen. Prior to the introduction of water-gas in Boston I had treated three cases of poisoning by coal-gas. One of these cases was unique and approached the nearest to what might have been a fatal homicidal poisoning. A mother, having been told that the fumes evolved from fresh coke in the Gas Works would relieve the spasms of whooping-cough, thought to obtain a similar anodyne effect by leaving her young child in a room having the dimensions of eight by ten feet. The odor having been detected by other families in the same house, the child was rescued, and, though partly insensible when I arrived, made prompt recovery.[3]

Since water-gas has come into use I have examined fifty-seven persons who have been affected, or in whose behalf claims have been made, by reason of gas-poisoning. Most of these cases did not prove very serious. From a medico-legal standpoint, the difficulty lay in discriminating between the symptoms attributable fairly to the toxic effects of gas and those arising from preëxisting or intercurrent disorders. It was not an easy problem to determine, for instance, to what extent, if any, a cardiac asthma had been aggravated by such exposure; or whether a threatened abortion might not be referred to such a cause. One man died shortly after a very slight exposure to this agent, which it was claimed was the direct and sole cause of his trouble. This very unreasonable claim was easily disposed of by an early examination of his chest, and thus learning of the existence of old tubercular degeneration of both lungs, aggravated by habits of intemperance.

The greater number of these cases were included in two separate accidents having this peculiarity in common, namely, that they resulted from leakage from a gas-main and in the winter. Now when the street pavement and underlying ground are firmly frozen there is introduced a new element of danger. For, whereas in summer the gas readily percolates the gravel and interstices of pavement, thus escaping to the air, when the ground is deeply frozen the escaping gas tends to travel horizontally, and thus passing through or beneath foundation walls of houses, and penetrating the partition spaces, may invade every portion of a large building, as I have had occasion to observe. It may be also mentioned that the location and repair of leakages from broken mains become a much more difficult and lengthy process when the ground is deeply frozen.

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[3] [illegible] carburetted hydrogen." — A. H. N.

As regards the after-effects of this poisoning, these were trivial and limited to a few instances, the symptoms being persistent dizziness, impaired digestion, and more rarely pains in the back and limbs, probably due to neuritis.

Dr. Buckingham: I also have met with a case where gas has gone into the house through the foundation wall on account of a break in the main, the ground being cold at the time. That is a very dangerous thing, one that you cannot possibly avoid with any amount of care paid to your own gas-pipes; and it is worth some attention on that account. Being exposed to this danger is a reason for the use of an unnecessarily poisonous gas being forbidden by law.

Dr. Vickery: One thing about poisoning from these broken mains. I remember noticing a report by some North Europe doctor — I think Norwegian — that some inhabitants of the uppermost part of a house were much greater sufferers than those in the lower part of it. Although the break was in the cellar, the gas affected the upper stories most. Of course, that might easily be explained, but it was a little unexpected to me.

Dr. Buckingham: In the cases I saw I was told the families in the lower part of the house were sick, and not higher up. It probably depends on the locality of the place of entrance as well as on the lightness of the gas.

Dr. Farlow: Some time ago I saw the foreman of a gas company, who told me that he had been "knocked out" by gas more than four hundred times. Of all the men under his charge who had been "knocked out," he had never known a case where the man was not able to resume work the next day. This foreman was very strong and seemed not to have suffered any lasting damage from his numerous accidents.

Dr. Wood: It was against this use of water-gas for heating-purposes that my paper was written for the Public Health Association. One thing that would tend to delay danger from that was because it would require a special service of pipes, one for the heating and another for the illuminating gas.

Dr. Mason: I can answer Dr. Wood's suggestion, so far as the figures go, but I don't think they are of much value, because the number of cases is so small — before 1890, thirteen cases with three deaths; since then, seventeen cases with four deaths. The proportion is about one in four. That, I suppose, shows nothing. It seems to me that recovery is more a matter of personal idiosyncrasy, or rather of susceptibility to the poison, than of treatment adopted or the kind of gas that is inhaled. Some persons can stand a great deal more gas than others, as is true with regard to other poisons. It seems to me that the matter of elimination ought to be more carefully considered in treatment. Free action of the skin, hot-air bath and rectal enemata might tend to promote recovery.

Dr. Warren: I have two specimens to show this evening. One is

A TUMOR OF THE THYROID GLAND

which I operated upon last Saturday at the hospital. The patient was a woman of about middle age, with a thyroid tumor of the left side which had been growing for many years, and during the last six months had caused a great deal of discomfort, particularly of a cardiac nature. On palpation, the upper lobe seemed solid and quite prominent, so that the finger could be pressed down behind it. The lower lobe seemed soft and vague, like a feather pillow, more like the vascular type of goitre, so that I hesitated somewhat on account of the feel of the lower lobe to remove it. On careful inspection the tumor seemed to pulsate. The pulsation seemed to be communicated, however, from the carotid. On removal it was found that both of these lobes were cysts, the firmness of the upper lobe being caused by tension of the cysts. The lower lobe was partly solid and partly fluid, and not so tense. It was removed by a horse-shoe incision, which was not quite completed. The important point to be observed in the removal of the tumor is to lay bare the top of the tumor keeping close to the capsule, and secure the superior thyroid artery, and go carefully down behind until the inferior thyroid artery is seen, and then be careful to take up only that and not the inferior laryngeal nerve, which runs along side of it. The patient has done well, and the temperature is now 99°. A curious complication has shown itself to-day, great rapidity and irregularity of the pulse, the pulse intermitting and going up to 160 beats. Digitalis was prescribed this morning. The patient seemed comfortable, and was eating her dinner placidly when I arrived. (Patient has since made a good recovery.)

The other specimen is

A SOLID TUMOR OF THE OVARY.[4]

Dr. Homans: Some years ago I removed a thyroid tumor (a cystic adenoma), which has two practically solid lobes, one extending down behind the sternum, and the other behind the left clavicle. The interesting part of the case was that the left vocal chord was completely paralyzed, and at the operation it was found that the recurrent laryngeal nerve ran round the sternal lobe and was compressed by it. The nerve was carefully separated from the tumor; and a fortnight afterwards the vocal chord was seen to be vibrating, showing that the functions of the nerve and of the chord had been restored by the removal of the tumor. The patient was examined laryngoscopically by Dr. Langmaid, both before and after operation and recovery. The case is recorded in the *Boston Medical and Surgical Journal* for January 13, 1876.[5]

In regard to solid tumors of the ovary, they are so rare that they may almost be thrown out in making a diagnosis. There is a solid tumor sometimes reported which has been at some time a fibro-myoma of the uterus and which has been gradually extending from the horn of the uterus, until it has got into the broad ligament and has aquired a pedicle almost as distinct as that of an ovarian tumor. (Mine have been on the right side.) But in these cases the ovary is present, whereas in this case of Dr. Warren's no ovary was found, if I understood him correctly. I should suppose that an ovarian tumor would not have any uterine muscular fibre in it, unless there is some in the structure of the Fallopian tube, but I am not enough of an histologist to speak on this question. The solid tumors of the ovary, except the sarcomas and cancers, generally have a cyst, small or great, in them somewhere.

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[4] See page 10 of the Journal.

Cystic Adenoma of the Thyroid: Boston Medical and Surgical Journal, vol. xciv, p. 44, January 13, 1876. The Journal at that time was so poorly indexed that it is almost impossible to find cases reported.

Dr. M. H. Richardson: I would like to know what Dr. Warren thinks of treating large cysts of the thyroid by incision and drainage. I have never removed the whole thyroid, but I have successfully drained in two cases of large cystic tumor. The first was that of a farmer, forty-five years of age, who for seven years had had a large tumor growing in the neck. Its pressure caused at times great dyspnœa, and the voice was affected by pressure upon the left recurrent nerve. The tumor had been tapped many times, and large quantities of fluid had been withdrawn. Each tapping was followed by immediate reaccumulation. He entered the hospital September 9, 1890; and I found a large tumor, evidently containing fluid, filling the whole supra-sternal region and extending down behind the left sternal-clavicular joint. At the first aspiration about twelve ounces of a sero-hæmorrhagic fluid were taken away. Two days later it was tapped again, and ten ounces of the same fluid removed. On the twelfth a similar quantity was taken out. When the cyst was full, the removal of fluid would be followed by immediate relief to his breathing. On the 17th, under cocaine, I made a large incision in the middle of the tumor in front, and removed a large amount of fluid. Part of the cyst wall seemed to be cartilaginous, but I could find no communication between the anterior cyst and the one extending down behind the clavicle on the left. A few days later an opening was found in the deeper cyst, through which a drainage-tube was passed deeply into the base of the neck. There was a free discharge for some weeks. The cysts gradually became obliterated by granulations. A year later the man was in perfect health. A second case, that of a woman of seventy-four, I saw several years ago at Quincy with Dr. Donovan. She had noticed a tumor in the region of the thyroid for eight years, though there had been something wrong there for thirty-six years. I found a large cyst of the thyroid, extending from the chin to the sternum, which I tapped. The cyst immediately refilled. In October of the present year, under cocaine, I made a long incision in the vertical axis of the tumor, and removed several ounces of bloody fluid. The source of the hæmorrhage was obscure, but it seemed to come from a small cavity in the posterior wall of the cyst. The bleeding was quite free from this place, and was sufficient to fill the cyst in a very short time. I stopped the hæmorrhage with the actual cautery, and a prompt recovery has followed.

This method seems to me much safer in the treatment of large cysts than the removal of the whole gland. In both of these cases, pressure had caused an almost entire absorption of the gland. I think no one would have considered seriously the question of dissecting out the entire tumor. It is best, when possible, to perform operations upon the thyroid without ether, on account of the danger from spasm of the glottis, and of a necessity which I have had to face at times, of performing tracheotomy through a large tumor.

Dr. Warren: I saw one case in consulation, where the diagnosis of large cystic thyroid in a old man was made; and the case was treated by the injection of iodine. The physician had tapped and drawn off fluid and injected an ounce of tincture of iodine. It was hard and firm and painful; and a week later I opened and drained, and the patient died. The patient wa then very feeble indeed. I think that the case would have been a suitable one for drainage, perhaps, primarily.

Dr. Cabot spoke of two cases of cystic goitre which he had seen. One case, operated upon by him in the past summer, was that of a young woman, in whom there was a number of small cysts, none of them larger than pullet's egg, and all of them containing a more or less hæmorrhagic contents. They were readily dissected out, and she recovered well from the operation. In the other case, that of an old man, there was a single cyst occupying the whole of one side of his neck, and causing great dyspnœa from pressure upon the trachea. This was aspirated, but filled very rapidly after aspiration. The fluid drawn off was hæmorrhagic, and the quick filling of the cyst suggested that a fresh hæmorrhage had taken place into it. The relief afforded by the aspiration was only temporary, and the man died within a week or ten days of the operation.

Dr. Warren: The case I mentioned filled up immediately the moment the iodine was injected. I should like to ask Dr. Shattuck if he has any explanation of the pulse. The pulse before the operation was normal, but the patient is said to have had one or two attacks of palpitation.

Dr. Shattuck: I saw the patient, at Dr. Warren's request, this morning for the first time, and when I noted the condition of the pulse and heart's action the possibility of Graves's disease occurred to me, but there was no exophthalmos and no tumor. The apex of the heart was one and a half inches outside the mammillary line. The action of the heart was extremely rapid, tumultuous and irregular; so much so that it was impossible to say whether any murmurs were present or not. It was my feeling that we had a distinctly enlarged heart, especially in the transverse diameter, with perhaps some valvular disease behind, and that the innervation of the heart had been seriously affected, possibly by the shock of the operation. My suggestion was that digitalis and bromide together should be given.

Dr. Warren: I did not know whether possibly pressure on the pneumogastric or sympathetic might explain it.

Dr. Shattuck: It seemed to me there was some old affection of the heart, because there was marked increase in the transverse diameter which could scarcely date from an operation.

Recent Literature.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; assisted by Walter Christie, M. D., formerly Instructor in Physical Diagnosis in the University of Pennslyvania. Vol. III. Pages 1352, with Illustrations. Philadelphia: Lea Brothers & Co. 1892.

The third and last volume of this work, although larger than either of the others, has been completed within an unusually short period. The most striking general feature of this volume is that it deals with the treatment of diseases that are largely in the hands of specialists. The chief groups are Diseases of the Skin, of the Nervous System, of the Genito-Urinary Apparatus, of the Eye and the Ear. These groups are each subdivided, and special portions of the subject are taken up by different authors. This has led to a certain amount of repetition.

Diseases of the Skin. — "Disorders of Secretion and New Growths," by H. Radcliffe Crocker, M.D., is a practical, clear and useful article. Dr. W. A. Hardaway takes up "Inflammations of the Skin." Of the diseases considered under this head eczema is most frequently met with, and is discussed in a good article of some twenty pages; but it would have been of service to a larger number of practitioners if greater emphasis had been laid upon the principles of general treatment and more detail given concerning the best methods, rather than a little about all methods. For those who have had a limited experience with this disease the decision between such a variety of lotions, pastes, ointments, baths and mechanical appliances might be embarrassing. In "Hypertrophies and Atrophies of the Skin," by Dr. James Nevin Hyde, Alopecia is well discussed; but the subject, taken as a whole, is of less general interest than the preceding. The article on "Neuroses and Parasites of the Skin," by Milton B. Hartwell, M.D., deserves special commendation.

Diseases of the Nervous System.—In "Hospital Treatment of Insanity," by Dr. Edward N. Brush, hospitals for the insane, commitment to asylums (that is, the steps necessary to commitment and confinement), hospital routine and construction, general management and discipline, occupation and recreation are briefly considered. This paper is full of facts which are too little understood by many practitioners; and it is creditable to the author that they have been so sensibly put, and to the editor that these topics have been brought within the scope of this work. In "The Medical Treatment of Insanity," by Dr. H. M. Bannister, such questions as, whether hospital or asylum treatment is the more suitable, proper control and superorsion of the patient, proper nourishment, attention to the condition of the bowels and methods of procuring sleep, are taken up. These are concisely treated, and excellent suggestions are to be found on every page. The article closes with a consideration of the different forms of insanity. "Chorea" forms the subject of a short article by Dr. B. Sachs. He considers rest and good food sufficient to cure the majority of cases. Among drugs he regards Fowler's solution as the best. Dr. J. Chalmers DaCosta begins his article on "Epilepsy" with the statement that "the pathology of epilepsy as taught to-day is a high probability, but, unfortunately, not an established certainty, and our remedial measures are suggested by experience rather than deduced from a scientific knowledge of any recognized, fixed and measured morbid process." When we realize that one person out of five hundred has epilepsy, and that others are predisposed to it, it is evident how useful this clear and sensible statement may be to every physician. The shorter article on "Tetanus," by the same writer, is also a good one. Dr. M. Allen Starr, in his article on "Locomotor Ataxia," emphasizes particularly the facts that "the disease from its very beginning depends upon certain changes in the connective tissue and nerve elements of the spinal cord which are permanent in character, and hence complete recovery in any stage is impossible"; that even the arrest of the disease is in most cases impossible. That the disease is slow in its progress and temporary improvement by the use of a new remedy should not deceive the physician, however much it may encourage the patient. Climate, exercise, massage, baths, counter-irritation, electricity, as well as the more recent method of suspension, are considered. In medicinal treatment, mercury and iodide of potassium should be first used; then, to relieve pain, such drugs as antipyrin and phenacetine given; and other accompaniments of the disease should be treated symptomatically. "Acute Infantile Spinal Paralysis, Myelites and Amyotrophic Lateral Paralysis" are each briefly considered by the same author. The various conditions which are properly included under the term "Apoplexy" are clearly outlined by Dr. Charles K. Miles, the treatment discussed and the best methods indicated. His short article on "Brain Tumor" epitomized the most recent knowledge on this subject. There is even less opportunity, in the author's opinion, to render aid in "Spinal Tumor" than in intracranial growths; antisyphilitic remedies and operation are prescribed as the only curative measures. "Meningitis, Cerebritis, Neuritis and a Short Notice of Beri-Beri" complete the group of good articles by this author. The treatment of "Disorders of Sleep," from a clinical stand-point, is well but too briefly outlined. The writer, Dr. Landon Carter Gray, gives a list of the causes of insomnia, and then takes up the hypnotics now so much used, together with other means for promoting sleep, such as mental and physical repose and electricity. For the form of insomnia dependent on intracranial syphilis, he considers it useless to attempt any other treatment than large doses of iodide. Antipyrin and exalgin are condemned. "Headaches and Neuralgia" are treated in two excellent articles by Dr. Wharton Sinkler. In the former article Dr. Sinkler begins with a general discussion of headaches, and then classifies them under the heads of anæmic, hyperanæmic, hemicrania, neuroæsthenic, dyspeptic or bilious, toxic, organic, reflex and constant chronic headache. The headaches of children are separately considered. Few subjects present greater difficulty, and they have been overcome in this article surprisingly well. It would not be easy to find a better presentation of this subject than is here given. "Nervous Disorders and Paralysis from Excessive Use of the Parts affected; Vertigo, Tremor and Lead Poisoning," by Dr. C. Eugene Riggs, adds another good chapter to this book. Dr. Joseph Ransohoff, in his article on "Cerebral Concussion and Shock," deals more with the symptoms and differential diagnosis than with treatment. Dr. T. D. Crothers opens his paper on "Morbid Habits" with a very able discussion of alcoholism and inebriety and opium inebriety; other habits, such as chloralism, cocainism, etc., being of less importance, are accorded a less full consideration. Dr. F. X. Dercum takes up the subjects of "Localized Spasms, Localized Palsies, and Facial Hemiatrophy." The reputation of the writer is a sufficient guarantee of the good quality of these articles.

Diseases of the Genito-Urinary Apparatus. — "Nephritis, Pyelitis, Phosphaturia, Chyluria, Albuminuria, Lithuria, Oxaluria and Diabetes Insipedus" are discussed by Dr. Andrew H. Smith. The article is an excellent one, and the author has devoted the space at his disposal strictly to the question in hand. His observations are evidently drawn from a large experience, and his recommendations as regards treatment are wise and clearly put. The paper by J. William White, M.D., on "Gonorrhœa and its Complications;

Stricture, Cystitis, Hypertrophy of the Prostate, Atony of the Bladder, and Vesical Calculus" is among the most practical in the volume, and adds much to its value. "Diseases of the Prepuce, Glans Penis, and Testicles" are very completely outlined by Dr. Edward Martin; but the writer has given a larger share of attention to causes, diagnosis or anomales than is required. The article on "Diseases of the Vulva and Vagina (Non Venereal), and Leucorrhea," by T. J. Watkins, M.D., might well have been shorter, and many of the illustrations would have been more appropriate in a work on gynæcology. Dr. R. L. Dickinson, in his article on "Diseases of the Uterus," takes a broader view of his subject than is usual by writers on this topic. He states that most gynæcologists neglect the study of surroundings and habits that are unfavorable to the patient, and confine themselves too closely to local, persistent, tedious treatment. He begins his article by a very practical discussion on dress, and shows that correction in this particular should form a part of the treatment of uterine disease, and further, by excellent illustrations, he points out how these changes may be made. The importance of muscular exercise is also insisted upon. The various forms of endometritis are next considered, also malpositions of the uterus, and finally fibroids and cancer of the uterus. This group of diseases closes with three good articles: one on "Amenorrhœa, Dysmenorrhœa, Menorrhagia, and Sterility," by Dr. Hunter Robb; the second on "Diseases of the Broad Ligaments, Tubes, and Ovaries," by Howard A. Kelly, M.D.; and the third by Dr. Barton Cooke Hirst, on "Diseases of Pregnancy, Parturition, and of the Puerperium; Extra-Uterine Pregnancy and Abortion."

Diseases of the Eye. — The opening article, by Dr. W. F. Mittendorf, makes an excellent introduction to this subject, as his article has a wider scope than the others, and is full of valuable suggestions about diseases of this organ. Since a diagnosis can be made in nearly three-quarters of all diseases of the eyes by a careful and systematic examination of the exterior of the eyelids and eyeball, he gives full instructions in regard to the methods of making such an examination. Under treatment, the writer considers such topics as rest, compresses, shades, colored glasses and local anæsthetics, and includes a warning against the use of strong solutions of cocaine and the possibility of harmful action therefrom upon the epithelium of the cornea. The article on "Diseases of the Conjunctiva, Sclera, and Cornea," by Dr. George E. de Schweinitz, is rather diffuse. The writer, however, emphasized the important fact that a large proportion of children who are blind have become so as a result of ophthalmia neonatorum; and too much prominence cannot be given to this point. "Diseases of the Iris and Ciliary Body and Sympathetic Affections," by Charles J. Kipp, M.D., is an excellent article, and includes the treatment of plastic iritis and chronic plastic iritis, likewise the operation for iridectomy and the one for enucleation. "Diseases of the Optic Nerve, Retina, Choroid, and Vitreous; Amblyopia, and Amaurosis," by Dr. S. C. Ayers, includes a group which is of more interest to the general practitioner, from the stand-point of diagnosis and prognosis, than from that of treatment, as they are less frequently encountered and demand the special use of the ophthalmoscope. The article is well written, and the illustrations excellent of their kind. In the short paper on "Diseases of the Lens and Glaucoma," by Dr. Swan M. Burnett, the practitioner will find some good suggestions. As the treatment of these diseases is chiefly operative, this article, like the preceding, has most interest for the ophthalmologist. In the operation for cataract there is no haste; but the operation for iridectomy, on the contrary, must sometimes be done immediately, therefore more than a short paragraph might well have been given to the special difficulties of this operation, or a reference made to the excellent description of it in a previous article. "Diseases of the Orbit, Lachrymal Apparatus, and Eyelids" forms the subject of a paper by Dr. Henry Gradle. Among the diseases here described, those of the lachrymal passages will prove of most service to general practitioners. "Injuries of the Eye and its Appendages" is treated in a separate article by Dr. F. Buller; but they might well have been included with diseases of the orbit. The article on "Diseases of the Ocular Muscles, Paralytic and Concomitant Squint, Asthenopia, Spasms of the Ocular Muscles, and Nystagnus," by Dr. Lucien Howe, and the one on "Optical Therapeutics; Normal and Abnormal Refraction; Presbyopia; and Principles Involved in Fitting Glasses," by Dr. Edward Jackson, deserve especial commendation; for in them we find difficult subjects well considered and clearly presented. This is especially true of the subject of optical therapeutics.

Diseases of the Ear. — This section begins with "Diseases of the External Ear and Tympanic Membrane," by Dr. B. Alexander Randall, and relates chiefly to inflammatory conditions of the auditory canal, impacted cerumen and foreign bodies. The writer makes many good suggestions, especially concerning the removal of the latter. This is followed by two good articles; the one on "Acute Diseases of the Middle Ear," by Dr. Robert Barclay; and the other on "Chronic Purulent Disease of the Middle Ear," by Samuel Sexton, M.D. "Chronic Catarrh of the Middle Ear and Diseases of the Internal Ear," by Dr. Charles H. Burnett, completes this group. The author here very wisely begins his description of the treatment of chronic catarrh of the middle ear with some hints in regard to the care of the nares and naso-pharynx.

The owner of this work on therapeutics will find it a valuable one. It will assist him in giving relief to his patients, and will show him clearly what the limitations of the best treatment really are, in what cases we are able to render great service, and in what we can do little or nothing beyond palliation of the symtoms.

The Diseases of the Stomach. By Dr. C. A. Ewald, Extraordinary Professor at the University of Berlin, etc. Authorized translation from the second German edition, with special additions by the author, by Morris Manges, A.M., M.D. With thirty illustrations. New York: D. Appleton & Co. 1892.

Professor Ewald is generally recognized as a foremost authority upon the digestive functions and the diseases of the digestive organs. This octavo volume of 500 pages consists of twelve lectures delivered at the vacation course for physicians. Owing to the personal revision of the translation by the author, it practically represents in English the equivalent of the third German edition, which had not appeared when this translation was published. It is really Volume II of Professor Ewald's *Klinik der Verdanung's*

Krankheiten. The first volume treated of the physiology of digestion; a third volume, also has been promised by the author later, upon the diseases of the intestines.

The three parts are quite independent of each other. Among the other important subjects discussed in these lectures are cancer and ulcer of the stomach; gastrectasis; gastritis, acute and chronic; gastric neurosis; diabetes and gout; tests for determining the secretions, the motor functions and absorptive power of the stomach; the diagnostic value of increase or diminution or absence of hydrochloric acid, etc.

To one who would keep abreast of the latest and best work in this department of practical medicine the book is indispensable.

Hygiene and Public Health. By Louis C. Parkes, M.D., D.P.H., London University. Third edition, illustrated, p. 523. Philadelphia: P. Blakiston, Son & Co. 1892.

This excellent hand-book has been considerably enlarged, as compared with former editions, the added material having reference chiefly to the subjects of smoke-prevention, meteorolgy, and epidemic influenza. Dr. Parkes's experience as a teacher of public hygiene has enabled him to deal with the whole subject in a practical and intelligible manner.

The topics presented in this volume are the following: (1) Water, its sources, composition, distribution and purification; diseases produced by impure water, and its chemical and biological examination. (2) Disposal of Excreta and other Refuse. This chapter treats of conservancy systems, water-carriage, sewers, and sewage-disposal. (3) Air and Ventilation, including the composition of the air, ventilation, and methods of air-analysis. (4) Warming and Lighting. (5) Climate and Meteorology. (6) Soils and Building-Sites. (7) Food, Beverages and Condiments. (8) Exercise and Clothing. (9) Communicable Diseases and Their Prevention. (10) Vital Statistics.

A Manual of Physics. By William Peddie, D.Sc., F.R.S.E. Crown 8vo, pp. 496. New York: G. P. Putnam's Sons. London: Baillière, Tindall and Cox.

The book contains a condensed review of the principles of pure physics. Chapters I and II are introductory; the former giving an outline survey of the domain of physical science in which some of the broad fundamental problems of physics proper are merely touched upon; the latter briefly summarizing methods of study. In Chapters III to VI (inclusive) the more purely mathematical portions of the subject are dealt with and in the remaining twenty-seven chapters, which include four-fifths of the total number of pages, the several classes of phenomena which form the subject matter of experimental physics are treated of in the usual order. The text contains almost no matter-of-fact detail; the few descriptions of apparatus, and of experiments actually performed, therein contained, suffice merely to make clear the main principles of construction of the former, and the aim and final outcome of the latter. Throughout the book generalization is made to form the focal point of attention. A minimum of selected facts — the final results, chiefly, of crucial experiments — being given, in some cases as illustrating, in others as affording evidence for or against a previously stated theoretical conception. Barring a few uncorrected typographical errors there is but little room for critical comment as regards accuracy of statement. In not a few places, however, explanations though accurate are so brief that their clearness to students using the book as "an introduction to the study of physical science" may be questioned. This over-condensation is the more to be regretted because it will, in no slight degree we fear, curtail the usefulness of a very carefully written and well arranged digest of theoretical physics.

A Text-Book of Morbid Histology. For students and practitioners. By Robert Boyce, M.B., M.R.C.S. London: H. K. Lewis. New York: D. Appleton & Co. 1892.

This book represents a new departure in text-books on Pathology. The general arrangement and division of the subject, which is found in other text-books, is not followed here. The book is copiously illustrated with colored reproductions of micro-photographs. Most of these are made with a low power, and some of them are fairly good representations of the conditions met with. A great part of the work is taken up with descriptions of these micro-photographs; and the book is, as it were, built around the illustrations. Very minute descriptions of the illustrations are given in many places; but the descriptions are made rather from the specimens from which the plates are made than from the plates themselves. It is impossible to follow in many of the plates and to recognize in them the various things which are described. In those made with a low power the different sorts of cells in the tissue cannot be recognized. We think that the time has not yet come when micro photographs can be used for general purposes of illustration. For the student drawings must be made more diagrammatic; and the various appearances must be not only illustrated, but to a certain extent explained. The photograph gives only what appears in one focal plain under the microscope; and one always sees, in looking at a section, much more than can be represented in a photograph. Apart from the illustrations the book is fairly good. A very small amount of space is given to the technique of microscopic examination, and many important pathological processes are scarcely described at all. The paper and print of the book are admirable.

A Manual of Medical Jurisprudence. By Alfred Swaine Taylor, M.D., F.R.S., Revised and edited by Thomas Stevenson, M.D., London. Eleventh American, edited with citations and additions from the twelfth English edition, by Clark Bell, Esq. Philadelphia: Lea Brothers & Co.

The merits of this work are so well recognized, and its value as a standard text-book for medical instruction and as a trustworthy guide in medico-legal emergencies is so fully appreciated, that the mere mention of the appearance of a new edition is quite sufficient as a reminder of its excellent character. A critical review of its contents is superfluous; it is enough to assert with confidence that as a manual upon the subject of which it treats, without the pretensions of a full treatise or encyclopædia, it is not excelled by any other work on medical jurisprudence in the English language. If the medical practitioner is obliged to limit his literature upon legal medicine to a single volume, he will not make a mistake if he gives his preference to this one, just issued in its eleventh American edition.

THE BOSTON

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CREMATION *VS.* THE ABUSES OF BURIAL.

THE subject of cremation has awakened but a small share of public interest thus far in the United States, as compared with that which has prevailed for several years upon the other side of the Atlantic. It has taken its strongest hold in Italy, where nearly every one of the large cities has an established crematory, usually in connection with the principal cemetery as at Milan.

In England, while the practice has not yet become very general, public discussion has waxed stronger and stronger. Medical and sanitary organizations, together with their published journals, have devoted time and space to the subject. Sir Henry Thompson may be considered as the champion of cremation in England, while Mr. F. Seymour Haden, of the Burial Reform Society, is its chief opponent.

In a paper read by the latter before the Society of Arts at London, November 23, 1892, the author presented the following as the objects of his address:

(1) To contrast burial as it is, with burial as it ought to be, and again burial as it ought to be, with cremation as a proposed substitute for it.

(2) To test the validity of a statement made by Sir Henry Thompson at the late Congress of Hygiene and Demography, to the effect "that burial, by spreading infection, is a cause of increase in the zymotic death-rate."

(3) To prove that, as the practice of cremation would render the clearing up of any doubts which might subsequently arise as to the cause of death in any given case impossible, such a practice cannot fail to operate as a direct incentive to crime, especially to murder by poisons known by the criminal to be difficult of detection without prolonged, and possibly repeated, methods of investigation.

On the one side, the cremationists are accused of polluting the air, and on the other the advocates of burial are said to pollute the water; and while the arguments on both sides contain elements of truth, there is also so much error as to obscure the real question at issue.

Mr. Haden takes the ground that burial in the earth can have no perceptible effect upon neighboring water-supplies, since, as he says:

> "A body properly buried, does not even remain in the earth, but returns to the atmosphere. . . . The part played by the earth in its resolution is that of a porous medium between it and the air which is above it. Through this medium the air with its dews and its rain filters, and, when it reaches the body, oxidizes it, that is to say, resolves it into new, and harmless products; and then these new products pass upwards again through the same sieve-like medium, re-enter the atmosphere and become the elements of its renewal, and of the nourishment and growth of plants. The body, in fact, literally as well as figuratively, ascends from the dead. . . .
>
> "By burial, the body remains at rest till such time as its perishable parts re-enter the air, and its imperishable parts remain (as nature intended) to form an integrate part of the earth's substance."

In the foregoing statement the truth is concealed by a wrong method of stating the question. Undoubtedly, a minute fraction of the body may, after being resolved into its constituent elements, pass upward to the outer air, but a far greater portion reaches it, if it reaches the air at all, by first passing downward through the water, which is polluted to a greater or less extent thereby. This point is confirmed by certain experiments made by the State Board of Health at Lawrence, Mass., during the past four years. The numerous experiments performed at the experiment station involve a large number of questions relating to the filtration of water through soil. Among them was the following:

A tank twelve feet deep was filled as follows: Six inches of gravel and coarse sand were put upon the bottom, and above this five feet of sand and loam from a cemetery. Water was then filtered through this sand and loam for three months; and the effluent at the end of that time gave the following analysis: free ammonia, 0.0014; albuminoid ammonia, 0.0024; chlorine, 0.23; nitrates, 0.0250; and nitrites, 0.0002 parts per 100,000.

On December 18, 1889, the carcass of a dog, weighing eleven and a half pounds, was put on the surface, and this was covered with six feet of sand and loam similar to that below.

From January 1, 1890, to November 21, one and a half gallons of water were poured upon the surface each week. This is a little more than the average weekly rainfall upon such a surface and would represent about 8,600 gallons per acre of land surface. The changes that occurred in the effluent from month to month are presented in the table of monthly averages of analyses of the effluent, given on page 22.

By the following table of analyses it appears that the chlorine increased in four months from 0.23 parts — which was that of the water going through the lower five feet before the carcass was buried — to 9.21 parts; and then gradually decreased in the next seventeen months to about its normal condition as a constituent of the effluent, before the carcass had been buried.

The nitrates were no higher than the water applied, for six months; that is, in this time there was no nitrification, but in the next two months the nitrates increased to 0.8500 parts, and then gradually fell in the course of the next year to zero.

The nitrites increased with the nitrates to 0.1850 parts and then decreased to zero in the following August (1891).

Date	Ammonia.		Chlorine.	Nitrogen as		Bacteria per cubic centimetre.
	Free.	Albuminoid.		Nitrates.	Nitrites.	
1889.						
October 30	.0011	.0024	.23	.0250	.0002	
December	.0140	.0161	3.11	.0280	.0004	.
1890.						
January	.0067	.0044	6.26	.0275	.0001	..
February	.0033	.0043	7.30	.0225	.0010	
March	.0031	.0082	8.21	.0125	.0000	..
April	.0037	.0114	9.21	.0050	.0002	
May	.0034	.0153	7.47	.0200	.0000	..
June	.0033	.0214	4.67	.0350	.0000	..
July	.0878	.0178	3.23	.1700	.0050	..
August	1.6990	.0394	2.52	.8500	.1850	..
September	6.5350	.0461	1.85	.7750	.0617	4,319
October	11.4250	.6850	1.76	.1475	.0271	18,360
November	26.6250	2.8000	1.49	.0925	.0082	4,796
December	23.7500	1.7500	1.03	.0950	.0525	96
1891.						
January	21.2500	1.3000	.64	.2700	.0420	362
February	16.7500	1.1000	.54	.0150	.0180	10
March	12.0000	.6000	.51	.0100	.0011	52
April	11.8750	.5500	.41	.0165	.0003	3
May	9.2500	.4250	.34	.0010	.0013	5
June	7.5000	.4000	.36	.0020	.0020	0
July	6.5000	.2500	.45	.0000	.0010	..
August	6.5000	.1400	.28	.0000	.0000	0
September	5.3000	.2400	.25	.0000	.0004	1
October	5.7000	.1200	.35	.0000	.0020	18
November	6.0000	.1600	.37	.1600	.0080	0
December	4.7500	.1200	.30	.1000	.0120	15

The free ammonia was low and nearly constant, at about .0034 parts per 100,000 for six months, and then very rapidly increased to 26.6250 parts in November. It then decreased with considerable uniformity of rate, but with less rapidity than its previous rate of increase, till the close of 1891.

The albuminoid ammonia increased but little for seven months, and then slowly for two months, after which it increased rapidly until November, when it averaged 2.8 parts per 100,000. The odor of the effluent grew very strong and offensive, and was most nauseating in July, 1890, since which it gradually decreased with the reduction of organic matter in the effluent.

The outlet was trapped in December, 1890, which may account to a considerable degree for the rapid reduction of the bacteria after that date.

From this experiment it would appear that the organic matter of the decomposing body does not (as Mr. Haden's statement would imply) all go upward filtering through the soil, to the outer air, but reaches the air, if it reaches it at all, by first polluting the water of the neighboring subsoil.

Mr. Haden's conclusion, "that water is not a carrier of any one of the contagious diseases which comprehend the zymotic death-rate," cannot be sustained in the light of the modern experience of cities having polluted water-supplies.

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RECENT THEORIES AS TO THE PATHOGENY OF EPILEPSY.

It is not strange in this age of bacteriology when so many hitherto unexplained morbid conditions are referred to microbes and their toxines that attempts should have been made to account for the pathogeny of epilepsy by attributing the convulsive and other characteristic nervous phenomena to an intoxication or poisoning of the nerve centres produced by microbes. Many have been struck by the resemblance of those phenomena to the symptoms produced by certain vegetable or mineral poisons; and there is something about the intermittency or periodicity of epileptic seizures which markedly resembles the crises of malarial disease, now known to be of parasitic origin.

Dr. Pierre Marie has developed the theory as far as the present state of speculative science will permit in its application to epilepsy.[1] He points to the great number of instances in which the epileptic habit follows scarlet fever, small-pox, measles, typhoid fever, diphtheria, or some of the infectious gastro-intestinal maladies, and believes that any one of these infections may produce certain gross lesions in the cerebrum (neuroglic sclerosis or gliosis) which perturb the functions of that organ, and find expression in the crises of the *petit mal or grand mal epileptique.*

The dependence of the epileptic syndrome on any gross lesions of the cerebrum has been denied by Drs. Paul Blocq and G. Marinesco in a recent paper published in the *Semaine Médicale.* After an exhaustive study of "the lesions and the pathogeny of the so-called essential epilepsy," they conclude:

(1) In a certain number of cases of idiopathic epilepsy, there exist no appreciable lesions of the nerve centres.

(2) In the cases where these lesions are observed, they are very variable.

(3) The most constant lesions, when such exist, are seated in the psycho-motor zones, and are characterized: (*a*) by vascular alterations, and (*b*) by hyperplasia of the neuroglia, sometimes at the surface of the cortex, sometimes at some depth.

These writers, who have done some good work in Charcot's laboratory, admit the frequent occurrence of cortical lesions of vascular origin in epilepsy, but believe that far from being primary, as Chaslin and Marie teach, these lesions are secondary, and consecutive to the attacks. The lesions do not explain the genesis of the fits, and moreover, they are not absolutely peculiar to epilepsy. They indicate simply a functional hyperactivity in the cortical region where they predominate. "It is the repetition, more or less frequent, of those attacks of congestion and of hyperactivity which eventually bring about neuroglic sclerosis, a process which has its maximum of intensity in the surface layer."

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[1] Progrès Médical, October 21, 1887; and Semaine Médicale, 1892, p. 282.

In attempting to explain the causation of epileptic convulsions, these writers point to facts of experimentation (by Brown-Sequard and others) which show that in this pathogeny, there are two factors: *the epileptic state* and *the epileptogenous agent.* The former is a special morbid condition (undoubtedly often hereditary) which renders possible a convulsive seizure with loss of consciousness; the other factor is what determines the attack itself. We have still to appeal to Brown-Sequard's experiments on the guinea-pig for illustration. There is in the nervous system of the mutilated animal a morbid susceptibility (we can find no less vague term) which manifests itself by the appearance of the attack of epilepsy under the influence of agents which will not produce a convulsive paroxysm in an animal not thus mutilated. Thus, in certain guinea-pigs subjected to the lesion of the cervical cord or sciatic nerve, and which had never had fits, asphyxia practised subsequently provoked a frank and complete attack of epilepsy instead of the ordinary convulsions of asphyxia.

In admitting that in epileptics there exists an abnormal excitability of the psycho-motor zones, we may ask, What are the agents which determine the paroxysm?

The influence of a great many of these, most of them, in truth, accidental, is already well known: traumatism, fatigue, coitus, strong emotions, etc. There is, moreover, an influence to which in the present movement of thought, there is a tendency to attribute a considerable importance, namely, that of intoxications, and in particular, of auto-intoxications. Marie has called attention to the rôle of alcoholism in the etiology of epilepsy, as also of ergotism and of infections generally, and Firé in his researches on the urotoxy of epileptics has shown that the toxicity of urine augments in the pre-paroxysmal period to diminish considerably after the paroxysm. Still more recent experimental researches go to support this view of the frequently toxic origin of the epileptic seizure. Herter and Smith in thirty cases of essential epilepsy have made examinations of the urine, not only to determine the proportion of urea and uric-acid, but also that of indican and other substances whose relative quantity is in relation to the presence [2] and activity of intestinal putrefactions. They conclude "that certain processes of intestinal putrefaction (on which the bromide seems to have no influence) play an important part in the pathogeny of idiopathic epilepsy, in this sense that there exists a constant relation between the degree of these putrefactions and the frequency and character of the fits." "If," say they, "intestinal putrefaction plays a rôle in the causation of some cases of epilepsy, it is certainly operative only in determining seizures, and probably acts in most cases, and perhaps in all upon that predisposition to the excessive liberation of nerve force, either hereditary or acquired, which we must recognize as by far the most powerful factor in the causation of the disease."

At a recent meeting of the Academy of Sciences, (September 12, 1893) Brown-Sequard spoke of "some new facts relative to the physiology of epilepsy." He has found that complete attacks in the guinea-pig follow not only section of the sciatic nerve, but also amputation of the thigh. If the amputation is made at the lower part of the thigh, the disease develops more slowly than if it is made in the upper third. A peculiarity worthy of attention exists where the attack of epilepsy is produced by pricking or section of the cervical cord. The effect is not immediate; a variable period of time — a few seconds or a few minutes — elapses between the moment of the lesion and the commencement of the fit. It is in this period of time that the organic process is effected which constitutes the morbid state, the epilepsy *in potentia.* It is so with the inception of the attack of epilepsy in the dog whose motor centres are faradized; a variable time is required to develop the state, which is likely to be permanent.

"Facts absolutely decisive," he declares, "have shown me that a violent epileptic seizure with all the characteristics which distinguish it in the guinea-pig, may be produced when there remains nothing of the nervous centres but the spinal cord, the encephalon having been removed." He believes himself warranted in the conclusion "that epilepsy has no special seat in the encephalon, and that all parts of the nervous system, central or peripheral, may produce it."

It is needless to say that this is not the view held by the majority of leading physiologists. Convulsion, as Jules Christian says, is not the pathognomonic sign of epilepsy. In vertigo, in absence, there is no convulsion. The essential sign of the disease is the loss of consciousness, sudden and absolute, which accompanies all epileptic manifestations, and without which there can be no epilepsy. "If this is so; if the essential characteristic of an epileptic attack is its suddenness, its complete instantaneous abolition of intelligence and sensibility; if the convulsion is nothing more than an accessory, accidental element, is it not evident that the seat of the disease must be looked for, not in the organs which produce movement, but rather in those where intelligence and sensibility have their seat?" [4]

A GIRL in Michigan who had been dumb for fourteen years, suddenly regained her power of speech and is now so talkative that the man who was going to marry her has broken off the engagement.

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[2] New York Medical Journal, August [illegible] September [illegible], 1892. Quoted by [illegible] Marinesco.

[3] New York Medical Journal, September [illegible]

[4] [illegible] Journal of Mental Science [illegible] quoted [illegible]

HOSPITAL FACILITIES IN LARGE CITIES.

THE trustees of the Boston City Hospital, in response to requests of the city government, have submitted a report upon the extension of the hospital facilities to different and distant parts of the city. The constantly growing demand upon the present hospital, and the desirability of establishing a broad comprehensive plan for future development, suggested the propriety of a careful consideration of the whole question in all its bearings. Such a consideration the trustees seem to have given it. This is a problem which all large cities, with expanding territory and increasing population, are called upon to meet.

In this report three solutions of the problem are discussed — a smaller but complete general hospital, an emergency hospital, and a hospital station for imparting first aid to the sick, and for assisting them, if necessary, to the present City Hospital.

In discussing "complete local hospitals," the trustees have investigated the present hospital accommodations existing in Boston, and their situation with territorial reference to the different portions of the city, the hospital accommodations offered by other large cities, the provision made in this country and in Europe for branch and local hospitals, the number of beds required in proportion to the population in smaller local hospitals, and the cost of establishing and maintaining smaller or local hospitals.

As a result it is found that Boston with its eighteen hospitals is, comparatively speaking, already unusually well provided. In 1864 there was but one hospital bed to every 516 inhabitants. At present there is one hospital bed to every 244 inhabitants. The municipal hospital is centrally located, and the various public and private hospitals are well distributed with reference to the population.

If complete branch or local hospitals were to be established, the total cost of such institutions in the five districts of East Boston, Charlestown, Brighton, West Roxbury and Dorchester, would not be less than $700,000, and the maintenance would annually amount to not less than $127,000.

The necessity for the establishment of such hospitals is not apparent to the trustees; the expense would be enormous; their management from one centre would probably be impracticable; and they would be successively worked by an undesirable and unworthy class, well known to all hospital authorities, and who would seek to live about among them upon a scanty stock of infirmities.

The trustees regard emergency hospitals for the outlying districts with no greater favor. Of such hospitals, it is believed there are only five in operation in the large cities of the world: three in New York, one connected with the Dreadnought Hospital at Greenwich, England, and one — a private undertaking — on Kingston Street, Boston.

The trustees finally recommend heartily a considerable extension of the present ambulance system, which, as it now exists, is entirely inadequate. There are now only thirteen available ambulances in Boston, in addition to the patrol wagons of the police department.

Each of the five outlying districts should have a special ambulance; and hospital stations, each containing two or three beds and connected with the ambulance, should be placed in each district.

The report also suggests that a member of the admitting board of the Boston City Hospital should visit the station at a fixed hour each day and receive applications for admittance to the hospital. Also that a local relief staff of perhaps two members of the medical profession should be connected with the station by telephone and respond to calls. It may possibly be found also that a skilled house-officer from the City Hospital should be detailed for duty at the station, and eventually it may be found advisable that a regular out-patient department be maintained.

The charge and care of such a station should belong to the Boston City Hospital department, but the regular ambulance work, the trustees think, should be done by police officers, especially detailed for the purpose. The station should also be located near the police station of the district.

It is recommended that one station be established at first for experimental purposes.

In closing, the report suggests that the City Hospital, the Massachusetts General, and the Carney Hospital should have an ambulance service within their emergency jurisdiction. The trustees have long sought, and at last have found, additional stable accommodation, and propose to enlarge forthwith.

The trustees believe that this system would give to Boston a better hospital service than any other city in the country at the least additional cost, and all citizens would share in the benefits alike.

We believe that the recommendations of this report are judicious, and the conclusions of the trustees are substantially correct. The development and perfection of the ambulance system, in connection with a large central general hospital, is undoubtedly the practical key to the problem of municipal hospital requirements for populous cities.

A patient having received first aid, and being once in a good ambulance, it is rarely of great importance whether the distance to be traversed is one mile or two.

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MEDICAL NOTES.

WOMEN AT JOHNS HOPKINS UNIVERSITY. — It is reported that Miss Mary E. Garrett has given the balance of the sum required by the trustees to admit women. In order to complete the required $500,000 Miss Garrett now gives over $300,000 in addition to $50,000, which she previously gave. The fund will be known by her name, and instruction will begin next autumn.

FOREIGN RAGS. — The Treasury Department has issued orders prohibiting the importation of rags from most foreign ports including Paris, Rouen, Havre, Marseilles, Cherbourg, Dunkirk, and Lorient in France, all ports, and places in Russia, Netherlands, Belgium, and from Hamburg and Altona in Germany. Also any other place where cholera may be known to be prevailing, or may hereafter prevail, will be included in the list.

Pasteur's Birthday. — On December 27th, being the seventieth birthday of M. Pasteur, a reception was tendered him at the Academy of Sciences. President Carnot, who was present with the cabinet and diplomatic corps, embraced M. Pasteur amid the wild cheers of the audience. The gold medal of the Academy was given him and addresses were made by several of the members, all of which moved M. Pasteur deeply.

NEW ENGLAND.

Mortality in Boston. — The mortality in Boston for the last week rose to 30.2. The number of deaths was 274, of which 14 died of diphtheria, scarlet fever 4, consumption 29, pneumonia 43. The number of persons over sixty years of age was 53.

A Gift to Dartmouth College. — Dr. Ralph Butterfield, of Kansas City, a graduate of the College in 1839, has bequeathed $180,000 to the College for the purpose of founding a professorship in archæology and kindred subjects and for the erection of a suitable building. The donor acquired his property in business and not by the practice of medicine.

NEW YORK.

Insane Patients at Bellevue Hospital. — During the year from October 1, 1891, to October 1, 1892, there were admitted to the insane wards of Bellevue Hospital 2,000 patients, against 1,950 during the preceding year. This is about the proportions of increase from year to year, and it has at least kept pace with the growth of the city's population.

The Society of Medical Jurisprudence. — The tenth annual banquet of the Society of Medical Jurisprudence and State Medicine was held at the Hoffman House the week before Christmas, and some two hundred physicians and lawyers were present. One of the principal speakers was Dr. Wm. A. Hammond, of Washington, who dwelt on the extreme conservation of the medical profession. In the course of his remarks he spoke of his own strong opposition to execution by electricity when the law providing for this was passed, and said that he now frankly admitted that he had made a mistake, having since become satisfied that that method is very much preferable to hanging.

Spurious Hydrophobia. — A case of what was apparently spurious hydrophobia occurred recently in Jersey city, since the dog by whom the patient was bitten, five weeks previous to the attack, was ascertained not to be suffering from rabies. The man, who was twenty-eight years of age, was taken to the Jersey City Hospital suffering from all the usual symptoms of hydrophobia, and died in great agony on December 20th.

Mortality of Brooklyn. — The annual report of Health Commissioner Griffin, of Brooklyn, shows that during the year ending December 1, 1892, there were recorded 19,683 deaths in the city of Brooklyn. Of these 2,172 were caused by pneumonia, 1,983 by phthisis, 902 by bronchitis, and 1,226 by summer diarrhœa and cholera infantum; 856 deaths are due to violence.

A Memorial to the Employees who died of Typhus. — At a meeting of the Board of Health held December 28th, a resolution was adopted recording its high appreciation of the services of four employees of the department and one member of the Sanitary Police force who died while in the performance of their duties during the outbreak of typhus from last spring. A second resolution provided that a suitable tablet in commeration of their services shall be erected at Riverside Hospital on North Brother Island.

Typhus Fever. — Quite a number of cases of typhus have been discovered during the past week. On December 29th a German baker, with his wife and child, all suffering from the disease, were removed from a tenement house on Division Street to the hospital for contagious diseases on North Brother Island. On the following day no less than six cases of typhus were found, and on Tuesday it was reported that fifty-three had been discovered, all persons who had been inmates of down-town lodging-houses. The Board of Health is naturally watching those houses very closely, and every night a physician of the Department is sent to each of them to make a personal inspection of the lodgers.

Reported Death at One Hundred and Twenty-four Years. — A Polish woman, a native of Wilna, Russia, died December 26th, said to be one hundred and twenty-four years of age. Two years ago at the age of one hundred and twenty-two years, she emigrated to this country with other members of her family. Her grandson, who is almost forty years old, states that the birth record in Wilna will show that she was born in May, 1768. She says that she was married twice, and that her first husband died "nearly a hundred years ago."

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Miscellany.

CHEAP STATISTICS FROM MASSACHUSETTS.[1]

When a person who knows nothing about vital statistics, or the various purposes for which they are used, is placed in charge of the compilation of such data for a State, one would suppose that he would, before going very far with the work, begin to realize his own ignorance and study with respectful attention the method of his predecessors This, however, does not seem to have been the case with the editor of the Fiftieth Report of Births, Marriages, and Deaths in the Commonwealth of Massachusetts for the year 1891, recently issued.

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[1] The Engineering Record.

He explains that he does not give in this report the elaborate tables of ratio given in previous reports, because such data "are, if to any one, of value only to the statistician who might well himself devote the time and labor necessary to ascertaining the facts desired." He will not use "uncertain data, such, for instance, as an estimated population" — no — this reformer thinks it better to use data which every one will admit are certainly wrong, being the population reported by the census for a different year. He says that his reduction of the size and expense of the report is radical, and it remains to be seen whether the idea "commends itself to the good sense of the people of the Commonwealth." Of one thing we are certain, and that is that this report as compared with the long series of valuable and instructive registration reports which have been issued by the State of Massachusetts is disappointing and unsatisfactory to those who study and use such documents, and is discreditable not only to its editor but to the Secretary of State who has employed him. For a number of years these registration reports have been edited under the direction of the State Board of Health, and have steadily increased in interest and value, both as educational documents for the people of the State, and as the most reliable and useful works for the use of students of vital statistics which this country produced. The contrast between this "cheap" report and the previous one as to fulness, interest and practical value is very great; the "cheapness" has been attained by not doing the work, and we do not believe that this kind of cheapness will be approved by any one who is competent to judge of the merits of the case.

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THE NEW YORK QUARANTINE.

In a letter sent in reply to a communication received by him from the managers of the steamship lines in reference to his conduct of quarantine during the recent cholera visitation, Health Officer Jenkins has taken occasion to defend the course pursued by him from the reflections contained in the report of the Quarantine Committee of the Chamber of Commerce, with its accompanying report of the advisory committee of physicians. In the course of it, he says: "It is manifest to them (his critics), that a great triumph has been achieved, under circumstances the most trying, in the face of a threatened invasion of unprecedented force, and with resources not intended to cope with so serious an emergency. They recognize the fact that this was done at a sacrifice of public convenience and individual comfort which bore but very slight proportion to the magnitude of the danger to be averted, and they are aware that without diligent, faithful and intelligent services somewhere it could not have been done at all." After acknowledging the efficient co-operation of the city authorities of New York, he goes on to say: "I venture to say that any system of quarantine supervision which should tend to interfere with this concert of action between the State and municipal authorities most directly intended in warding off the attacks of infectious disease, would not only be contrary to the spirit of our institutions, but detrimental to public safety."

At a meeting of the Chamber of Commerce held December 20th, the report of the committee on Quarantine was unanimously adopted, after a number of prominent members had spoken in favor of a national quarantine.

It is announced from Albany that the State Board of Commissioners of Quarantine has decided to recommend to the legislature the improvement and enlargement of Hoffman Island for the accommodation of a larger number of steerage passengers, and also to provide a suitable place for the reception of cabin passengers who may be detained in New York Bay on account of the presence of infectious diseases on incoming steamers. For the latter class the commissoners propose either to build a ship capable of accommodating five hundred passengers or to fit up a new station south of the present quarantine islands. It is probable that the use of Fire Island as a quarantine station will be discontinued and the island sold, for the reason that the laws of the State expressly prohibit the use of any part of Long Island for quarantine purposes.

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THE TREATMENT OF CHOLERA IN HAMBURG.

During the recent epidemic of cholera in Hamburg an opportunity was given to test the large number of drugs which had been recommended in different places by different authors. In some cases special wards or buildings received patients who were treated by some method from which great gain was expected. None of these proved to have been of any great service. Among the internal remedies may be mentioned opium, camphor, salol, creolin, naphthol, arseniate of copper, caffein and calomel. As in other epidemics, the mortality was at first very high, but later fell.

At a recent meeting of the Society for Clinical Medicine in Berlin, Dr. Heyse describes the results of different therapeutical measures during the recent epidemic in Hamburg. When he first arrived in the city there was an impression that all special means of treatment had failed in severe cases. By far the greatest benefit was obtained by the infusion of warm saline solutions; the quantity injected generally amounted to from one and a half to two litres. Hypodermic infusion introduced a certain quality of fluid into the system; the intravenous did the same, with the addition of warmth which passed directly to the heart and produced vigorous and permanent stimulus. As an immediate result the heart sounds became much more audible, cyanosis disappeared, the respiration became calm, and the pulse slow and strong; the painful cramps in the legs also speedily disappeared. The improvement usually lasted from three to five hours, occasionally only an hour and a half. Usually three infusions a day were sufficient. A hot bath of ten or twelve minutes was very grateful to the patient, and raised the temperature at least one degree. The infusions were commonly given only in the early days of the illness; they were considered sometimes dangerous in the typhoid stage. Opium apparently did no good and often harm. The only drug which proved of use was calomel given in doses up to seven and a half grains. Washing out the stomach and tannin enteroclysis were useful as symptomatic remedies in croupous diarrhœa and tenesmus. Washing out the stomach might be dangerous both to the patient and to those attending him if a tube was used.

A separate ward was assigned to Professor Hueppe, of Prague, in order that he might try a method of curing cholera which had not been made public. As after a few days it became evident that the method was not working very well, no more cases were assigned to him; and so it happened that in time all his patients were dead, and no one was left to tell the world of what his method consisted.

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CONTAGIOUS DISEASES AND BURIAL IN CHINA.

A correspondent sends the following with a request for publication, which the Journal gives without assuming any responsibility:

A Boston lady now in Shanghai wrote home, that riding out one day, "we passed a cemetery where the coffins were out in the field, each in a little clay and tile house. We noticed that many of the graves or tombs were covered with straw, bound down upon them, and were told that this was always done, if the one left there had died of a contagious disease such as cholera or small pox."

Having written home this, and having been asked for further explanation of the practice, this lady wrote again:

"Chung King (which you asked about) is *practically* as far from us as from you. It is up the Yangtse Kiang two or three thousand miles, up above the rapids. It takes a person six or seven weeks to get there, the way is so difficult. Just now, small-pox is plenty here in Shanghai, and there is always more or less cholera, but no one thinks of it at all. You go about just as at home. I haven't the least fear.

"You may know, but it was new to me, that here the people drop their coffins anywhere in the fields, by the side of the road in groups or singly. Sometimes they build a little brick tomb over them, sometimes pile loose bricks, tiles or stone, sometimes earth, and sometimes nothing at all; but it is the custom when the death has been from cholera, small pox, or other extremely contagious or infectious disease, to cover the coffin simply with *straw*, and we have seen a good many of them with fresh straw lately. I suppose it is small-pox. So when we see one near the road, we close the carriage window as we pass, and then don't think of it again. At home I should be frightened; here, as no one else is, I am not. That bears out ——'s theory about the foolishness of placarding houses where scarlet fever, etc., is inside, and frightening people; but all say here with proper care, cleanliness, etc., and not coming in actual contact with the disease, there is no danger."

Many years ago, when cholera first began to alarm Americans, Boston's then most eminent physician, said: "Let it remain with us three years, and it will attract no more attention than consumption, which is, in fact, the more fatal disease."

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THERAPEUTIC NOTES.

Mistura Glycyrrhizæ Composita. — Stephen[1] recommends the following method of making this mixture, which affords no sediment whatever.

℞	Acaciæ pulv.	℥ss.
	Ext. glycyrrhizæ pulv.	℥ss.
	Sacchari pulv.	℥ss.
	Spts. æth. nit.	℥ss.
	Vin. antimonii	ʒi.
	Tr. opii camph.	℥ii.
	Aquæ dest.	℥xii.

Having mixed well the powders, add six fluid ounces of water gradually and rub to a paste. Place this in an evaporating dish and heat until perfectly fluid. Add the sweet spirit of nitre, wine of antimony and paregoric and enough water to make the required amount.

Formulæ for the Administration of the Salts of Strontium.[2] — A note in the *Revue de Thérapeutique Medico-Chirurgicale* for August 1, 1892, states that the bromide and iodide of strontium are prescribed in the same manner as are similar salts of sodium, with the difference that they must be given in larger doses, — namely, from two to four drachms a day; doses which in the case of the potassium salt would produce too much gastric intolerance. The following prescriptions are given for the use of the bromide of strontium:

℞	Syrup of [illegible]	[illegible]
	Syrup of bitter orange	[illegible]
	Powdered bromide of strontium	[illegible] M.

A teaspoonful to be taken at a dose.

A solution of the iodide of strontium may be given in the following manner:

℞	Distilled water	[illegible]
	Iodide of strontium	[illegible] M.

A dessertspoonful at a dose.

Lactate of strontium is administered in the dose of 90 to 120 grains a day, and the nitrate is prescribed in cases of articular rheumatism.

The following prescription is given for the lactate of strontium:

℞	Pure lactate of strontium	[illegible]
	Distilled water	[illegible] M.

Dessertspoonful at a dose.

The dose of the nitrate of strontium is six drachms or more a day.

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RESOLUTIONS ON THE DEATH OF SISTER MARIA.

At a meeting of the the Staff of the Boston Children's Hospital held December 26, 1892, it was voted to transmit to the Mother Superior of the Sisters of St. Margaret the following resolution:

That in the death of Sister Maria the Children's Hospital has sustained a great loss. Her career of usefulness which had just begun has been cut short. Her zealous kindly efforts in conducting the affairs of the Hospital were appreciated by all who came in contact with her. Her loving fidelity to duty, and her tender care of children made her beloved by them one and all. To the Sisters of St. Margaret the members of the Staff extend their heartfelt sympathy, and join with them in deploring the removal of one so well fitted to perform the duties assigned her in life.

T. M. Rotch, *Staff Secretary.*

METEOROLOGICAL RECORD,

For the week ending December 24, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...18	29.97	[illegible]	[illegible]	23	[illegible]	[illegible]	[illegible]	N.W.	S.W.	9	[illegible]	C.	O.	
M..19	29.85	[illegible]	44	[illegible]	71	74	72	S.W.	S.W.	12	11	O.	O.	
[illegible]	[illegible]	27	[illegible]	20	[illegible]	[illegible]	[illegible]	W.	N.W.	[illegible]	14	N.	[illegible]	[illegible]
W..21	30.18	[illegible]	[illegible]	14	[illegible]	[illegible]	[illegible]	W.	W.	[illegible]	16	F.	C.	
T..22	30.06	[illegible]	[illegible]	[illegible]	[illegible]	43	52	W.	W.	[illegible]	[illegible]	[illegible]	[illegible]	
F..23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	W.	[illegible]	[illegible]	F.	C.	
S..24	29.58	[illegible]	13	0	94	52	73	N.W.	N.W.	[illegible]	24	N.	C.	
[illegible]	29.90	[illegible]	30	[illegible]	[illegible]	57	64							[illegible]

* [illegible] Mean for week.

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[1] American Journal of Pharmacy, November.

[2] Therapeutic Gazette, November.

RECORD OF MORTALITY

For the Week ending Saturday, December 24, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	[illegible]	[illegible]	[illegible]	14.84	[illegible]	.98	6.58	1.40
Chicago	[illegible]	434	[illegible]	[illegible]	18.63	2.53	[illegible]	[illegible]
Philadelphia	[illegible]	—	—	—	—	—	—	—
Brooklyn	[illegible]	[illegible]	117	14.50	24.07	1.45	8.12	1.16
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	211	76	11.75	21.62	1.41	6.58	[illegible]
Baltimore	[illegible]	—	—	—				
Cincinnati	[illegible]	[illegible]	32	11.57	16.02	5.34	[illegible]	1.78
Cleveland	[illegible]	83	34	14.40	19.20	1.20	10.80	2.40
Pittsburg	[illegible]	111	46	[illegible]	21.62	4.50	12.61	5.40
Milwaukee	[illegible]	65	37	18.48	20.02	—	9.24	1.54
Washington	[illegible]	100	31	15.00	11.00	4.00	6.00	—
Nashville	87,754	[illegible]	5	12.00	8.00			—
Charleston	[illegible]	29	5	13.80	10.35	3.45	—	—
Portland	40,000	12	1	16.66	8.33	—	—	—
Worcester	92,313	[illegible]	11	[illegible]	6.46	3.23	3.23	—
Lowell	[illegible]	[illegible]	11	[illegible]	17.04	[illegible]	4.26	—
Fall River	[illegible]	[illegible]	10	-	24.12	—		—
Cambridge	74,644	24	8	20.80	29.12	4.16	8.32	4.16
Lynn	60,809	14		35.70	7.14	—	—	14.28
Springfield	[illegible]	—	—	—	—	—	—	—
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	44,947	22	7	13.65	4.55	4.55	4.55	—
Holyoke	[illegible]	—	—	—	—	—	—	—
Brockton	32,782	5	0	—	—	—	—	—
Salem	31,495	7	—	14.28	—	14.28	—	—
Haverhill	30,065	10	0	10.00	10.00	10.00	—	—
Chelsea	29,479	10	2	10.00	10.00	10.00	—	—
Malden	29,479	11	1	—	18.18	—	—	—
Newton	26,498	—	—	—		—	—	—
Taunton	[illegible]	8	1	12.50	50.00	12.50	—	—
Gloucester	26,008	7	2	14.28	—	—	—	—
Fitchburg	25,444	7	3	14.28	—	—	—	—
Waltham	[illegible]	6	1	16.66	50.00	—	—	16.66
Quincy	18,669	1	1	—	—	—	—	—
Pittsfield	18,294	4	—	50.00	25.00	25.00	25.00	—
Northampton	[illegible]	2	0	50.00	—	—	—	50.00
Everett	14,745	6	0	16.66	—	—	—	16.66
Newburyport	14,031	5	0	20.00	20.00	20.00	—	—
Amesbury	13,561	2	1	—	50.00	—	—	—

Deaths reported 2,500: under five years of age 868; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 394, acute lung diseases 472, consumption 294, diphtheria and croup 186, typhoid fever 55, scarlet fever 44, diarrhœal diseases 38, measles 24, whooping-cough 14, cerebro-spinal meningitis 13, erysipelas 12, malarial fever 5, typhus fever 1.

From diarrhœal diseases New York 20, Brooklyn and Milwaukee 5 each, Chicago 3, Nashville 2, Boston, Washington and Lowell 1 each. From measles Chicago 13, New York 8, Brooklyn, Portland and Lowell 1 each. From whooping-cough New York and Brooklyn 5 each, Chicago 3, Boston 1. From cerebro-spinal meningitis New York, Washington, Lynn and Somerville 2 each, Chicago, Nashville, Worcester, Cambridge and Gloucester 1 each. From erysipelas New York 4, Washington 2, Chicago, Brooklyn, Charleston, Portland and Fitchburg 1 each. From malarial fever New York and Charleston 2 each, Brooklyn 1. From typhus fever New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 24, 1892, TO DECEMBER 30, 1892.

The leave of absence granted **Captain Louis W. Crampton**, assistant surgeon, U. S. A., is extended three months.

By direction of the Secretary of War, two months' ordinary leave of absence is granted **Captain Marcus E. Taylor**, assistant surgeon, U. S. A., to take effect upon the expiration of his present sick leave.

First-Lieut. James D. Glennan, assistant surgeon, U. S. A., will, upon his arrival at his station (Fort Sill, Oklahoma Territory), from leave of absence, proceed immediately to San Antonio, Texas, and report in person to the commanding general, Department of Texas, for temporary duty in the field with troops operating on the Mexican border.

The leave of absence for seven days granted **First-Lieut. Frank T. Meriwether**, assistant surgeon, U. S. A., is hereby extended ten days.

First-Lieut. Benjamin L. Ten Eyck, assistant surgeon, U. S. A., is relieved from duty at Fort Leavenworth, Kansas, and will proceed at once to San Antonio, Texas, and report to the commanding general, Department of Texas, for duty with the troops now in the field.

THIRD CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS. — ELECTION OF OFFICERS.

The first meeting of the Executive Committee of the Third Congress of American Physicians and Surgeons was held December 27th, in Philadelphia. The committee was organized by the election of Dr. William Pepper as Chairman and Dr. Newton M. Shaffer as Secretary.

The following officers of the Congress were elected: Dr. A. L. Loomis, of New York, President; Dr. W. H. Carmalt, of New Haven, Secretary; Dr. John Shaw Billings, of Washington, Treasurer, and Dr. S. C. Busey, of Washington, Chairman of Committee of Arrangements. It was decided to hold the next meeting in Washington, in May, 1894.

Newton M. Shaffer, M.D., *Secretary*.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — The annual meeting of the Society will be held on Monday, January 9, 1893, at the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

Dr. W. W. Gannett: "Cases of Heat-stroke Observed in the Summer of 1892."

Dr. W. N. Bullard: "Remarks on Congenital Athetosis."

Election of officers.

George G. Sears, M.D., *Secretary*.

RECENT DEATHS.

H. B. Harvey, surgeon, U. S. Navy, died at Crawford, Miss., December 26th. He was appointed assistant surgeon in 1872, passed assistant surgeon in 1876 and surgeon in 1886. He was a native of Kentucky.

George W. Sargent, M.D., M.M.S.S., of Lawrence, died January 1st, aged fifty-eight years. He graduated from the Albany Medical College in 1857. During the war he served as surgeon of the Sixth Massachusetts Regiment, and since the war has practised in Lawrence, and served on the board of pension examiners.

BOOKS AND PAMPHLETS RECEIVED.

Notes on the Discovery of Chloroform. By Oliver P. Hubbard. Reprint. 1892.

Columbia Daily Calendar, 1893. Pope Manufacturing Co., Boston, New York, Chicago.

Multiple Benign Cystic Epithelioma of the Skin. By J. A. Fordyce, M.D., New York. Reprint. 1892.

The Modern Antipyretics, Their Action in Health and Disease. By Isaac Ott, M.D. Second edition. Easton, Pa. 1892.

Typhoid Fever in the Light of Modern Research. Facts and Doubts about Cholera. By L. Bremer, M.D., St. Louis, Mo.

Microscopical Researches of the Corpuscular Elements of Blood. By M. L. Holbrook, M.D., New York City. Reprint. 1892

The Collegiate Degree as an Evidence of Fitness for the Study of Medicine. By L. Harrison Mettler, A.M., M.D., Chicago, Ill. Reprint. 1892.

Fermentation, Infection and Immunity: A New Theory of These Processes. By J. W. McLaughlin, M.D. Austin, Texas: Eugene von Bœckmann. 1892.

Why Hygienic Congresses Fail. Lessons taught by the International Congress of 1891. By Dr. Elizabeth Blackwell. London: George Bell & Sons. 1892.

A Manual of Clinical Ophthalmology. By Howard F. Hansall, M.D., Lecturer on Ophthalmology in the Jefferson Medical College, etc., and James H. Bell, M.D. Philadelphia: P. Blakiston, Son & Co. 1892.

Etudes de Clinique Chirurgicale, Année 1890–91. Par A. Le Dentu, Professeur de Clinique Chirurgicale a la Faculté de Médecine de Paris. Paris: G. Masson, Editeur.

Report of a Case of Large Intra-Cranial Tumor (Weight, Five Ounces) Compressing the Left Frontal Lobe. By William H. Morrison, M.D., of Holmesburg, Pa. Reprint. 1892.

An Inquiry into the Relative Merits of Vaginal Hysterectomy and High Amputation or Partial Extirpation by Galvano-cautery in Cancer of the Cervix Uteri. By John Byrne, M.D., M.R.C.S.E. Reprint. 1892.

Surgical *versus* Educational Methods for the Improvement of the Mental Condition of the Feeble-minded. Criminal Responsibility in the Early Stages of General Paralysis. By Frank P. Norbury, M.D., Jacksonville, Ill. Reprints. 1892.

Original Articles.

PROTECTIVE INOCULATIONS IN INFECTIOUS DISEASES.[1]

BY GEO. M. STERNBERG, M.D.,
Deputy Surgeon-General, U. S. [illegible]
[illegible]

No subject connected with the prevention of infectious diseases is of more importance, from a practical point of view, than that which was assigned to this committee at the Memphis meeting (1887) of the American Public Health Association; and the delay in submitting a report has not been due to a failure on the part of the committee to recognize the importance of the task assigned to it, but partly to the pressure of other engagements and the magnitude of the subject, and partly to the fact that experimental evidence relating to the subject has been constantly accumulating during the past five years and the fundamental question concerning the explanation of acquired immunity has not been answered in a satisfactory manner until very recently.

Before proceeding to give an account of the results of protective inoculations in the various infectious diseases in which these have been practised, we must consider at some length this question of the rationale of acquired immunity.

It has long been known that, in a considerable number of infectious diseases, a single attack, however mild, affords protection against subsequent attacks of the same disease; that in some cases this protection appears to be permanent, lasting during the life of the individual; that in others it is more or less temporary, as shown by the occurrence of a subsequent attack.

The protection afforded by a single attack not only differs in different diseases, but in the same disease varies greatly in different individuals. Thus certain individuals have been known to suffer several attacks of small-pox or of scarlet fever, although, as a rule, a single attack is protective. Exceptional susceptibility or insusceptibility may be not only an individual but a family characteristic, or it may belong to a particular race. A remarkable example of race immunity is that of Algerian sheep against anthrax, a disease which is very fatal to other sheep. Individual susceptibility also depends to a considerable extent upon the age of the individual. Young animals are more susceptible to infection than older ones. This is illustrated in the so-called "children's diseases" of man, and in the diminished susceptibility to tubercular consumption after forty years of age. It is also well established by experiments upon the lower animals, the young being susceptible to infection by "attenuated cultures" of pathogenic bacteria which older animals of the same species are able to resist.

In those diseases in which second attacks are not infrequent, as, for example, in pneumonia, in influenza or in Asiatic cholera, it is difficult to judge from clinical experience whether a first attack exerts any protective influence. But from experiments upon the lower animals we are led to believe that a certain degree of immunity, lasting for a longer or shorter time, is afforded by an attack of pneumonia or of cholera, and probably of all infectious diseases due to bacterial parasites. In the malarial fevers, which are due to a parasite of a different class, one attack affords no protection, but rather predisposes to a subsequent attack.

The experimental evidence relating to protective inoculations in infectious diseases dates from the discovery by Jenner (1768) of the protection afforded against small-pox by vaccination with lymph taken from the vesicles of cow-pox.

In the present report we shall omit any further reference to vaccination, hoping that some other member of the committee may hereafter give such a detailed account of this particular application of protective inoculations as the practical importance of the subject demands.

To Pasteur must be accorded the credit of having first shown by the experimental method that animals may be made immune against other infectious diseases than the one mentioned by inoculations with an "attenuated virus." Commencing with his experiments upon chicken cholera, in 1880, we shall briefly trace the development of our knowledge up to the present date.

Having demonstrated that the disease of fowls known as chicken cholera is due to a specific microörganism, which he was able to cultivate in artificial media, Pasteur discovered that his cultures became "attenuated" as to their pathogenic power, when they had been kept for some time in the laboratory, and that fowls inoculated with these attenuated cultures suffered a comparatively mild and non-fatal attack of the disease, and were subsequently immune against the pathogenic action of the most virulent cultures, or against contracting the disease by contact with other fowls suffering from it.

Pasteur at once comprehended the importance of this discovery, and inferred that what was true of one infectious germ disease was likely to be true of others. Subsequent researches, by this *savant* and by other bacteriologists, have justified this anticipation; and the experimental demonstration has been made in a considerable number of similar diseases.

Pasteur first obtained an attenuated virus for his protective inoculations against chicken cholera by keeping his cultures for a considerable time freely exposed to the air, and ascribed the attenuation to the action of atmospheric oxygen. He found that when cultures were made from the blood of fowls which died from a chronic form of the disease, they possessed an exceptional virulence, which was not lost when the cultures were renewed at short intervals, but that by keeping these cultures for two months the virulence was greatly diminished, and fowls usually recovered when inoculated with such cultures. When kept still longer, his cultures finally lost all pathogenic power. In subsequent experiments with the bacillus of anthrax, Pasteur found that the spores of this bacillus retain their virulence for years, and that it was necessary to exclude them from cultures which were to serve for protective inoculations. When cultivated at a temperature of 42° to 43° C., this bacillus does not form spores; and Pasteur ascertained that cultures kept at this temperature for eight days no longer killed susceptible animals, and could be used in his protective inoculations.

Other methods of attenuating the virulence of pathogenic bacteria have since been discovered. Thus, Toussaint has shown that exposure for a short time to a temperature a little below that which destroys the vitality of the pathogenic microörganism modifies the virulence of a culture so that it may serve for protective inoculations. In the case of bacillus anthracis, Chauveau has shown that a temperature of 50° C., maintained for eighteen minutes, answers the purpose.

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[1] Preliminary report of the Committee of the American Public Health Association.

Attenuation of virulence may also be effected by exposure to certain antiseptic agents. This was first ascertained by the writer in experiments made in 1881, the object of which was to determine the comparative value of various disinfecting agents. Incidentally the fact was brought out that agents which do not completely destroy the vitality of a pathogenic microörganism may cause an attenuation of its pathogenic virulence. In the experiments referred to, the blood of a rabbit recently dead from a form of septicæmia induced by the subcutaneous injection of my own saliva, and due to the presence of a micrococcus (micrococcus pneumoniæ crouposæ), was subjected to the action of various chemical agents, and subsequently injected into a rabbit to test the destruction of virulence. In the published report of these experiments the following statement is made:

"The most important source of error, however, and one which must be kept in view in future experiments, is the fact that a protective influence has been shown to result from the injection of virus, the virulence of which has been modified, without being entirely destroyed, by the agent used as a disinfectant."

"Sodium hyposulphite and alcohol were the chemical reagents which produced the result noted in these experiments; but it seems probable that a variety of antiseptic substances will be found to be equally effective when used in proper proportion. Subsequent experiments have shown that neither of these agents is capable of destroying the vitality of the septic micrococcus in the proportion used (one per cent. of sodium hyposulphite, or one part of ninety-five per cent. alcohol to three parts of virus), and that both have a restraining influence upon the development of this organism in culture fluids."

Similar results have since been reported by European bacteriologists. Thus Chamberlain and Roux (1883) ascertained that the anthrax bacillus could be attenuated by adding to cultures certain antiseptic agents — carbolic acid, 1 to 800; bichromate of potash, 1 to 100.

Another method of attenuating the virus of a pathogenic microörganism is that recently (1892) discovered by Brieger, Kitasato, and Wassermann. This consists in the cultivation of pathogenic bacteria in a bouillon made from the thymus gland of a calf. It was found that the tetanus bacillus cultivated in this bouillon did not form spores, and had comparatively little virulence. Mice or rabbits inoculated with it in small doses — 0.001 to 0.2 cubic centimetre for a mouse — proved to be subsequently immune. And the blood serum of an immune rabbit injected into the peritoneal cavity of a mouse — 0.1 to 0.5 cubic centimetre — was found to give it immunity from the pathogenic action of a virulent culture of the tetanus bacillus. Similar results were obtained with several other pathogenic bacteria cultivated in the thymus bouillon—spirillum of cholera, bacillus of diphtheria, typhoid bacillus.

It has also been shown, by the Japanese investigators Ogata and Jashuara, that the anthrax bacillus, when cultivated in the blood of an immune animal (rat, dog, or frog), becomes attenuated as to its pathogenic power, and that such cultures injected into a susceptible animal give rise to a mild attack followed by immunity. Moreover, the injection of a small amount — one drop — of blood from a frog or a dog into a mouse, made before or after inoculating it with a virulent culture of the anthrax bacillus, was found to protect the animal from a fatal attack, and, after its recovery from the mild attack resulting from the injection, it proved to be immune. The protective influence was exercised when the blood was injected as long as seventy-two hours before the inoculation, or five hours after, and it was not lost when the blood was kept for weeks in a cool place. But subjecting it to a temperature of 45° C., for an hour, completely destroyed its power to protect inoculated mice from a fatal attack of anthrax.

Attenuation of virulence may also be effected by cultivating the anthrax bacillus in the body of a non-susceptible animal, like the frog (Lubarsch, Petruschky); or in the blood of the rat (Behring); by exposure to sun-light (Arloing); and by compressed air (Chauveau).

It is a matter of common laboratory experience that many pathogenic bacteria become more or less attenuated when cultivated for a considerable time in artificial media, even when the cultures are renewed at short intervals. This is true of the micrococcus of pneumonia, of streptococcus pyogenes, of the bacillus of diphtheria, of the spirillum of cholera, and to some extent of the tubercle bacillus. Indeed, as a general rule, pathogenic bacteria exhibit greater virulence when cultivated in favorable media and when recently obtained from the body of a susceptible animal; and, on the other hand, pathogenic virulence is diminished by cultivation under unfavorable conditions. Probably similar circumstances produce those differences in the type of epidemic diseases, as to malignancy or comparative mildness, which have been frequently noted; external conditions unfavorable to the development of the specific infectious agent causing an attenuation of virulence and the reverse. As pathogenic virulence depends, to a considerable extent at least, upon the formation of toxic substances during the active development of the pathogenic microörganism we infer that diminished virulence is due to a diminished production of these toxic substances.

An important step was made in the progress of our knowledge in this field of research, when it was shown that animals may be made immune against certain infectious diseases by inoculating them with filtered cultures, containing the toxic substances just referred to, but free from the living bacteria to which they owe their origin. The first satisfactory experimental evidence of this important fact was obtained by Salmon and Smith in 1886. These bacteriologists succeeded in producing an immunity in pigeons against the pathogenic effects of the bacillus of hog cholera, which is very fatal to these birds, by inoculating them with sterilized cultures of the bacillus mentioned. Similar results were reported by Roux, in 1888, from the injection into susceptible animals of sterilized cultures of the anthrax bacillus, and also of the bacillus of symtomatic anthrax. More recently (1890) Behring and Kitasato have shown that animals may be made immune against the pathogenic action of the bacillus of tetanus or the bacillus of diphtheria, by the injection of filtered, germ-free cultures of these bacilli. Similar results have been obtained by G. and F. Klemperer (1891), in experiments upon rabbits, with filtered cultures of the micrococcus of croupous pneumonia.

In Pasteur's protective inoculations against hydrophobia it is probable that the immunity, which is developed after infection by the bite of a rabid animal, is due to the toxine (toxalbumin ?) of this disease present in the emulsion of spinal cord which is used in these inoculations.

There is also some evidence to show that a certain degree of immunity against tuberculosis may be produced in guinea-pigs by injections of the toxic substances developed during the growth of the tubercle bacillus — Koch's tuberculin.

Evidently the facts stated have an important bearing upon the rationale of acquired immunity, and they appear to support the explanation offered by the writer in a paper published in the *American Journal of the Medical Sciences* in 1881, namely, that immunity depends upon an acquired tolerance to the toxic products of pathogenic bacteria. In the paper referred to I say:

"The view that I am endeavoring to elucidate is that, during a non-fatal attack of one of the specific diseases, the cellular elements implicated, which do not succumb to the destructive influence of the poison, acquire a tolerance to this poison which is transmissible to their progeny, and which is the reason of the exemption which the individual enjoys from future attacks of the same disease."

In my chapter on "Bacteria in Infectious Diseases," in "Bacteria," published in the spring of 1884, but placed in the hands of the publishers in 1883, I say:

"It may be that the true explanation of the immunity afforded by a mild attack of an infectious germ disease is to be found in an acquired tolerance to the action of a chemical poison produced by the microörganism, and consequent ability to bring the resources of nature to bear to restrict invasion by the parasite." In the same chapter the resources of nature supposed to be brought to bear in restricting invasion by the parasite are referred to as follows:

"If we add a small quantity of a culture fluid containing the bacteria of putrefaction to the blood of an animal withdrawn from the circulation into a proper receptacle and maintained in a culture-oven at blood heat, we will find that these bacteria multiply abundantly, and evidence of putrefactive decomposition will soon be perceived. But if we inject a like quantity of the culture fluid with its contained bacteria into the circulation of a living animal, not only does no increase and no putrefactive change occur, but the bacteria introduced quickly disappear, and at the end of an hour or two the most careful microscopical examination will not reveal the presence of a single bacterium. This difference we ascribe to the vital properties of the fluid as contained in the vessels of a living animal, and it seems probable that the little masses of protoplasm known as white blood corpuscles are the essential histological elements of the blood, so far as any manifestation of vitality is concerned. *The writer has elsewhere* (1881) *suggested that the disappearance of the bacteria from the circulation, in the experiment referred to, may be effected by the white corpuscles* which, it is well known, pick up, after the manner of amœbæ any particles, organic or inorganic, which come in their way. And it requires no great stretch of credulity to believe *that they may, like an amœba, digest and assimilate the protoplasm of the captured bacterium, thus putting an end to the possibility of its doing any harm.*

"In the case of a pathogenic organism we may imagine that, when captured in this way, it may share a like fate if the captor is not paralyzed by some potent poison evolved by it, or overwhelmed by its superior vigor and rapid multiplication. In the latter case the active career of our conservative white corpuscle would be quickly terminated and its protoplasm would serve as food for the enemy. It is evident that in a contest of this kind the balance of power would depend upon circumstances relating to the *inherited* vital characteristics of the invading parasite and of the invaded leucocyte."

This explanation is now very commonly spoken of as the "Metschnikoff theory," although as a matter of fact it was clearly stated by the writer several years (1881) before Metchnikoff's first paper (1884) was published. Metchnikoff has, however, been the principal defender of this explanation of acquired immunity, and has advanced considerable experimental evidence in its favor. We cannot at present attempt to review the evidence for and against this theory, but may say, in brief, that in view of experimental evidence shortly to be referred to, we are not prepared to accept it as a sufficient explanation of acquired immunity. We believe, however, that "phagycytosis" constitutes one of the factors upon which immunity depends and plays an important part in enabling immune animals to resist invasion by pathogenic bacteria.

But recent researches indicate that the principal factor in the production of acquired immunity is the presence in the blood of the immune animal of some substance capable of neutralizing the toxic products of the particular pathogenic microörganism against which immunity exists. Or, in certain cases, in the germicidal action of some substance present in the blood and tissue juices of the immune animal.

These "defensive proteids" in the bodies of immune animals are called *alexines* by Buchner and *phylaxines* by Hankin.

In the nomenclature proposed by Hankin a defensive proteid produced in the body of an animal which has an acquired immunity for a given infectious disease, and which acts by destroying the pathogenic bacteria to which the disease is due, is called a *mycophylaxin;* and a defensive proteid produced in the body of an animal which has an acquired immunity, which acts by neutralizing the toxic products of the pathogenic bacteria to which the disease is due, is called a *toxophylaxin.*

Our knowledge of these defensive proteids has been acquired during the past two or three years, and dates from the discovery by Nuttall (1888) that the recently drawn blood of certain animals possesses decided germicidal properties. Buchner has shown that this property belongs to the blood serum and not to its cellular elements. This germicidal power varies greatly for different species of bacteria, being more pronounced in the case of some pathogenic bacteria than for others, and absent in the case of some of the common saprophytes tested. The germicidal power of fresh blood serum is destroyed by a comparatively low temperature, and by keeping the serum for a considerable time, but it is not neutralized by freezing. Behring has shown that the blood of different animals varies considerably as to its germicidal power. Thus the blood of the rat and of the frog is especially fatal to the anthrax bacillus and the natural immunity of these animals against anthrax is probably explained by this fact. The substance to which this germicidal action is due appears to be destroyed in exercising its destructive action, for a given quantity of serum will only destroy a limited number of bacteria, and when these are present in excess they develop abundantly in the blood serum, which in the absence of the defensive proteid constitutes an excellent culture medium.

Hankin (1891) has isolated from the spleen and blood serum of rats a globulin, possessing germicidal properties, to which he ascribes the power of rats' blood to destroy anthrax bacilli. This globulin is insoluble in water or in alcohol and does not dialyze. In this connection we may state that other animal fluids have been shown to possess some germicidal power. This has been shown to be true of aqueous humor, of lymph from the dorsal lymph sac of the frog, of the fluid of ascities, and even of milk and of urine.

Reference has already been made to the experiments of Ogata and Jashuara which show that the anthrax bacillus becomes attenuated as to its pathogenic virulence when cultivated in the blood of an immune animal such as the frog or the rat, and the similar results more recently by Brieger, Kitasato and Wassermann, in cultivating pathogenic bacteria in a thymus bouillon. Now this attenuation appears to be due to a destruction of the toxic products of the pathogenic bacteria by anti-toxines present in the culture liquids. That such destruction may occur in certain cases at least is proved by recent experiments made in Germany and Italy.

Behring and Kitasato in their experiments upon tetanus and diphtheria have shown that the blood of an immune animal when added to a virulent culture of one or the other of these bacilli, neutralizes the pathogenic power of such cultures, as shown by inoculation into susceptible animals. And, also, that cultures from which the bacilli have been removed by filtration and which kill susceptible animals in very small amounts, have their toxic potency destroyed by adding to them the blood of an immune animal, which is thus directly proved to contain an antitoxine, which comparative experiments show not to be present in the blood of non-immune animals. But in the experiments of Behring and Kitasato referred to, it was found that five cubic centimetres of serum from the blood of an immune rabbit mixed with one cubic centimetre of a virulent filtrate of the tetanus bacillus and allowed to stand for twenty-four hours completely neutralized its toxic power, as shown by inoculations in mice; 0.2 cubic centimetre of this mixture injected into a mouse was without effect, while 0.0001 cubic centimetre of the filtrate without such admixture was infallibly fatal to mice. The mice inoculated with this mixture remained immune for forty or fifty days, after which they gradually lost their immunity. The blood or serum from an immune rabbit, when preserved in a dark, cool place, retained its power of neutralizing the tetanus toxalbumin for about a week, after which time it gradually lost this power. Behring and Kitasato have also shown that the serum of a diphtheria-immune rabbit destroys the potent toxalbumin in diphtheria cultures. It does not, however, possess any germicidal power against the diphtheria bacillus.

The Italian investigators, Tizzoni and Cattani, have obtained similar results and have isolated from the blood of immune animals an albuminous substance which they believe to be the tetanus antitoxine and which has been successfully used in the treatment of a number of cases of tetanus in man.

G. and F. Klemperer have recently (1891) published an important memoir in which they give an account of their researches relating to the question of immunity, etc., in animals subject to the form of septicæmia produced by the micrococcus pneumoniæ crouposæ. They were able to produce immunity in susceptible animals by introducing into their bodies filtered cultures of this micrococcus, and proved by experiment that this immunity had a duration of at least six months. They arrive at the conclusion that the immunity induced by injecting filtered cultures is not directly due to the toxic substances present in these cultures, but that they cause the production in the tissues of an antitoxine which has the power of neutralizing their pathogenic action. The toxic substance present in cultures of the "diplococcus of pneumonia" they call *pneumotoxine;* the substance produced in the body of an artifically immune animal, by which this pneumotoxine is destroyed if subsequently introduced, they call *anti-pneumotoxine.*

In the experiments heretofore referred to the destruction of the virulence of cultures by adding to them the blood of an immune animal has been shown to be due to the presence of an antitoxine. But we have also experimental evidence that immunity may depend upon the destruction of the pathogenic microörganism in the blood of an immune animal. In guinea-pigs which have an acquired immunity against vibrio Metschnikovi the blood serum has been proved to possess decided germicidal power for this "vibrio," while it multiplies readily in the blood serum of non-immune guinea-pigs (Behring and Nissen).

The writer has recently (May, 1892) obtained experimental evidence that the blood of vaccinated, and consequently immune, calves, contains something which neutralizes the specific virulence of vaccine virus, both bovine and humanized. Four drops of blood serum from a calf which had been vaccinated two weeks previously, mixed with one drop of liquid lymph recently collected in a capillary tube, after contact for one hour was used to vaccinate a calf; the same animal was also vaccinated with lymph preserved on three quills which was mixed with four drops of serum from the immune calf and left for one hour. The result of these vaccinations was entirely negative, while vaccinations upon the same calf made with virus from the same source, and mixed with the same amount of blood serum from a non-immune calf, gave a completely successful and typical result.

The importance of the experimental evidence above referred to in explaining the phenomena of natural and acquired immunity is apparent. The facts stated also suggest a rational explanation of recovery from an attack of an acute infectious disease. But the idea that during such an attack an antidote to the disease poison is developed in the tissues is yet so novel, and the experimental evidence in support of this view is of such recent date that it would be premature to accept this explanation as applying to immunity in general. It seems difficult to believe that an individual who has passed through attacks of measles, mumps, whooping-cough, scarlet-fever, small-pox, etc., has in his blood or tissues a store of the antitoxine of each of these diseases, formed during the attack and retained during the remainder of his life, or continuously produced so long as the immunity lasts. Moreover, in those diseases to which the experimental evidence above recorded relates — diphtheria, tetanus, pneumonia — as they occur in man, no lasting immunity has been shown to result from a single attack, and in this regard they do not come into the same class with the eruptive fevers and other diseases in which a single attack usually protects during the lifetime of the individual.

Still, notwithstanding the considerable number of diseases in which we have as yet no experimental evidence as to the presence of a specific antitoxine in the blood and tissues of immune individuals, it must be admitted that so far as the experimental evidence goes it is in support of the view that acquired immunity depends chiefly upon the presence of defensive proteids in the bodies of immune animals. And, if this is true, the suggestion at once presents itself that we may be able to confer immunity upon susceptible individuals by introducing into their bodies the antitoxine of a specific disease obtained from the blood of other individuals who have an acquired immunity against this disease. That this is possible in the case of certain infectious diseases of the lower animals has already been proved and the experimental evidence has been referred to.

Whether preventive medicine will be able to apply similar methods for the purpose of establishing immunity against the specific infectious diseases of man can only be determined by carefully conducted experiments.

In the case of small-pox the method of Jenner has been so satisfactory in its results and is so simple in its application that we would scarcely expect to substitute for it a method depending upon the direct introduction of an antitoxine, obtained, for example, from the blood of immune calves, even if experiment should show the possibility of establishing immunity in this way.

But in yellow fever and in scarlet fever such a method might possibly be practicable and useful if there were any way of obtaining an antitoxine from the blood of persons who have suffered an attack of the disease, in sufficient quantity to serve the purpose. Already experiments have been made in the therapeutic use of antitoxines in tetanus, and in pneumonia, with a very promising degree of success, and from our present point of view the practical application of the recent discoveries relating to defensive proteids seems to be in this direction rather than in prophylaxis.

In Pasteur's protective inoculations against hydrophobia, in persons bitten by rabid animals, it seems probable that an antitoxine is introduced with the emulsion of spinal cord used in these inoculations, and that the protection afforded depends upon this fact. Or possibly upon the development of an antitoxine in the body of the inoculated individual as a result of the introduction of a considerable quantity of a specific toxalbumin, produced by the hypothetical hydrophobia germ in the nervous tissues of the infected rabbit from which the spinal cord was taken.

Whatever may be the rationale of the immunity resulting from such inoculations, the fact that they have a considerable prophylactic value appears to be well established.

This is shown by the following statistical tables:[2] one showing the results of inoculations made at the Pasteur Institute in Paris during five years, 1886 to 1890; the other, a classified statement showing the results in a single year, 1890:

[illegible]	[illegible]	[illegible]	[illegible]
1886	[illegible]	[illegible]	[illegible]
1887	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
1889	[illegible]	[illegible]	[illegible]
1890	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

In the following table, *A* includes all persons treated who had been bitten by an animal proved to be rabid; *B*, persons bitten by animals examined by veterinary surgeons, and pronounced rabid; *C*, persons bitten by animals suspected of being rabid. The figures relate to the year 1890:

	[illegible]	[illegible]	[illegible]
A	[illegible]	[illegible]	[illegible]
B	[illegible]	[illegible]	[illegible]
C	[illegible]	[illegible]	[illegible]

There has been much scepticism with reference to the value of Pasteur's hydrophobia inoculations notwithstanding the favorable statistics published by the Pasteur Institute in Paris, and by similar institutions in other parts of the world. This has, however, to a considerable extent, given way before the experimental evidence. With reference to this we cannot do better than to quote from a recent report by Dujardin-Beaumetz. In this report the following statistical table is given relating to the number of rabid animals as compared with the number of deaths from hydrophobia in the Department of the Seine, during a period of ten years, 1881 to 1891.

Year.	[illegible]	[illegible]
1881	[illegible]	[illegible]
1882	[illegible]	[illegible]
1883	[illegible]	[illegible]
1884	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
1886	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
1888	[illegible]	[illegible]
1889	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
1891	[illegible]	[illegible]

In commenting upon these statistics Dujardin-Beaumetz calls attention to the fact that the figures show three periods of ascention (1881, 1885 and 1888), in the number of rabid animals, attended with a corresponding increase in the number of deaths from rabies in 1881 and 1885, but not in the years 1886 and 1887, during which the relative number of deaths was considerably less. This is ascribed to the protective inoculations which were commenced in 1886.

If we compare statistics for five years prior to 1886 (1881 to 1885 inclusive), with the five years following (1886 to 1890 inclusive), we find that during the first period there were 57 deaths from hydrophobia in the Department of the Seine and the number of rabid animals reported was 1,882, while during the second period the total number of deaths was 38 and the number of rabid animals was 2,681. That is, during the first period the ratio was one death to 33 rabid animals, and during the second, one death to 70 rabid animals.

According to Dujardin-Beaumetz, the total number of individuals living in the Department of the Seine treated at the Pasteur Institute from January 1, 1887 to December 31, 1891, was 1,224. Of these, 12 died notwithstanding the treatment, giving a mortality of 0.89%.

During the same period, according to the above table, there were 39 deaths from hydrophobia among the residents of the Department of the Seine. We infer therefore that (39–12) 27 persons died during this period who had not submitted themselves to the Pasteur treatment. The mortality among those not treated as compared with the number bitten is stated to have been 15.9% in 1887 and 13.33% in 1888.

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[2] From the Annales de l'Institut Pasteur, [illegible]

(To be continued.)

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THE AVOIDANCE OF SCAR IN THE TREATMENT OF CERVICAL ABSCESS; WITH THREE CASES.[1]

BY [illegible], M.D.,
Surgeon to the Boston Dispensary.

IN the treatment of abscess of the neck the avoidance of scar is of great importance, for while a cicatrix in certain portions of the body is not noticeable, as in the axilla, the deformity of a long ragged scar upon the neck is considerable.

The three following cases were very large collections of pus. The general custom in treating such cases is to make a free incision, and, of course, the longer the cut the greater the scar.

My object in reporting these cases is to show that this is not necessary and to call attention to the possibility of opening, draining and curing large abscesses with little or no resultant scar.

CASE I. Male, age twenty-six, was referred to me by Dr. J. T. Bowen in February, 1890, with one enlarged gland in the upper cervical region. It was painful, the skin over it was reddened, and there was an indistinct sensation of fluid to the touch. I advised against cutting at that time for several reasons. I was not at all certain that pus was present, in which case the inflammatory process might cease and its products be absorbed. There was a doubtful specific history, with the possibility of a cure by treatment; and if it did prove to be the ordinary glandular abscess, I preferred to let the gland tissue be as thoroughly destroyed as possible before operating.

He was treated by Dr. Bowen, for about one month, with iodide and mercury; but there was no improvement, and he returned to me with an undoubted glandular abscess. Other glands lower down in the neck had enlarged, and were evidently going to break down.

I then explained to him the method of treatment I wished to carry out, which was to make very short incisions, when necessary, and by curetting through these small openings every day or two to remove as much broken-down gland tissue as would easily come away; that if this proved successful, he would have only trifling scars as a result of his trouble; but that if the case did not progress favorably I should be obliged to make a long cut and remove at once all the affected glands, which would leave him with a long scar after recovery.

He left the treatment to me, and I made a short cut down into the abscess which had already formed. I curetted the cavity with a very small curette, syringed it with creolin and put a short wick of corrosive gauze into the opening.

The other glands enlarged slowly. At the end of three weeks they seemed to be well broken down and I made two short incisions over the thinnest points. A large quantity of pus came out and the probe showed that although there were apparently several cavities they were all connected, making really one abscess cavity extending from the root of the neck to a point behind the ear.

I syringed out with creolin, put short wicks of corrosive gauze into the cuts and applied an oakum pad. I saw him every day. At each visit I passed a small curette through the openings and removed as much gland tissue as would easily come. Some days I scraped out a number of pieces and at other times very little would come away.

It was four weeks before there was any improvement. The curette then brought out nothing resembling gland tissue, although there was still considerable pus formation. He had a long sinus running down the neck and branching toward the sternum. This sinus commenced to close near the opening and as it did so it left deep pockets of pus. I prevented this tendency by passing olive-pointed urethral bougies starting with a small one and dilating up to No. 19. After dilating I scraped the walls of the sinus. The effect of the dilatation was very satisfactory. It kept the sinus open, gave free drainage and allowed it to heal up from the bottom.

The result was a cure in about six weeks with three small stellate cicatrices.

CASE II. Male, age twenty-eight, was referred to me by Dr. J. S. Howe, in April, 1890. He had an enormous abscess in the front of the neck, completely filling the space of the right side between the lower jaw and the clavicle. It was wholly subcutaneous and there was no point where there was any indication of thinning.

I made a very short cut in a line with one of the folds of the neck and let out a large quantity of pus.

I syringed the cavity with creolin, but as there were no indications for so doing did not curette. I put gauze into the opening and covered it with an oakum pad. I did not see him again for several weeks, when he was entirely well. According to instructions he had kept the cut open until there was no more oozing from it. There had been some serous discharge which gradually dried up.

The scar can be seen only by careful inspection.

CASE III. A girl, age fourteen, came to the Surgical Department of the Boston Dispensary, during my service last spring. She had a large inflammatory cake in the back of the neck. It was very painful, the skin was reddened, but at the first visit, no pus could be detected. She poulticed it for several days, when it was evident that pus was present.

I made a short cut at the base of the scalp and found pus about half an inch below the surface. The abscess cavity was large and extended well down into the back of the neck. It was syringed out every day, the cut kept open with gauze, and recovery was rapid, leaving a very short linear cicatrix.

In the first case reported, I was, at times, strongly tempted to open up the whole diseased area and end the trouble. For four weeks there was no progress. The gland substance came away slowly and there was considerably pus formation.

I was very much afraid that I was simply prolonging the duration of the process and that it would finally end in the usual long cut and subsequent scar. But it did heal without necessitating this and instead of having a three-inch scar as a permanent disfigurement, the patient has only trifling marks as a reminder of his trouble.

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[1] Read before the Boston Society for Medical Observation, November, 1892.

In the two other cases, I am sure that recovery was as rapid as could possibly have taken place after a most radical incision.

The detail of the above treatment is, of course, very simple, the important point being to make the cut as short as possible — from one-quarter to three-eighths of an inch long — and to depend upon the small curette and syringe, if subsequent treatment is necessary. In such cases as the second one, where the abscess cavity can be completely emptied at once, nothing is needed beyond keeping the cut open until there is no more oozing.

I wish to call attention to the method of treating sinuses that I employed in the first case, by dilatation with olive-pointed bougies. I started with a No. 11, which is not much larger than a large probe. The olive point followed the sinus just as an ordinary probe does, and by going from one size to the next larger, I got a gradual, but at the same time rapid dilatation up to No. 19. I know of no other method which would have prevented, as this did, the necessity for counter openings certainly, or perhaps, opening up the whole fistulous tract.

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THE INFLUENCE OF MORBID CONDITIONS OF THE UTERINE ADNEXA UPON REFLEX PHENOMENA.[1]

BY CHARLES P. STRONG, M.D.

The object of these notes of my personal observation is not to form a conclusive and exhaustive essay upon this subject, but to suggest for discussion the principles of justification of surgical procedure in certain of these cases.

Broadly viewed, functional neuroses associated with tubo-ovarian disease may be divided into two classes: those in which the physical characteristics of the latter are so prominent as to merit recognition and treatment by themselves; and those in which there are no grossly apparent changes, but a reflex nervous condition for which no other adequate cause may be found. Of the latter class I make two subdivisions, according as there is periodicity of symptoms associated with the menstrual flow, or irregularity in this regard. In the former of these two subdivisions attention is naturally directed to a uterine source; in the latter it may not be.

I do not wish to consider the first division with its obvious pathological changes. With regard to the second division, at the outset the most reliable guide — statistical evidence — is not available. The personal bias of the investigator, and his attitude towards gynecological knowledge as a special study, influence his judgment — the cases occupy such debatable ground. A most skilful pelvic surgeon, whose experience was great, said recently to me that he had failed to find any patient of the class under consideration benefited by surgical treatment. An oppositely extreme view is asserted by many a neurologist. Consequently the experience of each operator must be his own guide. There is still one further limitation to be considered in the discussion, and that is that other than surgical means have been employed and proved futile in correcting the nervous symptoms.

The series of reflex disturbance are cephalic, spinal, gastric, and cardiac — one or all; their variations manifold.

The influence upon the nervous system, of abdominal surgery, in ablation of tubes and ovaries, has recently been prominently brought into notice by the report of a number of cases of mental derangement or insanity following this procedure. Therefore, there is the fact established that profound impressions may be made upon the nerve centres by this operation. Chronic, decided cases of reflex disturbance can only be reached by measures which induce profound disturbance of the nerve centres; and to be permanent it is necessary that such impression be of a lasting nature. Consider first the subdivision in which there is association of menstruation and active neurotic manifestations. The typical patient of this class may be free to enjoy but a few days of each month. Whichever organs are reflexly affected begin their symptoms at a varying interval before, and check them at a varying interval subsequent to, the catamenia. If it be found that by removing the tubes and ovaries in a certain number of these cases these symptoms are put an end to, the inference seems to me but logical that we, as conscientious operators, under the limitation set down in the early part of this paper, are at liberty to elect this operation, and not be generically classed as mutilators of women.

When the patient is included among those of the second subdivision, our course is perhaps less readily determined; but once determined, our actions should be none the less decided. Our clinics, both private and public, contain no inconsiderable number of sufferers of this type; they pass from physician to physician, hospital to hospital; and finally, what was functional becomes organic, and the nervous invalid is such no longer, but has true physical disease. These are the patients to whom in many cases a return to health may be assured by performing a comparatively early operation.

Relative to the total number of cœliotomies for tubo-ovarian disease, the cases for which this operation is to be performed are few. I have the notes of ten and the recollection of some few more. The results have been satisfactory. Five of these are now self-supporting, two are very greatly benefited, although the time is too short, less than one year since operation, to speak with absolute certainty as to cure. The others I have no longer under observation. My negative evidence in favor of the operation is equally strong. There has been no death or unfavorable termination in any case.

In these cases the examination before operation showed no changes in tube or ovaries that could be considered sufficient, in themselves, to demand removal of these organs. The specimens removed have when practicable been submitted to a microscopical examination, and in each case there has been found chronic interstitial change, and usually a slight catarrhal condition of the tubes.

I shall report in more detail two cases only. Miss C. became a patient of mine in 1887. She had received local treatment for some years previous. In brief, her symptoms were — beginning seven or eight days before menstruation — pain in the back, nausea and vomiting, faintness and dizziness, with intense pain in the occipital and frontal regions. With these symptoms she went to bed, where she remained until the menstrual flow had entirely ceased, and then, weak and prostrated, began her convalescence. Dysmenorrhœa was also very intense. No form of treatment had given any amelioration of these symptoms, and at the time of my first study of the case she was passing most of her time in bed. After failure of any form of treatment to give relief, I removed the tubes and ovaries in the fall of 1889. There has never been any return of menstruation since. The patient wrote me in October, 1892, on the third anniversary of the operation. In the interim she had passed through a prolonged siege of malaria, chronic diarrhœa, and acute dysentery, family misfortunes and deaths. For two years she has been self-supporting, and now is teaching a school of some sixty scholars, and is, so far as she knows, perfectly well.

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[1] Read before the Obstetrical Society of Boston, October 8, 1892.

The microscopic examination of the parts removed, made by Dr. W. F. Whitney, is as follows: "Both ovaries smooth, with evident thickening of outer layer; on section, there were several cysts, with a thin watery fluid, and numerous large snuff-colored spots. Microscopic examination revealed nothing but a slight increase of the stroma. Diagnosis, degeneration of the ovaries from retention cysts. Otherwise, specimens normal."

Miss X., twenty years old, teacher, since the age of fifteen has steadily lost moral control; is addicted to reading erotic literature, masturbation, nocturnal emissions, and has recently become dangerously fond of the society of young men; is often kept awake all night by erotic thoughts and desires. Fortunately her surroundings have been of the best character; and aided by such feeble efforts as she has been able to put forth, she has, I think, been free from any immoral relations with the opposite sex. She is very conscious of her own failings and has made ineffectual struggles to overcome them. Intense vaginismus precluded examination except with an anæsthetic. The right ovary was found to be somewhat enlarged and prolapsed, and a considerable degree of chronic endometritis. Dysmenorrhœa was intense, keeping her in bed a week.

In March, 1892, I removed the tubes and ovaries of both sides. Examination by Dr. Whitney showed cicatricial hardening and contraction of the left ovary, enlargement with marked increase in the ovarian stroma in the right ovary. After a normal convalescence the patient attempted to resume her teaching in June, but had not the strength.

September 20, 1892, I made an examination. The uterus had grown smaller; the vaginismus was much lessened. The moral conditions most decidedly improved. I advised her to resume her profession at once, which she has done, and now is steadily at work teaching in a normal school. She reports now that she sleeps very poorly, but aside from that has none of the former unpleasant feelings or degraded habits. In a letter just received from her parents there is expressed the most profound relief from the anxiety they had suffered before. The girl's conduct, they say, is entirely free from the characteristics which had so strongly marked it before.

The conclusions to be drawn from the two cases certainly bear out the suggestions of the earlier part of this paper. It will, undoubtedly, be the case that we shall fail to give the relief anticipated in a proportion of cases, but, selecting and eliminating, which, as our experience increases, we can more readily and accurately do, I am convinced that there is by this operation much help to be given this most wretched class of sufferers.

Clinical Department.

A REPORT OF THREE CASES OF CARIES OF THE COCCYX.[1]

BY R. E. DARRAH, M.D.

IN view of the infrequency of the occurrence of caries of the coccyx and of the fact that it is often unrecognized until a late period of the disease, it occurred to me that a report of these cases might be of interest to you. They are three in number, and occurred in the service of Dr. H. L. Burrell, of the Boston City Hospital (whose kindness in permitting me to make use of them I desire here to acknowledge), and were admitted as cases of ischio-rectal abscess and fistula.

CASE I. D. McC., fifty-three years of age, married, carpenter, came under the care of Dr. Burrell, July 7, 1890.

Family history was negative. He always had been well, with the exception of hæmorrhoids, which had troubled him for years, bleeding at times, protruding at stool and accompanied with more or less pain.

The following history was obtainable: He had had an abscess, followed by another one-and-one-half years ago. Both broke, and there had been a continuous discharge from them ever since. He had had two operations, the sinus slit up and the sphincters dilated and stretched. The wound had never healed; and he never had been without pain. Within the past four months an abscess had formed again on either side; the one on the right breaking, and there had been a thin watery discharge from it ever since. Appetite poor; bowels constipated. There was no history of injury.

Physical examination showed that posterior to the anal opening there was an old granulation surface — gray, with a moderate amount of purulent discharge from it. On either side of the buttock there was an old wound, from which there was considerable purulent discharge; marked induration and reddening about it. On the left buttock there was a moderate, sensitive, indurated swelling. No fæces through the wound. Flaxseed-meal poultices alternating with iodoform dressing were applied for one month, when he was examined in consultation with Drs. Gavin and Post. An injection into one sinus ran from one sinus to another. A probe was passed backwards toward the coccyx when roughened bone was detected. He complained of much pain in this region. Five days later he was etherized, and the usual antiseptic precautions having been taken, Dr. Burrell made an incision in the median line directly over the coccyx; then a director was passed through the sinuses and they were slit up into the first incision. The periosteum was retracted, and the coccyx was found roughened on the lower surface. The articulation between the sacrum and coccyx was divided with bone forceps and the coccyx dissected out in three pieces. The remaining sinuses were opened into the rectum, and the whole curetted. Deep silk sutures were placed, except on a small portion of the median line, which was packed with iodoform gauze, and iodoform dressing applied.

The recovery was uneventful, the bowels moving on the fifth day. A few of the sutures were removed, and all were out on the tenth day. The wounds were irrigated with corrosive sublimate (1–3000) and dressed whenever the bowels moved. Six weeks later he was discharged from the hospital. There were no subjective symptoms. The wound, which had been allowed to granulate, was nearly healed, with the exception of a small granulating fistulous tract extending directly forward toward the rectum. He returned for a change of dressing a few times. At the end of two weeks the wound was closed.

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[1] Read before the Boston Society for Medical Observation, November 7, 1892.

He was seen at his house about one month ago, and said that the wound remained closed six months; then it opened, and from it there was a thin, watery discharge (at times a little blood); that he never had had any pain since the operation, and was enjoying good health. Physical examination shows a line of old cicatrices about the anus, with a sinus in the median line, three-fourths inches therefrom passing directly forward into the rectum.[2]

Case II. H. W. B., twenty years old, single, driver of a milk-cart, was admitted to the hospital September 11, 1890.

Family history negative. Always well until two years ago, when his present trouble began, which he thinks was caused by riding. At that time he began to have pain, and noticed a small swelling on the left buttock near the anus, which increased in size, and broke. Later, another formed; and he was operated on one year ago.

A few weeks ago he noticed another swelling on the same side, which burst and from it there has been a constant discharge ever since. He has had pain varying in severity most of the time — more severe when sitting. Appetite good. Bowels regular. Urine negative.

Physical examination showed on the left buttock an irregular scar three inches long, curvilinear in shape, one inch to the left of the fold of the buttock. The tissue was indurated about this — fluctuating at one spot. From a small opening a sero-purulent fluid was discharged on pressing the surrounding tissues. On the left side of the fold between the buttocks was the cicatrix of an old opening. On the right side, opposite the latter there was some induration of the tissues, which was not well defined.

Two days later, following the usual antiseptic precautions, he was etherized, and Dr. Cragin (Dr. Burrell being present) inserted a director into the sinus, which passed through to an opening on the inner side of the buttock. This was laid open, and pus of a watery consistency evacuated. Another fistulous tract was found, traced to the surface and opened. The walls of the sinuses were apparently cartilagenous in consistency and were cut out.

A passage was found leading down toward the coccyx which was roughened. An incision was made directly over the middle of the coccyx posteriorly, and carried down to it; the periosteum was retracted; and the coccyx then removed by means of bone forceps. Curetted and irrigated with corrosive sublimate (1–3000). The edges of the wound were brought together with deep, heavy silk sutures, and a corrosive dressing applied.

There was very little pain following the operation. On the sixth day the stitches were removed, the greater part of the wound having united by first intention. There was a symetrical area of slough about the region of the old scar. Iodoform dressing. Three weeks later the wound was healed, with the exception of a small shallow sinus, which was dressed with iodoform; and he was discharged from the hospital.

Two weeks ago he forwarded a statement, saying that the wound closed one week from the time he arrived home; that he had had no trouble since, until four months ago, when a small abscess, about the size and shape of a bean, appeared in the old cicatrix; that he had lanced it himself, and there was a discharge of blood; that it healed readily in a few days and was then perfectly well. He considers himself cured.

Case III. P. J., thirty-eight years of age, single, carriage-driver, was admitted to the hospital October 10, 1890.

Family history was negative. Always well until eight months ago, when he noticed a hard lump on the left side of the buttock which gradually increased in size, and broke four months ago; from this there has been a thin, watery fluid discharging ever since. He has had pain varying in severity since the lump appeared. No history of injury, appetite fair. Bowels constipated. Urine negative.

Physical examination showed, just to the left of and posterior to the anus, a small red infiltrated area in which there was a very small opening.

Through the kindness of Dr. Burrell, I operated on the patient the following day. The usual antiseptic precautions having been taken, he was etherized and a probe passed into the opening, which went posteriorly toward the coccyx, and roughened bone was detected. A director was passed along the sinus, and it was thoroughly laid open down to its origin, the coccyx. Excision of the coccyx was considered, but it was thought unadvisable, as the patient's permission for the removal of it had not been obtained. The roughened bone was thoroughly curetted as well as the whole fistulous tract. The wound was irrigated with corrosive sublimate (1–3000) and the edges brought together with silk sutures and a sublimate dressing (1–3000) applied. Very little pain followed the operation. The sutures were removed on the seventh day. The wound was irrigated and dressed whenever the bowels moved. Twenty days from the time of the operation he was discharged at his own request. There remained a small granulation area from which there was considerable discharge. He reported to-day that the wound healed a year and a half later. During this time there had been a thin, watery discharge, but no pain.

In reviewing the literature of the subject I have been able to find only twenty cases reported since the first operation was performed for removal of the coccyx in this class of cases.

The operation for removal of the coccyx was performed by Dr. J. C. Mott, in Mobile, in 1844. A *résumé* of his case may be interesting as it illustrates the type of cases occurring in females. A woman fell striking on the coccyx. Pain persisted for two years. Within this time she was delivered of a child. Continuous pain and tenderness over the coccyx and abnormal mobility were the principal symptoms noted.

Including the cases I have reported to-night, nine cases have occurred in males and fourteen cases have occurred in females.

There was a history of injury in all except four cases.

Pain (which was continuous) existed in all the cases except two (not noted by the reporter whether it was present or not). In some of the cases it was the only symptom noted; this was especially noticeable in cases occurring in females, following parturition.

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[2] I think the [illegible]

Multiple and persistent sinuses occurred in twelve cases, including all the males.

Excision of the coccyx was performed in all the cases except four.

In three cases there was no relief from the operation. One complicated with uterine disease, and one complicated with tubercular disease of the hip and spine, died. One died, following incisions and curretting, of sepsis. One recovered after incision and curetting.

From the above, I think, we can draw the following conclusions.

(1) That caries of the coccyx occurs very infrequently.

(2) That it is more common in females than males.

(3) That there are these important points in considering the diagnosis of these cases: (*a*) history of injury; (*b*) constant pain; (*c*) multiple and persistent sinuses (not always present); (*d*) that persistent sinuses should lead one to suspect caries of the coccyx (*e*) that excision of the coccyx is the best treatment for all cases when there is disease of that bone.

NOTE. — Percautions taken previous to operation: bowels moved with cathartic the day previous to operation, and by enema on the day of operation. Parts should be scrubbed with soap and water, alcohol, ether and corrosive sublimate (1–3000).

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Medical Progress.

RECENT PROGRESS IN OTOLOGY.

BY CLARENCE J. BLAKE, M.D.

THE REGENERATION OF THE SUBSTANTIA PROPRIA IN CICATRICES OF THE MEMBRANA TYMPANI.[1]

DR. GOMPERZ reports the pathological examination of an adult who had previously suffered from suppurative inflammation of the middle ear with a resultant destruction of the larger portion of the membrana tympani and of the long process and neck of the malleus, the head of which was found to be anchylosed with the incus; the incus articulated normally with the stapes, but the latter bone was immovably fixed in the fenestra ovalis.

The space previously occupied by the membrana tympani had become filled by a cicatrix, which was made the subject of examination; the dermoid coat was much thickened, and exhibited only Malpighian cells, the fibres of the substantia propria were much broadened, measuring in some instances 0.05 mm., as compared with 0.01 mm. in the normal membrana tympani. It was also notable that the radiating fibres only were reproduced, there being no trace whatever of the circular fibres even towards the periphery of the cicatrix. The connective-tissue between the fibres was not changed but there was apparently, on the other hand, a larger number of cells.

OPERATIVE TREATMENT OF DEAFNESS RESULTING FROM IMPAIRED SOUND TRANSMISSION.[2]

Dr. Stetter reports three cases in which a high grade of deafness had come on gradually and painlessly, but with the accompaniments of tinnitus and occasional vertigo. One patient was unable to hear the watch in contact with the auricle; the other two heard the watch in contact. All three had hearing by bone conduction; but in two cases the hearing by bone conduction, while evident in both ears, was better in the better ear, and in one case no sound was heard in the affected ear. The writer assumes that in consequence of the thickening and immobility of the membrana tympani and ossicula, pressure in the labyrinth, through the medium of the foot plate of the stapes, had occurred, and that this condition, continuing for months or years without the normal movement of the ossicular chain and membrane, had caused an "inactivity anchylosis" and a firm fixation of the foot plate of the stapes in the oval window. As a result, an increase of pressure in the labyrinth had resulted in a "pressure paralysis" of the organ of Corti; from this cause, in one of the cases, the hearing by bone conduction was wholly lost and in the other two, in which the pressure had not been so long continued, it was so impaired as to result in the reference of the hearing by bone conduction to the healthy side. To remove the supposed anchylosis of the foot plate in the oval window, the author passed the hook behind the malleus through an incision in the membrana tympani, and by this means made repeated traction, with a result of decrease of the tinnitus and an increase in hearing by bone conduction. On account of the speedy healing of the first small incision, a second larger triangular opening was made, extending from the short process of the malleus to the posterior inferior quadrant of the membrane; through this opening, traction was made by means of an instrument passed behind the handle of the malleus, a twenty per cent. solution of cocaine being used to make the operation painless. A similar discission and mobilization was three or four times repeated, with the result of an improvement in hearing for both aerial and bone conduction.

From these observations the author concludes that in any case of a high grade of deafness with thickening of the tympanic mucous membrane, discission of the membrana tympani and mobilization of the ossicular chain is allowable, and that removal of the stapes may eventually come in question in certain cases of marked anchylosis, and that in such instances the auditory nerve may return to its function even where the hearing by bone conduction has been previously wanting.

TUBERCULOSIS OF THE LABYRINTH.[3]

Dr. Cohnstadt reports a case of tubercular caries of the tympanum, mastoid and labyrinth, with abscess of the cerebellum, in a child eleven years of age which had suffered from an ottorrhœa for seven years. The patient entered the clinic with a temperature of 104.4°, offensive discharge, destruction of the membrana tympani and granulations in the middle ear. There was slight facial paresis, absolute deafness to all tests, and a careful examination showed that the ossicles were wanting. Microscopic examination of the pus showed tubercle bacilli. On cutting down upon the mastoid, the soft tissues over which were without swelling, the cortex was found to be normal, but there was pus and caries in the interior. The discharge from the ear ceased on the third day after the healing of the postaural wound. On the eleventh day the patient was seized with dizziness and vomiting, and died three days later. At the autopsy it was found that the membrana tympani, malleus and incus were wanting, and that there was caries of the tegmen tympani and of the petrous portion, and an opening into the labyrinth from the tympanum, including destruction of the greater part of the cochlea and semicircular canals, caries of the facial canal, and probable passage of pus along the facial nerve. The writer makes it a rule to examine the pus microscopically in all chronic suppurations of the middle ear, and often, especially in scrofulous individuals, finds tubercle bacilli; in such cases he advises an early mastoid operation even before swelling and pain have appeared, and says that where this rule has been followed he has always found caries at some point within the mastoid cells.

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[1] Gomperz: Zur Frage der Regeneration der Substantia propria in Trommelfellnarben, Monatschrift für Ohrenheilkunde, April, 1892.

[2] Stetter: Beitrag zur operativen behandlungder Schwerhörigkeit in folge von Schalleitungshindernissen, Monatschrift für Ohrenheilkunde, August, 1892.

[3] Cohnstadt: Beitrag zur Tuberculose des Labyrinths, Monatschrift fur Ohrenheilkunde, May, 1892.

MEASUREMENT OF THE HEIGHT OF THE CUPOLA OF THE TYMPANIC CAVITY.[4]

Dr. Klingel presents a report on the examination of forty-seven bones in Hartmann's collection, with reference to the dimensions of the tympanic cavity, especially of that portion above the superior periphery of the annulus tympanicus, to which he gives the name of cupola, and which has otherwise been described under the name of fornix and attic, by Leidy, Politzer and Sexton. Politzer gives the distance from the roof of the tympanum as between five and six millimetres, while the average obtained by Klingel is less than this and did not in any case exceed four millimetres. He is therefore of the opinion that the instruments employed by Schwartze and Sexton, which have a length above the shaft of between four and five millimetres, imply a danger in their use to the tegmen tympani and to the meninges.

TREPHINING OF THE SKULL AFTER OPERATION ON THE MASTOID.[5]

Polo describes a case of trephining of the skull after operation on the mastoid in a boy six years of age, who had a suppurative inflammation of the left middle ear which had ceased discharging about eight days before the time of his first visit. There had been, from the beginning of the trouble, severe and increasing pain in the head, (especially on the left side,) great restlessness, and rise of temperature toward night.

The pupils were dilated, and did not react to light; the pulse was full and slow; the patient was restless and excitable, had occasional attacks of bilious vomiting, and passed his urine involuntarily. There was internal strabismus of the left eye and twitching of the facial muscles. Examination of the ear showed perforation in the posterior inferior quadrant of the membrana tympani. The external auditory canal and mastoid region were [illegible]ness to pressure behind and above the ear, which decreased toward the front. Operation having been decided upon, the mastoid process was thoroughly opened by means of the chisel, but without liberating the pus. On the following day, the condition of the patient being the same as before trephining was decided upon and an opening was made four and a half centimetres above the left external auditory canal. The brain protruded forcibly through a crucial incision made in the dura. Puncture both anteriorly and posteriorly was without result but on carrying the trochar directly inward to the depth of about four centimetres, about two teaspoonfuls of thick yellow pus was liberated. The brain substance was then incised along the trochar, drainage applied, the dura sutured, and the wound dressed antiseptically. There was no improvement after the operation. The patient became unconscious, the pulse and the temperature rose and the left eye, which had formerly been turned inward, now turned outward; death ensued on the second night after the opening of the abscess of the brain.

AURAL SYMPTOMS OF NEURASTHENIA.

Dr. Suné y Molist offers an explanation of the annoying symptoms, in the form of subjective noises, which are so prominent in many cases of neurasthenia, and which are accompanied often by a considerable diminution of the hearing by bone conduction. These cases of tinnitus are grouped by the author as follows:

(1) Simple suspense of vaso-motor inhibition resulting in dilatation of the vessels of cochlea, which, by their pressure upon the terminations of the acoustic nerve, cause a continuous tinnitus, which may be temporarily relieved by forcible compression of the carotid.

(2) Patients who have previously had an otitis, who are rheumatic subjects or who have an atheromatous condition of the vessels which once dilated do not readily return to their previous condition, the result of this continued dilatation being exudation into the membranous labyrinth or, possibly, hæmorrhage.

(3) Affection of the perceptive power of the internal ear as the result of the long continued vaso-motor disturbance; in these cases the tinnitus gradually increases in intensity, as does also the impairment of hearing, and to these two symptoms is sometimes added vertigo.

DEAF MUTES IN DENMARK.

The fact that the public care of deaf mutes and of all matters concerning them is more advanced in Denmark than in other countries has made it possible for Dr. Mygind to present a most interesting review of the subject as far as concerns this class in his country. As early as 1817, the Danish government resolved to make instruction of all deaf mutes compulsory, and the fact that the State thus took the instruction into its own hands, made the registration of deaf mutes a necessity. This registration is carried out by an annual report made from each parish as to the number of deaf and dumb individuals who have lived in the parish during the previous year, and of each deaf and dumb child recorded, a report as to condition is each year required. In January, 1886, there were 1,225 deaf mutes in Denmark proper, which, estimating the population at 1,969,039, gives 63.7 deaf mutes per 1,000 inhabitants. A comparison with the relative number of deaf mutes in other European countries places Denmark fifth in a list which is headed by Holland with 33.5 per 100,000 and closed by Switzerland with 245.2. From a comparison of the deaf-mute rate for different years in Denmark, beginning in 1855 with 57.8, it would appear that deaf-muteism had been on the increase during the past twenty-five years. While a comparison of the relative numbers of the two sexes shows that deaf-muteism is on the increase amongst the female population, it is still shown that the male deaf mutes are both absolutely and relatively more numerous than the females, 100 to 94.9, in reference to the fact that the male population of Denmark is, as in most other countries, numerically weaker than the females, the proportion being as 100 to 103.5. As regards acquired deaf-muteism, which has been proved to be more common between one and four years of age, its most frequent causes are found to be scarlet fever, measles, typhoid fever and cerebro-spinal meningitis — the latter disease being found to play an important part in the present prevalence of deaf-muteism, the high rate in the northern and western districts especially being attributable to recent epidemics of this disease. Further, there seems to be a strong connection between the deaf-mute rate and the fertility of the districts, inasmuch as the rural districts most heavily burdened with deaf-muteism are, on the whole, the less fertile and more thinly populated districts in Denmark; while, on the other hand, most of the districts with a low deaf-mute rate belong to the most fertile and most densely populated districts. The fact that the more thinly populated districts on the whole are most heavily burdened with deaf-muteism is not incongruous with the fact that the high deaf-mute rates are principally caused by epidemic influences, but can easily be explained by the fact that epidemic diseases make the greatest havoc in districts where the population lives under bad social and sanitary conditions. In reference to their social condition and marriage relations, the author found that the great majority of deaf mutes who were self-supporting were so as the result of manual rather than intellectual labor and in reference to productiveness of marriages, that the small number of children born in marriages contracted by deaf mutes is due in Denmark as elsewhere, to some extent, to the fact that the average age at marriage, of deaf mutes and their husbands or wives, who were not deaf and dumb, is somewhat advanced, compared with that of the general population. The principal cause, however, being found in the circumstance that comparatively many of the marriages contracted by deaf mutes were of recent date at the time of his investigation, the latter circumstance being undoubtedly due to the increasing propensity among deaf mutes to enter into matrimony. It is, furthermore, worthy of notice that not a single child born in the marriages of deaf mutes, so far as investigated, was itself deaf and dumb.

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[4] Klingel, [illegible]

[5] Polo, [illegible]

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BEZOLD'S PERFORATION OF THE MASTOID ANTRUM.[5]

In a paper on Bezold's perforation of the mastoid antrum, Guye reports two cases of this complication of mastoid disease. This subject is one which has been written upon in this country by Drs. J. Orne Green, H. Knapp, Gorham Bacon, and others, although these cases were originally supposed to be quite rare. The first patient was a man, fifty years of age who, eleven weeks previously, had pain in the ear and soon after otorrhœa with tenderness in the mastoid process. A Wilde's incision was made twice, no pus being found, but a temporary improvement following each incision. Gradually there developed in the neck and the retro-maxillary fossa a hard, tender swelling, which showed no fluctuation, and which was regarded as being due to the swelling of a lymphatic gland and œdematous infiltration. There was violent pain in the ear, facial paralysis, perforation of the membrana tympani and granulations in the external canal. Three weeks later the patient was worse, there being a round polypoid granulation springing from a fistula in the posterior wall of the canal. This granulation was cut away with a ring-shaped knife, and pus exuded from the fistula, especially when the swelling below the mastoid was pressed upon. Eleven days later, a fluctuating spot was found at the anterior margin of the sterno-cleido-mastoid muscle; and from an opening made at this point a large quantity of pus escaped. A rubber drainage-tube without lateral perforation was passed into the wound and water injected into this came freely from the ear; these injections were repeated daily, and at the end of two weeks there was complete re covery.

The second case was that of a man, sixty-five years of age, who came under treatment in January, 1891; following a nasal injection he had a tingling in the left ear without pain and on the following day an otorrhœa. The otorrhœa ceased after several days of treatment, but tenderness of the mastoid and of the left half of the head continued. In October of the same year a mastoid operation was proposed but the patient would not consent, and put himself under the care of an ignorant masseur who massaged him four months with the result that the headache grew steadily worse and a hard swelling gradually developed at the lower border of the cranium. When seen in the latter part of January, there was no otorrhœa, the posterior wall of the canal was bulging, but the mastoid was not sensitive; on the other hand, there was severe headache over the entire left half of the head, with nightly exacerbations, and a hard sensitive swelling along the lower margin of the skull. Early in February, operation was consented to, and after passing through a dense layer of bone, the antrum was reached, pus evacuated and a drainage-tube was left in the wound. Two weeks later, there was more swelling below and behind the mastoid and the fluctuating tumor spread to the back of the neck. "When this tumor was pressed upon pus exuded from the fistula in a stream. There was, however, nowhere a superficial fluctuation which would serve as an indication for an incision."

Early in March a long, deep incision was made through the periosteum, from the fistula downward and backward to the margin of the process. There was no pus beneath the periosteum; and the writer concluded that the pus had gradually absorbed and that the abscess cavity would close when, four days later, he was disabused of this idea by the appearance of a large retro-pharyngeal abscess, which occupied the entire left half of the pharynx. This abscess was opened, and a quantity of pus evacuated. Four days later two new abscesses were opened, and all were kept empty with pressure of the finger. Massage of the neck forced some pus into the throat but this soon ceased, the infiltration of the pharynx disappeared and the general condition improved.

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[5] Professor Guye, Amsterdam. Two Cases of Bezold's Perforation of the Mastoid Antrum, Archives of Otology, vol. xxi, No. 3.

These two cases, as reported, serve to illustrate the importance of applying ordinary surgical rules at an early stage to the treatment of mastoid disease.

Dr. Knapp[9] also reports a case of the so-called Bezold variety of mastoiditis in the case of a young woman, twenty-five years of age, who had repeated attacks of acute nasal pharyngeal catarrh extending into both ears. The left ear recovered, but the later attacks showed indications of inflammation in the right mastoid with marked meningitic irritation. The case is recapitulated as follows:

The patient was pregnant, and during the last months the attacks were more severe. The upper part of the sterno-cleido-mastoid muscle became red, swollen and painful; ten days after her confinement, her attending physician made a deep incision into the swollen head of the muscle, liberating a good deal of pus. The relief being only temporary, the mastoid was opened from its base to the tip; pus was found in the upper part, and the wound was kept open by a perforated silver tube. The patient felt relief, but soon had a pleuritic exudation as an intercurrent disease, which disappeared in less than two weeks. She was discharged from the hospital as cured, felt well for two weeks; and then symptoms of cerebral irritation returned, and with varying intensity lasted until her death, three months later. These symptoms were: persistent headache, nausea, occasional vomiting, dizziness, stupor, impediment of speech, loss of appetite, constipation. The pulse at first varied from 70 and 88, later sank to 60 per minute; the temperature varied between 98.4° and 100°, never rapidly changing. There were no convulsions, deliria, chills, or abnormity of sensation. The ear gave her no more trouble, and there was no discharge from the ear, though the drumhead and adjacent portion of the canal were red and bulging. Two months before death, a sudden swelling was noticed below the head of the other (the left) sterno-mastoid muscle. It varied in size, but never disappeared entirely. The left ear remained healthy. Examination with the opthalmoscope showed the eye to be healthy until the last month, when the development of optic neuritis could be distinctly watched. The extension of suppurative ear-disease to the brain being diagnosticated, cranitomy was advised. The opening in the mastoid was enlarged and extended into the cranial cavity, by an opening three centimetres by two centimetres in diameter; the dura mater and lateral sinus were found to be healthy. The wound was then extended into the tymanic attic by enlarging the mastoid antrum and removing part of the posterior wall of the ear canal with the chisel. No pus being found in the tympanic cavity and the bone being thick and hard, the middle cranial fossa was opened by chiselling a hole, two centimetres in diameter, through the squamous portion of the temporal bone beginning one centimetre above the ear canal. No extradural suppuration being found, the dura mater and the superficial layer of the brain were incised, but found healthy. On account of the patient's feeble condition, exploratory incisions into the brain substance were not made. Three-quarters of an hour after the operation, she suddenly collapsed and died.

The autopsy verified the diagnosis of Bezold's variety of mastoiditis: there was a perforation in the medial bony surface of the mastoid process; the upper part of the tympanic cavity was densely filled with granulation tissue; the right lateral sinus was healthy, but filled with dark clotted blood; [illegible] healthy throughout; the pia of the right temporal lobe and the right cerebellar hemisphere was milky, its small veins filled with pus, the sinuses in the median line, those adjacent to the median line on the right side, and all the sinuses on the left side; furthermore, the left internal jugular vein, as far as the swelling noticed underneath the upper portion of the left sterno-mastoid muscle, was filled with pus (purulent thrombophlebitis); in the right temporal lobe there was an abscess the size of a walnut and in the right cerebellar hemisphere another of the same size; the remainder of the brain, especially the ventricles, was normal and microscopic specimens and cultivations from the cranial abscesses showed small bacilli, but prevalently staphylococcus aureus.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, November 7, 1892, Dr. Ingalls, in the chair.

Dr. F. M. Briggs read a paper on

THE AVOIDANCE OF SCAR IN THE TREATMENT OF CERVICAL ABSCESS, WITH THREE CASES.[1]

Dr. Buckingham: I would like to ask whether in dilating from the probe size up to the curette size it can be done at one sitting?

Dr. Briggs: Very easily. That method of dilatation is a very satisfactory part of the treatment.

Dr. Buckingham: It is a very ingenious part of the treatment.

Dr. Spear: I should like to say that in the treatment of what we used to call post-aural abscesses it has been my custom to make a small incision and syringe out with a sterilizing solution. It was often the case that immediate resolution followed from simply evacuating the contents and syringing with permanganate solution.

Dr. Briggs: How large abscesses?

Dr. Spear: Holding from one to two ounces. Not technically cervical abscesses, but abscesses about the ear extending into the neck.

Dr. Briggs: We see a great many small affairs like boils and carbuncles and abscesses behind the ear, but I referred to the large ones with large scar.

Dr. Spear: I agree with you in regard to the small incision. In former days when we did not use antiseptics it was absolutely necessary to use a free opening.

Dr. Ingalls: It is certainly desirable to find, after an operation of that kind or any kind, that a scar is not visible or that the scar left is not unseemly. Many cicatrices are ragged, and even time does not cause or obliterate the wellnigh disappearance of the scar. There are other scars the edges of which are brought together cleverly which will show for a while, but which time will obliterate almost entirely and in some cases entirely. By time, however, I mean a great number of years, not merely a few months. I think the doctor has been quite successful in his object.

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[9] H. Knapp: A [illegible] Archives of Otology, vol. xxi, No. 3.

[1] See page [illegible]

DR. R. E. DARRAH read a report of

THREE CASES OF CARIES OF THE COCCYX.[1]

DR. BURRELL: I fancy it is unique to have so many of these cases, that is three, come under observation within two or three months. The diagnostic symptoms which pointed towards caries of the coccyx in two of the cases was the persistence of sinuses, the intense pain, and the fact that the ordinary operation of slitting up the sinuses were inefficient. The operation of removal of the coccyx was found to be very simple. An incision was made in the median line over the coccyx and a periosteum elevator raised the soft parts from the bone which was separated by division with bone forceps at the sacro-coccygeal joint; the sinuses were laid open and curetted out, the edges of the tissue were brought together and the wound was packed with iodoform gauze, which quickly put all of the cases on the road to recovery.

I would like to speak of a case of removal of the coccyx that was related to me by a surgeon in this city. The history was something like this: A fall striking directly on the coccyx. Treatment in bed for ten days, patient going about and finally coming back to his ordinary mode of life, which was riding in a carriage. At the end of six months there developed what he thought and what his physician thought was neuralgia especially marked in the sciatic nerve. On physicial examination at the end of a year it was found that the coccyx instead of occupying its normal position had bent in directly on itself, and when the finger was introduced into the rectum the tip of the coccyx could be felt as a sharp bony projection in the lumen of the rectum. The patient was an intelligent man and the surgeon laid the question before him of removing the coccyx. The coccyx was removed, but its removal did not relieve the neuralgic symptoms. Apparently there had been a neuritis which had become permanent, and the patient still suffers from sciatica. The bending in of the coccyx actually shutting off a portion of the lumen of the rectum, must be a rather rare condition.

DR. INGALLS: It seems to me this class of cases must be very rare. I believe the reader reports having found on record but about twenty. But pain in that region or neuralgia perhaps of that particular region is not quite so rare according to what I have heard in conversation with other physicians and in my own experience.

DR. MIXTER: If I am not very much mistaken in either some of the text-books on obstetrics or perhaps in some anatomical work I have seen the statement that in countries where women ride horseback a great deal there is very apt to be a bending, with anchylosis of the articulation between the sacrum and the coccyx, and that for that reason these women have much more difficult labors. Now I have seen a great many cases in the dissecting-room where there was a very sharp angle at this point, the coccyx being bent straight inwards. I have had several cases sent to me for removal of the coccyx where this condition existed. In one case, that of a young female physician from the West, the question was whether, in case she were married and should become pregnant, this would be a serious obstruction to delivery and whether it would be necessary to remove the coccyx or at least to restore it to its normal position. I looked the matter up and found that in case the coccyx was bent the birth of the child's head was pretty sure to break it, but if not it could be broken at the time under ether, and I advised her to wait. There was no especial pain, but there was a very sharp bend. I am very sure that one sees more cases of sharply bent spines at this point, the articulation of the sacrum and the coccyx, where there is no history of pain than where there is pain. It is very much to my mind like the bend between the ensiform cartilage and the second bone of the sternum. Because the person happens to have pain in the coccygeal region I should certainly look for other causes before breaking the articulation which might be anchylosed, or resecting the coccyx. I recall one case where there was a marked retroversion of the uterus, and when that was placed in its natural position the pain which was referred entirely to the coccyx entirely disappeared. I think that too much has been said about the coccyx in these cases and many times it has been resected for pain. In a very considerable number of cases that I have seen and where resection or some operation has been desired, to my mind there has been no indication whatever for operation on the coccyx, some other organ generally in the pelvis being at fault. I will say that the young woman whom I spoke of, dated the malposition of the coccyx to the time when she began to drive over the prairies in the ordinary Western wagon without springs, and that would correspond very much to the cause that is given in New Zealand and elsewhere where women ride horseback.

DR. VICKERY: I remember seeing that statement to which Dr. Mixter refers, about anchylosis in horsewomen; and the writer said that this was the reason why so many English women had a hard time with their first babies. I think that in my obstetric practice it is very common for women, especially after the first baby, to complain of that region of the body for a month or two after the baby is born — so common that certainly that symptom alone would not lead me to think there was suppuration of the coccyx, unless it continued longer than a few weeks and unless sinuses appeared or something of that sort.

PATHOLOGICAL SPECIMENS.

DR. MIXTER: I have two specimens to show. The first is a fibroid tumor of the uterus which has certain points of especial interest. It was removed from a woman who had been married fifteen months, the husband dying some time ago and there was a history of a certain amount of enlargement of the abdomen for several years. The patient thought that the enlargement appeared first on the left side, and the girth of the abdomen had very slowly increased until about a year ago when the tumor began to grow more rapidly and gradually filled the whole abdomen. There was never any considerable hæmorrhage, but the last few months there was considerable fever with chills and she supposed that she had malaria. There was very little pain in the abdomen, but her health was being gradually undermined and by the end of the summer she was very weak, later she regained enough strength to think of some operation for the relief of the pressure, etc. It was a patient of Dr. Bigelow's of Leominster, and I saw her about a week ago and advised operation, although I was unable to make out exactly the nature of tumor. The vagina and all the parts in that region were very sensitive, and I was unable without ether to pass a sound. The mass was quite elastic and it was impossible to say whether it were a cyst of the ovary or a elastic fibroid. One thing that suggested an ovarian tumor was the fact that by the rectum could be felt a rounded body rather movable on the tumor [illegible] which might perhaps be the [illegible] of the uterus. I operated three days ago and removed the tumor. On opening the abdomen I came down upon the tumor and it was very easy to see that we had to do with a thick walled cyst. On making an opening a gush of creamy pus-like fluid spurted out. The opening was enlarged and the cyst slowly emptied itself, all the time the mass gradually contracting like a gravid uterus when expelling the fœtus. I recognized by that time, on sweeping my hand round and feeling the broad ligaments and ovaries, that I had to do with a uterine tumor. It had exactly the same action that the uterus had in the case where I performed Porro's operation, the whole uterine wall following down, closing as the contents of the cavity were expelled. I made the opening large enough to introduce my hand and found a number of loose masses in the fluid. The broad ligaments were tied off and the whole mass amputated. As the tumor was contracting I noticed that the peritoneum, especially on the anterior surface (the bladder I may say was drawn up some distance onto the tumor) began to wrinkle, so I made a transverse cut through the peritoneum, pushed my hand down and separated the peritoneum from the tumor, and having stripped it off, turned it out over the lower angle of the wound. After having tied off the vessels I came down to a very small pedicle which was the cervix, not as large as my thumb. Having cut away the mass to obtain a better view of the stump, I removed the spring-forceps, placed as a clamp on the pedicle, stripped off the coverings of the cervix and finally cut it off at the os. When the two surfaces, the cuffs that were left, had been folded in and silk had been passed out through the cervical canal, it occurred to me that I still had this large mass of peritoneum left which had been turned out of the wound. Instead of cutting it off, it occurred to me that I might use it as a partition or roof for the bottom of the pelvis; so having drawn up the intestines from the bottom of the pelvis, I folded the peritoneum over, pressed it down over the stump of the cervix where it fitted very nicely, and having tucked in the edges of the peritoneum, dropped the small intestine back into place. In that way having all these peritoneal surfaces come together, there could be no chance of any sepsis travelling upward after they had once become adherent. The wound, of course, was sewed up tight. There was very little hæmorrhage. Her highest temperature has been 99°, pulse not over 114; she has had a movement of the bowels and is more comfortable than before the operation.

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[1] See page [illegible] of the Journal.

The interesting point, first, as to the specimen, is the fact that we can have in a tumor of this sort a necrosis like this with very considerable amount of broken-down tissue. There was at least two quarts of this puriform fluid with no suppuration nor hæmorrhage, and upon examination you will see enormous vessels, which are completely denuded, crossing the cavity, and yet with no sign of blood in the fluid. The uterine canal which is open here is entirely separate from the cyst-cavity. The fact of a uterine myoma having this power of contraction is also very interesting. The opening, which was certainly large enough to admit my hand easily at the operation, has since closed to [illegible]

Dr. W[illegible] sis of the tissues of the fibroid, the puriform fluid being composed of fatty detritus, etc., with no pus cells.

As regards the treatment of the pedicle there is nothing new. In the ordinary firm fibroid it would be very difficult to separate off enough well-nourished peritoneum to allow a use of it as detailed above.

The other specimens that I have to show, were removed to-day from a patient who had been under my care since early in July, with a growth occluding both the œsophagus and the larynx or trachea. She was at first a patient of Dr. Knight, who made the diagnosis. For eighteen months she had difficulty in swallowing and by the laryngoscope could be seen a mass of granulations, probably malignant, which came up into the pharynx and larynx. She entered the Carney Hospital early in July and the day after I first saw her; her breathing was so difficult that I immediately performed tracheotomy under cocaine and as she sat in her chair. At that time she was very weak, and almost starved to death as she had not been able to swallow even water for a week. After trying a few minutes each day for two or three days with all sorts of œsophageal bougies and other instruments, I was able to pass a very fine bougie into the stomach. Through [illegible] bougie, she was fed for several days and soon the instrument was passed without difficulty. It is very interesting to see this specimen because as one looks at it, one can hardly imagine where any instrument could have gone into the œsophagus. After once finding the channel the tube was passed with perfect ease several times a day by the Sister in charge, and the patient gained strength and flesh up to a couple of weeks ago when she began to have attacks of fainting and once she had a sort of convulsion in the night of which she knew nothing. Within the last week there has been difficulty in passing the tube, and four days ago after some whiskey and milk was administered through the tube, she suddenly collapsed, suffering severe pain in the side. Since then she has had very considerable pain with slight rise of temperature and has been gradually sinking. I had expected throughout the day when she collapsed that the tube would be followed on its withdrawal by a gush of arterial blood, and the attendants were accordingly warned. The growth has not extended down very far. There is a mass apparently shutting off the œsophagus completely. The growth has also invaded the larynx. In the right lung there was gangrene. Both lungs were adherent to the thoracic wall and the right pleura contained over a quart and a half of effusion with evidences of hæmorrhage also. In the left pleura there was about a pint of fluid. The left ventricle was hypertrophied. In the œsophagus the growth had extended almost to the diaphragm. She died without any symptoms of suffocation and the pain, which was paroxysmal in character, persisted to the last and was confined to the right side. I suppose it is impossible to say whether the tube went through the lung, but no perforation was found. The collapse came on while I was in the middle of a laparotomy and I was unable to see her until she had somewhat recovered, when the pulse, etc., [illegible] then it was hæmorrhage into the pleural cavity. There was no possible chance in this case for permanent tubage as the growth was so high.

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THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING of October 8, 1892.

A paper by **DR. C. P. STRONG** was read by the Secretary, entitled

THE INFLUENCE OF MORBID CONDITIONS OF THE UTERINE ADNEXA UPON REFLEX PHENOMENA.[1]

DR. WORCESTER said that this subject was one of great interest, and that very large experience was needed before we could properly deal with it. He wished to mention briefly one case similar to two of those that Dr. Strong had particularly described. A woman of thirty years, large and strong both mentally and physically, and of great use in the community, suddenly developed hysteria and became unmanageable. After caring for her for two years, he discovered that she was and had been an almost constant masturbator. She suffered great agony during the menstrual periods and had lost one hundred pounds in weight. An operation for removal of the ovaries was consented to, and it was performed by Dr. Elliot. For three or four years following this there was no improvement; and she masturbated as much as ever, so much so that he kept her for a long time, without avail, in a strait-jacket. Some four years after the operation she began to improve, and is now nearly well. He is decidedly of the opinion that the removal of the ovaries was of no benefit in this case at all; and from his experience he believes that removal of the ovaries for nymphomania is not to be recommended, any more than removal of the testicles for masturbation in man.

DR. C. M. GREEN said as regards the last point, he remembers a report of a case of removal of the testicles for masturbation without any effect.

DR. A. D. SINCLAIR believed that nymphomania was entirely a mental affection, and after it had become a fixed habit, there was no use in removing all the genitalia.

DR. F. H. DAVENPORT said that the subject was still agitating the minds of the profession and he did not believe it was possible to come to any certain conclusion owing to the comparatively small number of cases yet recorded. In the majority of those cases of nymphomania where removal of the ovaries and tubes is followed by good results it may be the case that any operation would have been successful. Dr. White, of Philadelphia, has collected a large number of such cases where an operation *per se*, as for example stretching the cervix, is followed by happy results.

The case he had seen with Dr. Strong which was described in the paper, should not, it seemed to him, serve as a text for operation. In one of his cases which had become almost unmanageable, dilatation of the cervix and the wearing of a plug was at once followed by cure. This he cited as an example of the good effect in some cases of any operation on the uterus.

DR. J. G. BLAKE agreed with Dr. Davenport that the single operation of dilatation and curetting with packing was often followed by most excellent results. It is only by the report of every man's experience in this difficult subject that we can arrive at any conclusions.

DR. J. G. BLAKE reported through his house-officers, Drs. Bowen and Bryant

FIVE MONTHS' WORK IN THE UTERINE WARDS AT THE CITY HOSPITAL.

DR. C. E. STEDMAN remarked on the absence of cases of vesico-vaginal fistula so common in former years before the ready use of the obstetric forceps. But he is inclined to think we see many more cases of lacerated perineum nowadays from this same cause.

DR. C. M. GREEN said he had the honor of doing the only operation for vesico-vaginal fistula on the medical side of the City Hospital in the last six years. He had seen Dr. Bradford operate once for the trouble on the surgical side. Even if we have more cases of lacerated perineum nowadays owing to the use of the forceps, there is this to be said, that a lacerated perineum causes far less discomfort than a vesico-vaginal fistula and is much easier cured.

DR. BLAKE said he had not seen a case of vesico-vaginal fistula for ten years.

As regards the case of death from hæmorrhage from the small cut in the vestibule, the post-mortem showed that a small artery had been severed. The cut itself was very small just going through the mucous membrane. The patient was moribund on entrance and all hæmorrhage had ceased.

DR. GREEN mentioned a case that was much exsanguinated by a slight tear of the vestibule from coitus.

DR. WASHBURN spoke of two cases to illustrate how much bleeding could occur from a minute injury. In the first case, a virgin, on inserting a pessary a slight nick was made from which the blood spurted freely. It was necessary for him to tie both ends of the artery.

Another case was aspirated for ascites through the abdominal wall. The patient grew pale gradually, her pulse went out and she died in twelve hours. At the autopsy it was found that a bleeding had taken place between the peritoneum and the abdominal walls, which was sufficient to cause death.

DR. SINCLAIR thought that poor midwifery, while responsible for vesico-vaginal fistulas in the past, was also responsible for torn perineums.

DR. C. W. TOWNSEND said he had this summer seen two cases of profuse bleeding from a small nick in the anterior part of the vestibule made during delivery. One was in the Lying-in Hospital, the other in private practice. Both needed suturing to stop the bleeding. In the case seen outside, a good sized artery spurted blood so freely, that he could easily see that a fatal result might have soon come without treatment. The hæmorrhage was easily stopped by pinching together the two sides of the tear which was about half an inch long and then suturing it with cat-gut. The tear was between the clitoris and the meatus in the median line.

THE NEW LAW FOR THE REGULATION OF MEDICAL PRACTICE IN FRANCE, which, as we recently announced has passed both legislative chambers, was formally promulgated by the President of the Republic on December 1st. The law will therefore come into force on December 1, 1893.

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[1] See page 38 of the Journal.

Recent Literature.

The Anatomy of the Peritonæum. By Franklin Dexter, M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, New York. With thirty-eight illustrations. New York: D. Appleton & Co. 1892.

This excellent little book is something decidedly new. What is more, it meets a want. The complicated arrangement of this greatest of serous membranes has always been a bugbear to students, and not to them only. Dr. Dexter modestly disclaims any originality. His purpose is to make the arrangement intelligible by studying the development of the digestive organs and of their mesenteries. He says in his preface: "I believe it was Professor Toldt, of Vienna, who first gave the true description of the development of the peritonæum. . . . It seemed to me that if one should take his description as a basis, make many more plates than he gives in his work, and so take the student along, step by step, in the most elementary way, he would not only be able to follow the description with comparative ease, but in the end would have an understanding of the subject." Such is the task which the author has undertaken; it is for us now to see how he has accomplished it. There are thirty-eight diagrams, nearly every one of which has a page to itself, neatly drawn in outline and most of them partly colored. The first shows the alimentary canal as a simple tube running in front of a red aorta. In the next there is a slight dilatation in the tube and a bend below it. In the next the sac is larger and the bend greater. Then we see certain outgrowths below the stomach and a certain complication in the bend. So far the diagrams have been in a sagittal plane. Now we have a series showing the twists of the intestines from the front, the red aorta still serving as a guide. Next come horizontal sections in which for the first time we see a green peritonæum. Thus it goes on to the end. Opposite each plate is a page with the description of it, which is always short, and often is comprised in a few lines. The work is admirably done, slowly and clearly. The paper, plates and type are all of the best.

What pleases us above all in the book is that it is intended to teach the student as an instructor would teach a single student sitting beside him. The student is treated as a rational being. The instructor points out, and the student follows by strict attention and by study. If any one expects with the help of this book to learn the peritonæum without study we advise him to save his money. It is essentially different from the wretched compendiums which give words and no ideas. While there are some points about which we could offer suggestion, they are few and of no great moment. We prefer to let them pass, and simply to congratulate the author on his success. There are other difficult chapters in anatomy to which we should be glad to see him apply the same method. T. D.

Human Monstrosities. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania, and George A. Piersol, M.D., Professor of Histology and Embryology in the University of Pennsylvania. Philadelphia: Lea Brothers & Co.

This superb work is to appear in four folio parts, of which three parts have already been issued. The authors have sought to present in concise and convenient form a treatise on Teratology which the obstetrician and pathologist can consult for an explanation and classification of the graver anomalies in development occasionally met with in medical practice.

So far as we know there has hitherto been no comprehensive work on this subject in the English language, the literature of the subject in English being scattered and not always easy of access. The standard works which have thus far been the physician's chief source of information on Teratology are those of Geoffroy Saint-Hilaire, of Förster, and of Ahlfeld, which deal with the subject systematically and exhaustively. But the use of these works requires a ready knowledge of French and German and a greater expenditure of time, naturally, than the pursuit of the subject in the vernacular; and the authors of the work before us have placed the English-speaking profession greatly in their debt by undertaking what must have been largely a labor of love, and by producing a work which certainly fills a gap in Engish medical literature.

The work is clearly printed by Dornan, on heavy paper, folio, with wide margins, and is a credit to the book-maker's art. Each of the four parts contains a portion of the text, illustrated with numerous wood-cuts, gathered from various sources, and a number of full-page photographic reproductions of many of the characteristic kinds of malformations. These reproductions were obtained from the rich collection of human monstrosities in the Wistar and Horner Museum of the Medical Department of the University of Pennsylvania, of which the authors were able to avail themselves. These plates are beautifully executed, and add greatly to the value of the work.

Part I contains eighty-eight pages of text, with eighteen wood-cuts, and seven photographic plates. The subject of classification is first treated, the system of Geoffroy Saint-Hilaire being adopted as, on the whole, the most satisfactory, but with certain changes in accordance with the more recent works of Förster and of Ahlfeld. Then follows a section on the mode of formation of developmental anomalies, which are grouped, with regard to their mode of production, as follows:

(1) Those produced by variations in growth, either excessive or arrested.

(2) Those produced by the defective union of component embryonic parts.

(3) Those produced by cleavage, either partial or complete, of the primary embryonal cell-masses.

The etiology of malformations is then considered in detail under the above heads. The authors next proceed to the description of malformations, and in this part treat the hemiterata, the condition known as heterotaxis, hermaphroditism, and begin the description of monsters.

Part II contains twenty-four pages of text, in which the description of monsters is continued: the text contains twenty-five wood-cuts, and there are thirteen of the full-page photographic reproductions.

Part III completes the description of the single monsters. The consideration of composite monsters is then begun, under which head are included all specimens showing some degree of duplicity in the main regions of the body. There are thirty-four wood-cuts in the text, and the part closes with nine photographic reproductions.

We presume that Part IV will soon appear and complete this highly creditable work. C. M. G.

THE BOSTON

Medical and Surgical Journal.

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THE INJECTIONS OF ORGANIC LIQUIDS AND THEIR UTILITY IN THERAPEUTICS.

IN a recent article "On the Progress of Therapeutics in 1892"[1] the introduction of the injections of organic liquids as being an advance-step in the treatment of certain nervous diseases, and in particular of locomotor ataxia and neurasthenia, is discussed by Dujardin-Beaumetz.

Since the date of Brown-Sequard's first communication (June, 1889), there has been great progress, both in the preparation of these organic liquids and in their therapeutic applications.

To-day, thanks to Arsonval's sterilizing methods and painstaking *technique*, organic liquids which are absolutely aseptic can be obtained, and are furnished by a sufficient number of reliable pharmacists. If syringe and needle are sterilized and suitable care be taken these injections cause no local irritation, or, at least, no harm.

Dujardin-Beaumetz has the past year made in Cochin Hospital a great many of these injections, using either Arsonval's organic liquids, or such as were made in the Cochin laboratory. In not a single instance was the injection attended with any local inflammatory accident. The greatest danger results from an alteration of the liquids; hence, it will not do to use solutions that are at all turbid. The injection material is now put up in vials hermetically sealed, there being just enough in each vial for one injection.

For the testicular liquid vaunted by Brown-Sequard there have been of late substituted macerations of the brain and cord, introduced by Constantin Paul under the name of "nervous transfusion liquid"; then extracts of the thyroid gland, the pancreas and the kidney. As to the effects of these injections, good observers declare that there is no difference between the action of the testicular extract and that of the spinal marrow, prepared as Constantin Paul advises. This action is summed up in one sentence: "the tonicity of the entire economy is improved." This, says Beaumetz, is undeniable, and is remarked alike by patients without as by those with organic lesion.

In patients afflicted with cerebral or spinal sclerosis who have been treated by injections of gray nerve-matter there is prompt disappearance of their pains, and especially of the *douleurs fulgurantes*. In multiple sclerosis the tremblings are alleviated. Dujardin-Beaumetz would not be willing to affirm that a positive *cure* has in any single instance been obtained, although Brown-Sequard at a late meeting of the Society of Biology declared that complete cure in locomotor-ataxia was the rule where the testicular injections have been used. Beaumetz is disposed to doubt whether the cases to which Brown-Sequard refers as cured were really cases of sclerosis of the brain or cord. It is well known that hysteria furnishes instances of pseudo-ataxia and pseudo-sclerosis.

It may be, with still greater reason, maintained that the pretended cures of cancer by the injections of organic liquid are cases of mistaken diagnosis; what can, however, be affirmed, is that in certain cases of marasmus at advanced periods of cachectic diseases, cancer, cholera, etc., tonic effects amounting to a remarkable amelioration have been obtained.

In neurasthenia and nervous prostration from overwork, and in hysteria, injections of these animal extracts have given especially gratifying results.

Physiologists and physicians are naturally puzzled as to the *modus operandi* of these injections; in fact, the exact composition of the organic liquid is unknown, and it is not possible to conjecture what element, if any, produces the favorable therapeutic results.

Hence, attempts have been made to get rid of the difficulty by employing some one isolated principle obtained from the animal extracts. Much has been written about Poehl's *spermine*, designated as the true remedial agent of the testicular liquid, and which Rostchinin in the *London Medical Record* declares to be "true spermine," having used it to advantage in nervous affections, diabetes, pulmonary tuberculosis and collapse, and for which he predicts a brilliant future. Another attempt in the same direction has been made at Brussels by Crocq, who makes use of the neutral phosphate of soda in two per cent. solution in cherry laurel water; he injects from one to two cubic centimetres of this solution, and claims very powerful tonic effects. He affirms that these injections have the same effects as the testicular liquid or Constantin Paul's maceration of gray nervous-matter, being curative in purely functional, and truly palliative in organic affections of the nervous system.

Dujardin-Beaumetz remarks how difficult it is to decide as to the value of these organic liquids. There have not yet been a sufficient number of clinical trials to warrant a deliberate and definite judgment. But if any *a priori* reasoning is admissible in considerations of this kind, it must be admitted that the principle on which this medication is founded is very strange. To inject in a diabetic patient an organic liquid from the pancreas, or in a patient affected with urinary insufficiency, a glycerite extract from the kidney of an animal, can neither, in the one case, restore to soundness the atrophied pancreas, nor in the other the altered and cirrhosed kidney; one cannot but think that in such cases something in the nature of hypnotic suggestion has had something to do with the result. The notion that one may by such injections restore or make compensation for an organ diseased or destroyed is absurd.

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[1] Annuaire de Thérapeutique, 1892.

But the appeal must be made to clinical facts, and the new methods must be tested under much more rigorous conditions, with carefully selected typical cases, before we can definitely judge of their merits.

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ON THE PHYSIOLOGY AND PATHOLOGY OF BLOOD DESTRUCTION.

In the interesting series of lectures on the above topic, published in the *Lancet*, Dr. William Hunter teaches that the spleen is rather a hæmolytic than a hæmatopoietic centre. The spleen is a very active agent in withdrawing effete blood-corpuscles, and contains more pigment-débris than any other organ. The bone marrow has a similar though much less important function. The chief function of the liver is not in inducing hæmolysis, but in getting rid by excretion of the products of hæmolysis. Amongst the most abundant of these is hæmoglobin, which is eliminated as bile pigment.

This is contrary to the old view which assigned the principal rôle in hæmolysis to the liver.

Dr. Hunter has removed the spleen in a great many animals. The operation was generally well borne. There was in all a lessening of formation of bile pigment, and a general retardation of hæmolysis, as indicated by the toluylendiamine test,

One question has been settled by Dr. Hunter's investigations; the amount of blood pigment in the spleen or liver is no criterion of their relative activity in hæmolysis. This is especially the case where that pigment lies within the liver cells. Pigment in this situation is merely an evidence that hæmoglobin has been broken up within the liver cells; it does not afford any clue as to where it has been set free, whether in the circulation generally, or in another organ, as the spleen, or in the capillaries of the liver.

During active hæmolysis, there is an increase in the circulating blood of colorless albuminous granules and spherules of varying size, products of disintegration of plasma and of red corpuscles, the smallest of them closely resembling Hayem's hæmatoblasts. These, according to him, are derived partly from the red corpuscles, the protoplasmic stroma of which can be seen oozing out in droplets and floating away free in the form of small spherules; partly, and very largely from the plasma itself. He regards the "blood plates" as more probably products of corpuscular disintegration than of new blood formation.

Of all the blood poisons, none proved more active and more interesting than toluylendiamine. A dose of two and a half grains kills a cat in a few hours with intense jaundice and hæmoglobinuria; rabbits are little susceptible to its action. Small doses cause increased formation of blood pigment in the liver, spleen, and bone marrow; larger doses, the appearance in the blood of an excess of the albuminous granules above alluded to, with large numbers of stromata (decolorized red corpuscles) and "schatten" (small vesicles of unknown derivation). It was chiefly by experiments with this drug that Dr. Hunter found the spleen to be the chief seat of active hæmolysis.

In all cases of poisoning by this drug, the greatest degree of change was found in the blood of the portal as distinguished from the general circulation, and especially in the spleen and splenic vein. Had the changes been always found in the liver as well as within the spleen, one might have referred their presence in these situations to the *scavenging function* which is performed by these two organs. The spleen was, however, in Dr. Hunter's experiments, the chief and sometimes the exclusive seat of the various products of disintegration. The greater number and variety of the evidences of hæmolysis in the spleen, as compared with those in the liver, or in the blood elsewhere, seemed to point to that organ as the principal hæmolytic centre. To all students of physiology who are especially interested in the still obscure subject of the physiology and pathology of the blood, we commend these lectures of Dr. Hunter.

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TYPHUS FEVER IN NEW YORK.

The outbreak of typhus fever has proved somewhat more serious than was anticipated. On January 4th there were 6 deaths from it, and 23 new cases were reported. On the following day, however, the number of new cases was reduced to 10 and the deaths to 3; and on January 6th there were but 4 new cases reported, although there were 3 deaths. From December 1st to January 8th there were in all 110 cases, with 18 deaths. The origin of the disease has not been determined; but Dr. Roberts, chief of the Bureau of Contagious Diseases, is inclined to believe that it was brought by way of Texas from Mexico, in some parts of which typhus is now said to be epidemic. With a few exceptions, the cases have been confined to the frequenters of the down-town lodging-houses. Among the exceptions have been two female inmates of the almshouse on Blackwell's Island, and it is not known how they contracted the fever.

At a meeting of the Board of Health held January 4th, it was resolved to appoint thirty extra sanitary inspectors to serve for thirty days, provided the money for their payment, $3,000, could be secured from the city; and on the following day, on the assurance of the mayor that the necessary funds would be forthcoming, the new inspectors were appointed. This, of course, places the Board in a position to cope much more successfully with the disease. One great source of danger is the destitute lodgers at the various police stations. Many cases occur at Bellevue Hospital and one of the nurses there has already been attacked with typhus. In view of the exigencies of the situation, the medical board of the hospital at a recent meeting resolved to turn the erysipelas pavilion into a reception ward for suspected typhus cases.

MEDICAL NOTES.

Cold Weather in Europe. — The northern States of the Continent, and Austro-Hungary have suffered much during the past weeks from intense cold, which has been nearly as severe as it was two years ago.

A Cholera Fright in Arkansas. — It was widely reported during the past week that epidemic cholera had appeared in a penitentiary at Little Rock, Ark. An investigation by surgeon Geddings of the Marine-Hospital Service proved that it was not that disease.

Typhoid Fever in Chicago. — The number of deaths from typhoid fever in Chicago during the past year was 1,479, a little better showing than in 1891, when the number was 1,987. In New York, which is about fifty per cent. larger, the number was 400. The four-mile tunnel into Lake Michigan has recently been completed; but the canals which are to drain the Chicago River away from the lake are not yet finished, so that a large amount of sewage is still poured into the lake.

The Health of Cuba. — A committee of Congress sent to Cuba to investigate the methods of dealing with epidemic diseases, especially to see if immigration from that island to the United States was a source of danger, will, it is said, report that great care is being exercised there to exclude disease and to provide means for controlling it should it come. A good deal of migration between Key West and Cuba was found, mainly confined to cigar-makers who work first in America and then in Cuban territory, as the state of the markets and demand for their services may suggest. The committee will report that there is little, if any, European immigration into the United States via Cuba.

The Senate Immigration Bill. — A bill has been introduced in the Senate, which may supplement the House bill. It excludes four classes of immigrants not now excluded: (1) persons over twelve who cannot read and write their own language; (2) sufficient money to provide for comfortable support for two months; (3) persons blind, crippled, or otherwise imperfect, unless they are sure of an abundant support; (4) members of anarchist societies. The bill also provides for consular certificates, and requires more cubic space per passenger on steamships.

The House Bill for a National Quarantine. — The bill agreed upon by the sub-committee of the House is a sort of half-way measure, not placing the quarantine of the country under full charge of the Federal Government, but giving the Marine-Hospital Service a supervisory and supplementary power over the regulations of the different States. The Marine Hospital Service is given power to enforce laws and regulations in such States as have quarantine requirements. Where there are no State quarantine regulations, or where, in the opinion of the Marine-Hospital Service, the State regulations are insufficient to pervent the introduction of contagious diseases, a report is to be made to the Secretary of the Treasury, who may give additional power to the Marine-Hospital Service. The bill also provides for consular inspection at foreign ports by sanitary experts. The President is empowered to suspend immigration whenever he considers that there is danger of an introduction of an infectious disease. A bill very like the above has passed the Senate.

NEW ENGLAND.

Scarlet Fever in Boston. — Although there is a large number of cases of scarlet fever in the city, and the special ward at the City Hospital is full, the number is not greater than is common at this season of the year, and the disease cannot in any way be considered epidemic.

Massachusetts Cattle. — In spite of the care taken in this State to protect the public against tuberculous cattle, the cattle commissioners of Maine have continued the quarantine against Massachusetts cattle.

Feeble-minded Children at the Schools. — The Massachusetts Supreme Court has given a decision that the school committee of a city or town has the right of final judgment in deciding whether a child is too feeble-minded to be allowed to attend a public school: "Whether certain acts of disorder so seriously interfere with the school that one who persists in them, either voluntarily or by reason of imbecility, should not be permitted to continue in the school, is a question which the statute makes it the duty of the school committee to answer, and if they answer honestly in an effort to do their duty, a jury composed of men of no special fitness to decide educational questions should not be permitted to say that their answer is wrong."

NEW YORK.

St. John's Guild. — The annual meeting of St. John's Guild was held January 3d, and the reports made show an advance in the various departments of work and a considerable enlargement of the Guild's operations during the past year. The principal new enterprise undertaken was the establishment of a small hospital for children in the west side of the city. In his address, the president, Dr. C. A. Leale, said that it was hoped in time to have a central hospital of some size, with a number of smaller auxiliary hospitals in the crowded tenement districts. During the summer the floating hospital made 41 trips, carrying 43,584 mothers and children, and 1,138 patients were treated at the Guild's Seaside Hospital.

Mortality in 1892. — During the year 1892 there were reported 44,317 deaths, against 33,650 in 1891. Owing to the increase in the population, however, the annual death-rate was 24.25 per thousand inhabitants, while in 1891 it was 24.73. During the year the deaths from phthisis were 5,005, and from accidents, 1,571. There were 320 deaths from sun-stroke, while in 1891 there were but 95. The number of reported cases of some of the more prominent contagious and infectious diseases was as follows: Scarlet fever, 6,947; diphtheria, 4,636; measles, 12,694; typhoid fever, 1,129; typhus fever, 206; small-pox, 367; cholera, 10. During the year the officials of the Board of Health vaccinated 142,050 persons, and seized and destroyed 5,128,614 pounds of food unfit for use. There were reported 49,437 births, as against 46,904 in 1891.

PROTECTION AGAINST CHOLERA. — In his annual message, just submitted to the Legislature, Governor Flower urges that body to make ample preparation against a possible invasion of cholera during the approaching spring and summer; stating that the scenes attending the steamship passengers at quarantine last September should not be allowed to occur again by reason of any lack of quarantine facilities. While not opposed to a national quarantine, the Governor expresses himself as opposed to one exclusively national.

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Miscellany.

THE EPIDEMIC OF CHOLERA IN PARIS.

DR. JOHN McGREGOR gives an interesting account of the disease, which has existed in Paris and its suburbs during the past summer.[1] During the seven months from April to November more than 1,700 persons died from this epidemic of cholera, or choleriform diarrhœa. On the 4th of April an old man was brought to the Maison Nanterre with symptoms of this disease, and the next day it broke out in the institution. The disease was so fatal that forty-four persons died out of fifty-four that were attacked. About the same time the malady broke out in many neighboring communities on the Seine and the north of Paris. At this time investigations showed the presence either of the comma-bacillus or of one which resembled it greatly. Exactly what relation this outbreak bore to true Asiatic cholera has been the subject of much discussion in Paris. Throughout the epidemic the number of cases becoming suddenly grave, called *foudroyant*, has been very large. They have been divided into two groups, the lighter forms called cholerine, choleriform, etc., and the grave or pernicious forms. In the suburbs the distribution of the disease bore a relationship to the Seine, the places attacked were near the Seine at a point where it is much contaminated, or in places farther from the river where the water-supply was bad.

The medical men of Paris appear to be divided into two classes, known as the contagionists, and the anti-contagionists. The contagionists argued for the necessity of the comma-bacillus, their opponents, of whom Professor Peter appears to be the mouthpiece, maintain that it can arise spontaneously under special conditions. In an address before the Academy of Medicine Peter argued that three different microbes had been found, — the bacterium coli commune, the comma-bacillus of Koch, and the comma-bacillus of Finkler. He also appears to believe that the bacterium coli commune may be responsible for cholera, dysentery and typhoid fever. From this he reasons that it is not the microbe in itself which is harmful but that certain microbes may acquire new properties, that is, borrow properties by modifications of the society in which they grow. In the case of cholera the bacillus has bestowed upon it morbific powers in the intestines which may be conveyed by it to others. His conclusions are in brief that the cholera patient is poisoned by ptomaines or other toxines which are formed in the digestive tract, and poison at the same time the individual and his bacteria, and that his bacteria may transmit the poison to others. The idiosyncrasy of the person attacked determines the form of the malady, that is, gives the difference between the symptoms found in cholerine, cholera nostras and Asiatic cholera. Contagiousness is not denied, but predisposition and more or less prolonged contact are demanded.

The believers in the specific action of the comma-bacillus did not believe that the disease was imported but most of them believe that it was a revival of the former epidemic. They differ from Professor Peter especially in considering that the disease is highly contagious and less due to atmospheric and other external causes.

As far as bacteriological investigations have been carried, they seem to show that some of the cases contain either the comma-bacillus or one very much like it, while other cases do not. The latter, however, all contain the bacterium coli commune and occasionally other micro-organisms different from those usually found. There often was no very clear connection between the presence of the comma-bacillus and the severity of the attack. Four principal theories of the cause of choleric symptoms were brought forward, roughly, as follows: The cardiac, where it is supposed that the action of the heart is interfered with reflexly from the intestines; the nervous theory, which assumes an involvement of the great sympathetic, causing spasm of the muscles supplied by it, and by further development involving the spinal cord; the intestinal theory, laying principal stress upon dehydration and intoxication by the cholera poison; and the double intoxication theory of Bouchard, who supposes a first poisoning from the intestines, and a second, of the nature of uræmia, from retention of waste products in the tissues. The author gives some typical cases and summarizes the principal methods of treatment.

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VENTILATION AT THE TOP AND AT THE BOTTOM OF ROOMS.[1]

THE impression, which is very common, and is even held by engineers, that impure air, on account of its superior weight, accumulates to excess in the lower parts of rooms, while the upper parts are free from it, and that ventilation should be applied near the floor rather than near the ceiling, is controverted in the *Sanitarian* by Dr. W. H. Thayer. The property of gases to diffuse and intermix with one another, irrespective of relative densities, is lost sight of by these authorities. Dr. Thayer finds that the carbonic-acid gas of respiration and illumination will eventually be equally diffused through the atmosphere, although it is retained at the upper part of a room as long as the high temperature continues; and that it never, under any circumstances, is precipitated in excess in the lower part of the room. This conclusion, partly drawn from the philosophy of the matter, has been amply verified by experiments. Dr. H. Cresson Stiles, of the Metropolitan Board of Health, having analyzed the air of many public schools, hospitals, theatres and churches, found the air taken from near the ceiling always more highly charged with carbonic acid than that in the lower parts of a room, with the difference often very marked. St. Ann's Church, Brooklyn, which was ventilated on the "bottom ventilation" theory, was found to be badly ventilated, with the carbonic acid in the gallery at the close of the service in larger quantity than near the floor. The ventilation of the hall of the old Brooklyn Institute was nearly perfect, and was all through large openings in the ceiling.

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[1] Glasgow Medical Journal.

[1] Popular Health Magazine, December.

PSEUDO DIPHTHERIA.

Dr. W. D. Booker gives an account of original work done at the Johns Hopkins Pathological Laboratory upon the membranes resembling diphtheria which occur especially in scarlet fever but also in connection with other acute affections of the throat.[1] These membranes are often extremely difficult to diagnosticate from diphtheria; but since the discovery of a specific organism of diphtheria their true character is becoming recognized. The membrane of scarlatina angina has a yellow color and cannot be stripped off in shreds. There is a tendency to ulceration and suppuration; adenitis is of more pronounced inflammatory character; redness and swelling are prominent; and purulent destruction of tissues frequent. Fever is active; and the relative proportion between the fever, general condition and local progress is of diagnostic value. There is a tendency to penetrate into the depth, and in protracted cases there is a great loss of tissue through ulceration. This is not true of diphtheria. A description of the micro-organisms found in the different processes is given, and the following conclusions drawn:

Pseudo membranous affections of the throat occur secondary to scarlatina, measles, and perhaps other infectious diseases, which often give the clinical features of diphtheria but which differ from this disease in nature and etiology. The clinical features are not sufficiently distinctive in all cases to differentiate these affections from diphtheria. The anatomical changes in the body resulting from the effects of the bacillus diphtheriæ have been carefully studied by different investigators and appear to be characteristic. A like careful study has not been made of the anatomical changes resulting from pseudo-diphtheric processes; but so far as this study has been made, it may be safe to consider the anatomical changes as entirely distinct from those of diphtheria. The anatomical changes, save the pseudomembrane, resulting from the effects of the bacillus diphtheriæ, are not occasioned by the direct action of the bacilli, which do not invade the body, but by a toxic substance produced by the bacilli. These changes are characterized especially by focal necrosis of tissues, with peculiar splitting of the nuclei of cells.

The anatomical changes resulting from scarlatinal diphtheria are accompanied with an invasion of the body by streptococci, and are largely suppurative processes which appear to be the direct effect of these organisms. Necrosis of the tissues also occurs in this disease, but a comparative study has not been made with the necrosis resulting from diphtheria. The etiological factor furnishes the certain criterion for the separation of diphtheric from pseudo-diphtheric processes, but even with this advantage, a differential diagnosis may be difficult in individual cases. Both measles and scarlatina render the tissues especially vulnerable to the diphtheria bacillus, and complications of diphtheria with these diseases are not uncommon. The constant occurrence of streptococci in pseudo-diphtheric processes, and in numbers proportionate to the degree of tissue changes, indicates a causal relation of the cocci to these processes.

This view is strengthened by the observations of Soerensen, that the cocci form the advance guard of the anatomical changes; that in quite fresh cases of scarlatinal diphtheria they have also penetrated deep in the mucous membrane; that they are scattered in the surroundings of lymphatic gland abscesses; that they form the advance guard of the infiltration in extensive phlegmon; and that in cases where infarction of the spleen and peritonitis occur together, they are found in the coating of the spleen. The streptococci found in pseudo-diphtheric angina have not been identified as one species or differentiated from other known streptococci; but it appears probable that different varieties of streptococci may occur in different cases of pseudo-diphtheric angina, and there is also some ground for the belief that certain varieties of streptococci are associated with the more serious cases of pseudo-diphtheric angina. This view of the causal relation of streptococci to scarlatinal pseudo-membranous angina has nothing to do with the specific etiology of scarlatina, of which we are at present entirely ignorant.

THERAPEUTIC NOTES.

Effects of Medicated Inhalations. — Irsai, as a result of observations in the laboratory upon the effects of inhalations of various substances upon the blood-supply of the air-passages and lungs, has found that air impregnated with the vapor of turpentine produces a distinct pallor; oil of juniper and pine-needle oil produce the same result to a less degree. Very little effect is produced by oil of eucalyptus, anise, peppermint and menthol. Creasote and thymol, and, still more, guaiacol, produce redness and hyperæmia.

Santonin Troches. — The *Pharmaceutical Record* calls attention to some dangerous troches popularly sold as "worm lozenges," or by some such name, as a domestic remedy for intestinal worms in children. The troche in question is a small cake of sugar, oval in shape, generally pink and flavored with wintergreen. As each one contains half a grain of santonin, it is not difficult to understand that poisonous doses are sometimes reported.

Shock. — Concerning the use of strychnine as a remedy for and preventive of surgical shock, anæsthetic collapse and opium-poisoning, Dr. H. A. Hare[1] advises that it be given in full doses or not at all. Not less than a twentieth of a grain should be used hypodermically every half-hour for an adult; and if the shock be marked, a dose of as much as a fifth of a grain may be given in this way. Disagreeable effects rarely follow, and will probably amount to no more than muscular twitching, which can be readily controlled by sedatives. In describing a visit to Professor Horsley's laboratory, he says that a monkey upon whom a brain experiment was being performed was placed in a water-bath and well covered to attain the proper heat. This is considered necessary for the survival of the monkey, and from it may be inferred that the application of heat about the body of a person undergoing an operation is of the greatest importance. The same is also true in cases of hemorrhage and shock. Experiments by Brunton show that animals poisoned with chloral die from doses, which, when artificial heat is given them, fail to produce dangerous symptoms.

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[1] Johns Hopkins Bulletin, October and November.

[1] Therapeutic Gazette, October.

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Correspondence.

[From our Special Correspondent.]

THE JUBILEE OF PASTEUR.

Paris, December 27, 1892.

Mr. Editor: — The jubilee tendered Pasteur on his seventieth birthday took place to-day in the Nouvelle Sorbonne, and was certainly the most impressive ceremony I have ever witnessed. The audience included everybody of note in the scientific world of Paris and many distinguished foreigners. On the platform were quite a number of “[illegible],” including Jules Simon and Joseph Bertrand, the president of the Academie des Sciences, members of the cabinet, representatives of various scientific societies and of the diplomatic corps. In the galleries, among the ladies present, were Madame Carnot and Madame Pasteur, together with other members of the family of the man who to-day is recognized as the most distinguished of living scientists.

Shortly after the hour announced for the opening of the ceremony Pasteur entered on President Carnot's arm and loud cries of “*Vive Pasteur*” rang throughout the hall. Carnot seated himself in a chair reserved for him in the centre of the platform, while Pasteur retired to the extreme right.

M. Dupuy, the minister of public instruction, was the first speaker, and referred, as did all those who followed him, not only to the immense benefit conferred upon humanity by the discovery of the antidote for rabies but to Pasteur's important researches in other branches of science aside from medicine. To say that the praise bestowed was lavish is to feebly express what seemed a spontaneous and heartfelt ovation rendered by men who are assuredly most competent judges of scientific merit. After Dupuy had concluded, M. M. Abbadie (president of the Academie des Sciences), Bertrand (secretary of the same), Daubrée (member of the Institute and formerly director of the Ecole des Mines), followed in rapid succession.

Pasteur's “absolute honesty,” as well as his ability and indefatigable industry and perseverance, was referred to by more than one of the speakers. The event which most profoundly impressed the audience (and I think also the recipient of the ovation) was the speech of Sir Joseph Lister, which did not fall an iota below the keynote of eulogy which prevailed throughout the entire ceremony. At its conclusion Pasteur shook his hands and kissed him on both cheeks, — an accolade which Lister received both gracefully and graciously, while the hall resounded with shouts of “*Vive Lister*” as well as “*Vive Pasteur*.”

After the speeches, addresses and medals were presented by representatives of scientific schools and societies of almost every civilized nation in the world *excepting the United States of America* “[illegible]” (as a distinguished French physician who sat next me mildly called it) of which I felt anything but proud. A touching incident was the presentation of a photograph of the humble cottage where Pasteur's parents live (“*si difficilement*” to quote his own exact words), by the mayor of Dôle, his native city.

At the conclusion of this last speech of the occasion Pasteur was [illegible] and to announce that his son would respond in his place. This the son proceeded to do in a short discourse in which he paid a [illegible] laboratory, [illegible] contrasted so strongly with the comfortable and appropriate surroundings provided for science by the public purse at the present day.

One sentence addressed to the foreign delegates deserves a quotation in full: “You bring to me the profoundest joy which a man can [illegible] science and peace will triumph over ignorance and war, that nations will form alliances not to destroy but to build up, and that the future will belong to those who shall have done the most for suffering humanity.”

Very truly yours, F. Gordon Morrill, M.D.

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RAGS AS A SOURCE OF CHOLERA INFECTION.

Boston, January [illegible].

Mr. Editor: — Will [illegible] gestions upon the topic above named, — which seem pertinent at the present time, when hasty government action has prohibited the importation of rags from countries where cholera is more or less prevalent?

In the first place, I wish to point out that of all the diseases communicable from garments or bedding, cholera is the least likely to be conveyed, for the reason that the dread of contagion in the localities where it is prevalent will prevent people from doing the inevitable handling necessitated by collecting, assorting and packing for exportation. *They* [illegible]

Again, the fact remains that, despite the immense consumption of rags, foreign and domestic, in this country, but very few cases of sickness have ever been traced to them. No sane pedler or chiffonier would collect rags that were likely to contain the germs of disease, and it must be remembered that the newly collected rags contain fresher and probably more active germs than when, after repeated handlings, they are baled for shipment.

A New York report [illegible] Brooklyn which had evidently come from a hospital. Will the medical profession here believe that foreign hospitals permit the sale of [illegible] in rags or his employees would run the risk of handling them?

Of all diseases, scarlet fever is the one which would be most readily transmitted in this way, for that occurs in isolated cases, and the bedding and clothing of patients is not infrequently preserved. Yet I have never known of a case of contagion from that source. The germs of typhus and typhoid must sometimes be present in collections made indiscriminately; but are there any records of those diseases being contracted from handling rags?

Now as to the process in paper-mills. The class of rags mentioned is usually subjected to a beating or thrashing in a machine (dry) before handling. This latter is rapidly done; and then, after another cutting and dusting, the rags are boiled with lime, — a process which must kill the average germ.

The community outside are not exposed at all, and it would be a very simple matter to have an inspection of the comparatively small number of paper-mill operatives, and take steps to prevent the spread of any contagious disease which might be contracted. The inspectors would have a sinecure.

Cholera is much dreaded; but we all know that intestinal diseases are produced by fright, — just as the dread of hydrophobia caused death in the case reported in your last number.

All measures of sanitation should guard against frightening the parties to be protected.

[illegible]

METEOROLOGICAL RECORD,

For the week ending December 31, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S...25	[illegible]	18	[illegible]	[illegible]	41	71	[illegible]	W.	S.W.	20	13	O.	O.	
M...26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	14	16	C.	C.	
T...27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	N.	[illegible]	12	F.	F.	
W...28	[illegible]	[illegible]	[illegible]	[illegible]	42	60	[illegible]	N.	N.W.	17	11	O.	O.	
T...29	[illegible]	[illegible]	[illegible]	[illegible]	65	52	[illegible]	N.	N.	14	7	O.	O.	
F...30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	70	N.W.	S.E.	7	5	C.	C.	
S...31	30.20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.W.	[illegible]	7	O.	O.	
Mean	30.03	[illegible]	[illegible]	[illegible]	57	60	[illegible]							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 31, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	[illegible]	[illegible]	[illegible]	15.08	[illegible]	1.56	8.06	1.04
Chicago . . .	[illegible]	—	—	—	—	—	—	—
Philadelphia .	1,092,168	—	—	—	—	—	—	—
Brooklyn . .	955,333	[illegible]	138	16.20	18.09	—	8.10	3.24
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	[illegible]	[illegible]	71	9.72	20.52	.72	6.48	1.44
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	128	46	[illegible]	25.74	1.56	4.68	.78
Cleveland . .	[illegible]	[illegible]	29	24.12	18.76	5.36	10.72	6.70
Pittsburg . .	[illegible]	—	—	—	—	—	—	—
Milwaukee . .	234,440	82	40	19.52	19.52	1.22	10.98	2.41
Washington .	[illegible]	106	27	13.16	14.10	4.70	5.64	—
Nashville . .	87,754	34	6	2.94	17.64		2.94	—
Charleston . .	[illegible]	32	8	3.13	12.52		—	—
Portland . . .	40,000	13	3		7.69	—	—	—
Worcester . .	92,313	[illegible]	10	18.41	18.41	—	2.63	2.63
Lowell . . .	82,455	[illegible]	14	30.58	11.12	19.46	8.34	—
Fall River . .	[illegible]	34	13	11.76	11.76	—	11.76	
Cambridge . .	74,644	29	7	[illegible]	23.15	—	3.45	—
Lynn	[illegible]	25	—	12.00	4.00	—	4.00	—
Springfield . .	[illegible]	24	6	12.48	24.96	4.16	8.32	—
Lawrence . .	45,910	33	15	18.18	21.21	—	3.03	12.12
New Bedford .	44,947	16	7	6.66	26.66	—	—	12.50
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,782	10	2	10.00	10.00	—	10.00	—
Salem	31,495	14	1	14.28	14.28	—	—	7.14
Haverhill . .	[illegible]	9	1	11.11	—	11.11	—	—
Chelsea . . .	29,479	14	6	14.28	28.56	7.14	7.14	—
Malden . . .	29,479	5	1	—	—	—	—	—
Newton . . .	26,498	—	—	—	—	—	—	—
Taunton . . .	26,464	12	2	8.33	8.33		—	—
Gloucester . .	26,008	[illegible]	2	—	—	—	—	—
Fitchburg . .	25,444	6	2	16.66	16.66	—	16.66	—
Waltham . .	[illegible]	1	0	—	—	—	—	—
Quincy . .	18,669	7	1	—	14.28	—	—	—
Pittsfield . .	18,294	1	1	—		—	—	—
Northampton .	15,684		2	—	—	—	—	—
Everett . . .	14,745	4	1	25.00	25.00	—	25.00	—
Newburyport .	14,031	[illegible]	5	[illegible]	—	—	33.33	—
Amesbury . .	13,561	[illegible]	0	—		—	—	—

Deaths reported [illegible]; under five years of age 725; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers), 315, acute lung diseases [illegible], consumption 214, diphtheria and croup [illegible], scarlet fever [illegible], typhoid fever [illegible], diarrhœal diseases 26, measles 17, whooping-cough 15, cerebro-spinal meningitis 12, erysipelas 6, malarial fever 3, small-pox 1.

From diarrhœal diseases New York 11, Cincinnati 4, Brooklyn 2, Boston, Milwaukee, Washington, Charleston, Worcester, Lowell, Lawrence, Salem and Taunton 1 each. From measles New York [illegible], Brooklyn 4, Boston 1. From whooping-cough Brooklyn [illegible], New York [illegible], Milwaukee 2, New Bedford 1. From cerebro-spinal meningitis Worcester 4, New York, Washington and Lynn 2 each, Brooklyn and Cleveland 1 each. From erysipelas New York 4, Boston and Somerville 1 each. From malarial fever Brooklyn 2, New York 1. From small-pox New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 31, 1892, TO JANUARY 6, 1893.

First-Lieut. Isaac P. Ware, assistant surgeon, U. S. A., is assigned to duty at Fort Sill, Oklahoma Territory, until further orders.

The leave of absence for two weeks on surgeon's certificate of disability, granted to **Captain Adrian S. Polhemus**, assistant surgeon, U. S. A., is hereby extended fourteen days from December 30, 1892.

First-Lieut. Frank T. Meriwether, assistant surgeon, is relieved from further duty at Fort Adams, R. I., and assigned to duty at Madison Barracks, New York.

PROMOTIONS.

Lieut.-Col. Charles H. Alden, deputy surgeon-general, U. S. A., to be assistant surgeon-general, with the rank of Colonel, December 4, 1892, *vice* Heger, retired.

Major Albert Hartsuff, surgeon, to be deputy surgeon-general, with rank of Lieut.-Colonel, December 4, 1892, *vice* Alden, promoted.

Captain Louis M. Maus, assistant surgeon, to be surgeon, with the rank of Major, December 4, 1892, *vice* Hartsuff, promoted.

RECENT DEATHS.

Francis I. Young, M.D, died in Bridgeport, Conn., January 6th, aged fifty-five years. He graduated from the Yale Medical College in 1866 and was, at the time of his death, president of the Bridgeport Board of Health

Ernest McNeill, M.D., of Morrisania, N. Y., died January 5th, of peritonitis, resulting from typhoid fever. He was born in Brunswick, Me., in 1842, and commenced practice in Morrisania in 1868. He was one of the organizers of the old Harlem Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

Outlines of School Hygiene. By Wm. H. Burnham, Ph.D., of Clark University. Reprint. 1892.

The Use of Menthol Through the Stomach-tube. By A. L. Benedict, A.M., M.D. Reprint. 1892.

Thirty-seventh Annual Report of the Trustees of the Northampton Lunatic Hospital for the Year Ending September 30, 1892.

Transactions of the Medical Society of the State of North Carolina, Thirty-ninth Annual Session, Wilmington, May 17, 1892.

Transactions of the New Hampshire Medical Society at the One Hundred and First Anniversary, held at Concord, June 20 and 21, 1892.

Syphilis and the Nervous System; The Lettsomian Lectures for 1890. By W. R. Gowers, M.D., F.R.C.P., F.R.S. Philadelphia: P. Blakiston, Son & Co. 1892.

Human Embryology. By Charles Sedgwick Minot, Professor of Histology and Human Embryology, Harvard Medical School. New York: William Wood & Co. 1892.

The Action of Dead Tubercle Bacilli and of Tuberculin upon the Animal Organism. By William Vissman, M.D. Translation by Henry T. Brooks, M.D. Reprint. 1892.

Conclusions Regarding the Use of Drainage-tubes and Ligatures, and the Possibilities of Skin Disinfection based upon Bacteriological Investigations. By Hunter Robb, M.D. Reprint. 1892.

Hand-book of Massage. By Emil Kleen, M.D., Ph.D., of Carlsbad, Bohemia. Translated from the Swedish by Edward Mussey Hartwell, M.D., Ph.D. Philadelphia: P. Blakiston, Son & Co. 1892.

A Hand-book of the Diseases of the Eye and their Treatment. By Henry R. Swanzy, M.B., F.R.C.S.I., Surgeon to the National Eye and Ear Infirmary, Dublin. Fourth edition. Philadelphia: P. Blakiston, Son & Co. 1892.

A Report of Five Cases of Chronic Mercurial Poisoning. Two Cases of Fracture of the Body of the Scapula. Ligation of the Internal Jugular Vein for Profuse Hæmorrhage caused by a Sloughing Adenitis, which followed Malignant Scarlet Fever. Fistula in Ano; General Considerations; Etiology; Symptomatology; Diagnosis; Prognosis. The Operative Treatment of Fistula in Ano. By Lewis H. Adler, Jr., M.D. Reprints. 1891-92.

Lecture.

VARIATIONS IN TYPHOID FEVER, WITH ILLUSTRATIVE CHARTS.[1]

[illegible]
[illegible] cal Society, etc.

Gentlemen: For the last ten lectures we have gone over together the subject of Typhoid Fever, and in addition you have followed me to the bedside where we have seen cases of typhoid clinically.

I offer no excuse for devoting this length of time to a subject of very considerable interest, and to a disease which you will be called upon frequently to treat; and I can only trust that, in the time that I have given to it, you have the most important features of the disease impressed upon your mind, so that in your practice in the future, you will make a diagnosis readily, and know what to do in treatment.

This morning I want to call your attention to some of the unusual forms touched upon in my previous lectures. I have spoken of the four pronounced symptoms: of the "pea-soup" stool, the temperature, the rose-spots and the enlarged spleen. With reference to the latter — the enlarged spleen — I have called your attention, at the bedside, in several cases, to the difficulty there is in outlining the size of the spleen because of the distention of the abdomen — the meteorism and tympanites. My own experience, as I have told you before, leads me to place much less emphasis upon this factor in the diagnosis of the disease than some authorities put upon it. With reference to the difficulty of outlining the size of the spleen, I can only add to my own statement the authority of Strümpell, who says: "The enlargement of the spleen can often be demonstrated as early as the end of the first week, and is therefore of considerable diagnostic importance; but percussion of the spleen is sometimes decidedly difficult and deceptive in this disease, because of the tympanites. The surest demonstration of splenic enlargement is always by means of palpation, which, after a little practice, gives a positive result in a majority of cases." This enlargement, then, does not occur until the end of the first week, and it is then difficult to outline because of the tympanites. If there is much abdominal distention — as is apt to occur in typhoid — palpation is difficult; and so I am inclined to say that this symptom of enlargement of the spleen is not of so very great importance in making a diagnosis. It is not peculiar to typhoid. It occurs in other acute infectious diseases. The existence of rose-spots I have been led to regard with more importance; but here again one should be careful in eliminating other eruptions and not mistaking simple erythemata for rose-spots. I have rarely seen a case of typhoid fever where I have not found the rose-spots in greater or less number. The "pea-soup" or, as it used to be called, the clay-colored stool, is of assistance; but I presume no one symptom has aided us so much in diagnosis of typhoid fever as the temperature chart. Dr. Stedman, in Third Series of the City Hospital Reports of Boston, published in 1882, in quite an elaborate discussion of the subject of typhoid fever, says: "The temperature of the body has come, since the general use of the clinical thermometer, to be the indication for treatment, diagnosis and prognosis." All the recent authorities place great emphasis upon this symptom of the disease. Strümpell says: "Observation of the temperature in typhoid is so absolutely essential for estimation of each individual case that no scientific physician ought to treat a case without regular measurement of the temperature"; and with other authorities he speaks of the stages of the disease, based very largely upon observations of temperature, namely, the stage of *Invasion* during the first five or six days; the stage of *Development*, in which the evening temperature rises a little higher than the morning, step-like, until about the end of the first week, when it reaches a height of 104° or 105°; the *Fastigium*, extending over a period of about two weeks; and then the stage of *Defervescence* or *Decline*.

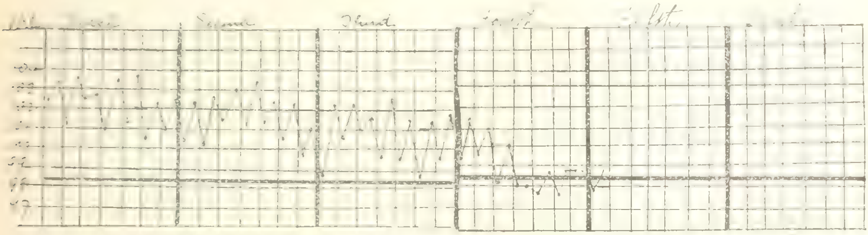

Chart I. Normal Typhoid.

Out of this division of the several stages of typhoid fever has grown the popular idea that it must necessarily, in each individual case, run this well-defined course; and the further popular idea — which I have spoken to you of as fallacious — that at the end of twenty-one days, a *crisis* is reached, at which time the patient either improves or gets worse. In my own experience this does not hold true.

With reference to the stage of development, it is seldom that we get a case of typhoid so as to observe that stage carefully. You will find by looking over most temperature charts of typhoid fever that they are very apt to start in at about the highest point. Sometimes we do get these cases early in the disease; but I think it is but rarely that you will see a case through the whole stage of development — through the whole of the first week.

The chart that I wish now to show you (Chart I), I have selected because it seems to me fairly typical of a normal case of typhoid fever. It was one of three cases[2] occurring in the same house at the same time.

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[1] A lecture delivered to the Senior Class of the Medical Department of the University of [illegible]

[2] Charts I, V, and X.

As marked here, it is the illness from the time that the man went to bed. This case I really did see in the stage of development — not all through, because I thought at the outset that it was one of those not unusual cases of abortive typhoid fever, where the temperature subsides in a few days to normal, and where the man recovers from what apparently was but a simple case of so-called biliousness. Later on, he went to bed, and I was called in to see him. The disease ran its course of four weeks. Here you will see (indicating) three and a half weeks until it got to the normal temperature and without any complication. It was about as typical a case of typhoid fever as you will often see.

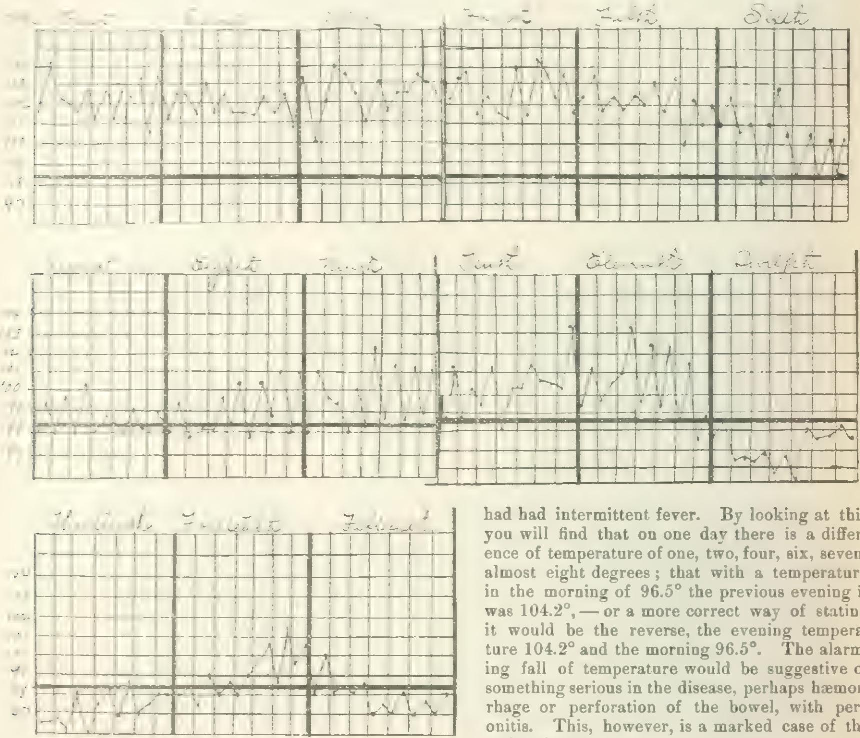

CHART II. Prolonged Relapse.

We have all kinds of variations from the normal.

I present to you now a chart of a case of peculiar interest, where, instead of running a course of three or four weeks it extended over nine, ten, fifteen, sixteen weeks, or one hundred and sixteen days, rather knocking out the theory of "running a typical course of typhoid fever." The man had what might be called two distinct relapses. There is very marked in this chart (pointing) something I wish to call your attention to, namely, sub-normal temperatures in the stage of convalescence. I do not recall having seen it mentioned in the books, but in this chart the temperature ran down to about 95.5° sub-normal; it stayed sub-normal for ten days, and then in the second period it became sub-normal again. I show you this chart in contrast to the first, to demonstrate the fact that typhoid fever may run even one hundred and sixteen days.

There is a type of typhoid often spoken of as typhomalarial. It is not so common with us in this Western country, more frequently occurring back in malarial regions. In these cases the extremes of temperature are very marked, showing great depression in the morning and great elevation in the evening. I have a chart of this nature, — a patient at the County Hospital who at some previous time had had intermittent fever. By looking at this you will find that on one day there is a difference of temperature of one, two, four, six, seven, almost eight degrees; that with a temperature in the morning of 96.5° the previous evening it was 104.2°, — or a more correct way of stating it would be the reverse, the evening temperature 104.2° and the morning 96.5°. The alarming fall of temperature would be suggestive of something serious in the disease, perhaps hæmorrhage or perforation of the bowel, with peritonitis. This, however, is a marked case of the malarial type.

One of the complications — perhaps I should correctly say, one of the grave symptoms — of typhoid, is marked nervousness, taken with a mild form of *subsultus tendinum* — that picking at the bed-clothes that is called *carphologia*. With this is associated more or less delirium at night, perhaps requiring that the patient should be very closely watched to prevent his getting out of bed; in some cases they run away. I have a chart representing that form of typhoid, with *subsultus tendinum*. Now, this nervousness may begin in a pronounced form and go on to absolute stupor, or what is known as *coma-vigil*, in which the patient is absolutely unconscious. There may be great twitching as in the case of Dr. K——, which I have been reporting to you from time to time; working of the lips, tonicity of the muscles, and what is of very great importance in this disease, especially when ac-

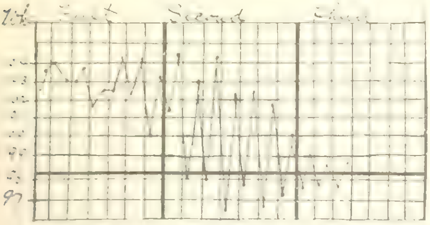

Chart III. Typho-Mania.

companied with a high pulse, as it is apt to be, flickering of the pulse and high temperature. I show you a chart of this character, Dr. K——'s own case. You will see that the pulse ran up to 140 and the temperature to 104.5. For two weeks he was unconscious. The case was marked by extreme nervousness, delirium, jerking of the hands and arms, great tonicity of the muscles and *coma-vigil;* he even passed his stools and urine involuntarily in the bed.

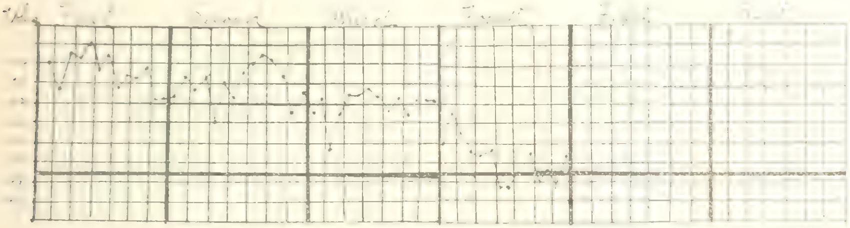

Chart IV. Typhoid with marked Nervousness.

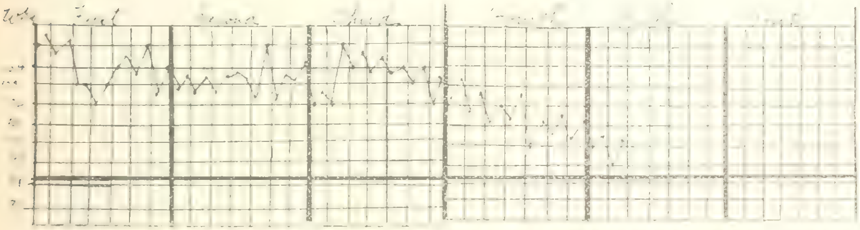

Chart V. Typhoid with Coma-Vigil.

A more marked case, possibly, of the same affection of typhoid with great nervousness, is a patient at the County Hospital, a young Dane, twenty years old, who for more than two weeks was lying in an absolute stupor in the ice cage. His stupor — his *coma-vigil* — was much more marked than that of the previous case; the stools were more frequent, and they were passed involuntarily, and also his urine. I have here his chart.

You will see that despite his stupor there was a very gradual decline. The stupor extended over something like three weeks. The indication for treatment in such cases, as I have pointed out to you before, is stimulation. Each of these patients got an ounce of whiskey every hour. If they could not retain it by the mouth, it was given by enemata. Heart stimulants were administered freely, and strychnia was given hypodermatically. The temperature was kept down, in the one case, by the ice cage; in the other case by constant sponging.

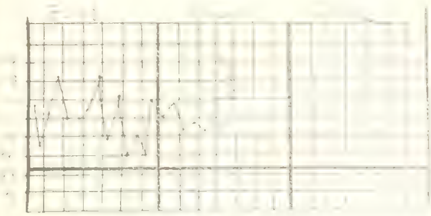

Chart VI. Typhoid with Hæmorrhage.

One of the most distressing forms of complication of typhoid, is hæmorrhage of the bowels. This is more apt to occur in the earlier part of the third week, when the slough from the ulcers is given off. It is attended with collapse, rigor, it may be with cold sweats. The pulse usually runs up rapidly, very high, then it grows more feeble; and if the patient dies, it fades out. I have in my hands a chart illustrative of typhoid with hæmorrhages, — a young Swede who was of a hæmorrhagic tendency.

This case was complicated by frequent nose-bleeds. I seldom went there but I found his handkerchief stained with blood. He had a relapse one day; his pulse went up to 160. The hæmorrhage was followed by a second and third; and in a short time he died.

I have another chart in which the hæmorrhage occurred much earlier in the disease.

This chart was from one of the three cases which I spoke of as occurring in the same house, — the case of a young woman, who had marked dilatation of the heart, with mitral insufficiency. The case was extreme, and from the start was marked with great nervousness, complicated by her enfeebled heart-action, and terminated fatally at about the end of the second week, with hæmorrhages.

Peritonitis or perforation of the bowel is another complication of grave significance, by most authorities regarded as more grave than a hæmorrhage of the bowel. Unfortunately, I have no chart of this condition to show you. I can only cite the history of a case that I had under my observation some four years ago of a woman who, in the course of typhoid fever, in the third week, as I recollect, had three distinct rigors, of great intensity, with collapse followed by undoubted peritonitis. A very extreme case, but finally recovering.

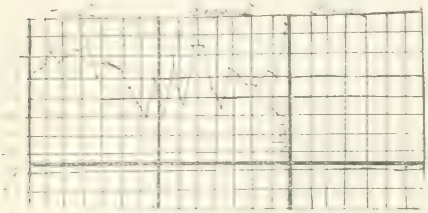
Chart VII. Typhoid with Heart Disease. Hæmorrhages. Death.

I have seen but a few cases of perforation.

(To be continued.)

Original Articles.

PROTECTIVE INOCULATIONS IN INFECTIOUS DISEASES.[1]

BY GEO. M. STERNBERG, M.D.,
Deputy Surgeon-General, U. S. A., Chairman of the Committee of the American Public Health Association.

(Concluded from No. 2, page 34.)

We have for some time had satisfactory experimental evidence that susceptible animals may be made immune against certain pathogenic bacteria by inoculating them after the method of Pasteur, with "attenuated cultures." This has been shown, by the savant named, to be true of anthrax, of rouget, and of chicken cholera; and protective inoculations against these diseases have been practised to a considerable extent in France and in other European countries in which these diseases prevail to such a degree as to call for such a measure of prophylaxis. But it is still a question whether from a practical point of view this method is to be preferred to the isolation of infected animals and the destruction of the infectious material. Certainly the latter method would be preferable where but few cases of an infectious disease exist in a region where there are a large number of healthy animals to be protected from infection — in anthrax, for example. No one would think of immunizing all of the cattle in a State or a county because cases of anthrax had appeared on a particular farm.

In the interests of the individual farmer it may be that protective inoculations practised among his herds which have been exposed to infection would result in securing him against considerable losses. But such inoculations should not take the place of the isolation of animals already infected and the destruction of infectious material. If we had, for example, a satisfactory method of protecting horses against glanders by inoculations with an attenuated virus, no one would be inclined to advocate this mode of prophylaxis as a substitute for isolation and disinfection. But, on the other hand, in sections where anthrax causes annually a heavy loss among the sheep and cattle, owing to the fact that the fields are already infected over extensive areas, as is the case in certain parts of Europe, the question of protective inoculations becomes an important one.

In the infectious diseases of man the same conditions would no doubt control our practice if we had a satisfactory method of protective inoculation for each of these diseases. In yellow fever, for example, those would be inoculated who were compelled to expose themselves in an infected area; in scarlet fever those children who were shut up in the same house with a case of the disease or who had in any way been exposed to infection.

In the case of Asiatic cholera it may be questioned whether protective inoculations should be practised as a mode of prophylaxis even if it were fully demonstrated that immunity, of a certain duration, could be effected in this way. Permanent immunity we could not expect to produce inasmuch as one attack does not protect from future attacks, but that temporary immunity may be induced by inoculations with cultures of the cholera spirillum appears probable from Shakespeare's account of the results of Ferran's inoculations in Spain during the last outbreak of cholera in Southern Europe, and from more recent experiments upon lower animals, and also upon man by Haffkine and by Klemperer.

Brieger, Kitasato and Wassermann have recently reported their success in conferring immunity upon guinea-pigs against the pathogenic action of the cholera spirillum. They found that attenuated cultures suitable for use as "vaccines" could be obtained by cultivating the spirillum in bouillon made from the thymus gland of the calf, by which means they have also obtained attenuated cultures of the bacillus of diphtheria, the bacillus of typhoid fever, the bacillus of tetanus and the streptococcus of erysipelas. Guinea-pigs inoculated with a culture in thymus bouillon which had been subjected to a temperature of 65° for fifteen minutes were found, after twenty-four hours, to be immune against virulent cultures in twice the amount which would otherwise have been fatal.

The virulence of cultures of the cholera spirillum is greatly modified by continuous cultivation in artificial media, and as shown by Haffkine, an attenuation of virulence may be quickly effected by cultivation in bouillon at a temperature of 39° C., with free access of oxygen. On the other hand, the virulence is greatly intensified by successive inoculations into the peritoneal cavity of guinea-pigs. Haffkine has shown that the attenuated cultures when injected subcutaneously in man or in guinea-pigs cause a local œdema and a slight febrile reaction, while the virulent cultures produce a more intense local reaction and may even give rise to necrosis of the tissues about the point of inoculation. But this severe reaction does not occur if an inoculation with the attenuated virus has been made some days previously. And animals which have been inoculated subcutaneously, first with an attenuated and then with a virulent culture do not subsequently succumb to intra-peritoneal injections of virulent cultures. Haffkine considers it probable that similar subcutaneous inoculations in man would give him a temporary immunity, at least, and they would be of prophylactic value during the presence of an epidemic. Ferran had previously demonstrated by his extended inoculations that the introduction of the cholera spirillum into the subcutaneous connective tissue of man is a harmless procedure. This fact is verified by Haffkine's more recent experiments, which also show that a tolerance is thus established in man, as in the lower animals, against the local effects of subsequent inoculations with more virulent cultures.

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[1] Preliminary report of the Committee of the American Public Health Association.

Whether this method will be found to have any great practical value can only be determined by more extended experiments. But in view of the fact that other measures of prophylaxis, well known to sanitarians, are sufficient for the prevention of cholera epidemics, and that nurses and others who necessarily come in contact with cholera patients are not likely to contract the disease if they use proper precautions with reference to their food and drink, the disinfection of their hands, etc., we doubt whether protective inoculations will ever come into general use as a measure of prophylaxis against this disease. Certainly they cannot take the place of those sanitary measures which have been proved to be sufficient for the prevention of epidemics, namely, exclusion by a proper inspection service at ports of entry ("quarantine"), isolation of the sick, disinfection of excreta, general sanitary police of exposed towns and cities, boiling the water used for drinking purposes, etc. Still under certain circumstances protective inoculations may have considerable practicable importance and the experiments now being made have evidently great scientific interest in connection with the question of acquired immunity. Klemperer, of Berlin, has recently reported very interesting results in this connection. By inoculating man with sterilized cultures of the cholera spirillum he was able to establish a considerable degree of immunity, as shown by the fact that the blood of such individuals when injected into guinea-pigs protected them from the lethal effects of virulent cultures of the cholera spirillum. The cultures used in his experiments were sterilized by exposure for two hours to a temperature of 70° C., and eight successive subcutaneous injections were made. At the end of twelve days the blood serum of an individual subjected to this treatment was found to protect guinea-pigs when injected into these animals in the amount of one-quarter of a cubic centimetre. Klemperer has also ventured to inject non-sterilized cultures under the skin of man and has obtained evidence that such inoculations give rise to immunity, as shown by the protective influence exercised by the blood serum of inoculated individuals when introduced into the bodies of guinea-pigs. These inoculations with non-sterilized virulent cultures 0.35 c.c.) gave rise to a severe local reaction and to some fever, but proved not to be dangerous.

In view of the experimental results above referred to, it has occurred to the writer that possibly the protective inoculations against yellow fever, practised some years since at Vera Cruz under the direction of Prof. Carmona y Valle, of the city of Mexico, may have had a rational basis not suspected at the time they were made.

Dr. Carmona gives the following account of his method of inoculation:

"The method of performing the inoculation is very simple. In the first place, the urine of the sick is collected, taking care not to take that of patients suffering from any visceral affection, still less from gonorrhœa or syphilis. It is well to employ the urine secreted when the disease is well established, because it contains a greater quantity of zoöspores. This urine is placed in large shallow plates, and abandoned to spontaneous evaporation, having care that the evaporation is complete, and that no trace of humidity remains. If the layer of residue is very thick it is well to spread it out so that it may be penetrated throughout by the oxygen of the air. By following this advice you will surely avoid the inoculation of the microbes of putrefaction. When the residue is well dried it may be used for the inoculation. I usually place one or two centigrammes of the dry residue in a gramme of distilled water. I triturate it in such a manner that the mixture is as perfect as possible, and charging a Pravaz syringe, I make a subcutaneous injection in the right arm. The results are various, but no serious accident has ever occurred.

"I was first inoculated, September 29, 1881. I felt a lively pain at the moment of the injection and some minutes after, but it disappeared promptly to give place to slight tumefaction, without redness of the skin, which interfered somewhat with the movement of the arm. The fourth day all had disappeared, and I really had no febrile movement, since the thermometer did not go more than a few tenths above 37°. The urine became scanty and took a slightly reddish color. The malaise was insignificant and I continued my ordinary occupations.

"I count, to-day, nearly two hundred persons inoculated, and among them several experienced, some hours after the inoculation, a febrile movement, which sometimes caused the thermometer to mount to 38.5°. The duration of this febrile movement did not exceed twenty-four hours. The local accidents have been most varied. There was almost always tumefaction at the point of inoculation, but the extent and size of this tumefaction varied greatly. In many cases there was redness of the skin. These local phenomena lasted four or five days, but in general those inoculated continued about their ordinary affairs. Once only I have seen developed a phlegmon which terminated by suppuration."

Dr. Carmona says in the above quoted account of his method, "It is well to employ the urine secreted when the disease is well established, because it contains a greater number of zoöspores." The writer has elsewhere given his reasons for doubting whether Dr. Carmona's so-called "zoöspores" were, as for a time he supposed, the specific infectious agent in the disease under investigation. Without doubt a variety of microörganisms would be present in urine which was permitted to evaporate spontaneously in a large shallow plate. But there is no satisfactory evidence that the urine of yellow fever patients at the moment of its escape from the bladder contains any microorganism other than those which are constantly found upon the surface of the mucous membrane at the meatus urinarius.

It is not improbable, however, that the highly albuminous urine of yellow fever patients may contain specific toxic products which have escaped from the blood, and which in the body of the infected individual give rise to the morbid phenomena characterizing the disease. If so, Dr. Carmona's dessicated urine may have contained the specific toxalbumin (?) of yellow fever in sufficient quantity to have produced a certain degree of immunity in the individuals inoculated by him. Certainly this is a possibility worthy of further consideration, and one that is not at all improbable in view of the facts heretofore mentioned relating to acquired immunity in other infectious diseases as a result of inoculations with filtered cultures containing the toxic products of pathogenic bacteria.

In the absence of any precise knowledge of the specific infectious agent in yellow fever two possible methods of establishing immunity by protective inoculations present themselves. One, following the indication afforded by Professor Carmona's experiments, in which the object is to introduce a sufficient quantity of the specific yellow fever toxalbumin, assuming that such a substance exists in the blood of yellow fever patients during the progress of the disease. The other, to introduce into the circulation of susceptible individuals the yellow fever antitoxine, which, reasoning from analogy, we suppose to be present in the blood of immune individuals.

In experiments to determine the possibility of establishing immunity by the first method we would suggest that the urine had better be quickly evaporated *in vacuo.* Possibly also the toxic substance assumed to be present may be obtained in a more concentrated form, free from urinary salts and other impurities, by precipitation with alcohol, by dialysis, or by some other method known to physiological chemists. Again, it may be that the yellow fever toxalbumin could be obtained by chemical methods from the blood of those recently dead. Evidently here is a broad field for experiment, but it is one in which special training will be required on the part of the investigator, and great conservatism in drawing conclusions as to results attained.

The second method suggested would be tested by injecting blood serum from an immune individual into the circulation (or subcutaneously ?) of one susceptible to the disease, who must necessarily be exposed in an infected locality. Evidently numerous carefully conducted experiments would be required to establish the value of either of the methods suggested.

Another line of experiments which has suggested itself to the writer would be to treat cases of the disease by the injection into a vein, of blood serum from an immune individual. Possibly the, at present hypothetical, antitoxine might be present in such serum in sufficient amount to exercise a specific curative effect. This is one of the possibilities which can only be settled by the experimental method, but in the present state of science such experiments appear to the writer to be not only justifiable but extremely promising as to their results.

Yellow fever is a disease in which a satisfactory method of establishing immunity would be of great practical value, for susceptible individuals, and especially sailors and soldiers, are often necessarily sent to infected localities. The annual loss of life among those who venture to visit the endemic foci of the disease for business or pleasure is also very considerable. Moreover this disease is one in which there is every reason to believe that an artificial immunity might be established if we could succeed in isolating and cultivating the specific infectious agent, for it is well established that an attack of the disease affords a very lasting immunity, which, however, is not absolute, against subsequent attacks.

The committee on "Protective Inoculations in Infectious Diseases" proposes to give in subsequent reports a detailed account of the results of protective inoculations as practised in various infectious diseases of man and of the lower animals, and also to report from time to time such additions to our knowledge as have a bearing upon the explanation of acquired immunity and upon methods of conferring such immunity without danger to the individual or to the public health.

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CASES OF PERITONITIS FROM PERFORATIVE APPENDICITIS

No.	Name.	Date.	Sex	Age.	First Symptoms.	Constitutional Symptoms.	Local Symptoms.	Diagnosis.	Operation.	Result.	Autopsy	Remarks.
1	J. K.	July, '91.	M.	11	Pain, vomiting.	T. 102. P. 135.	Dulness, tenderness, tumor right lower quadrant.	Appendicitis, perforation.	Third day, drainage	Recovery.	....	.. ....
2	L. P.	Sept. '91.	M.	4	Pain, vomiting.	T. 102 P. 140.	Distention, tenderness right quadrant.	Appendicitis, perforation.	Third day, excision of gangrenous appendix	Recovery.	... ...	General cavity of abdomen opened.
3	A. T. L.	Oct. '91.	F.	14	Pain, vomiting.	T. 100. P. 128.	Dulness, distention, tenderness right iliac fossa.	Perforation of appendix.	Fourth day, excision of gangrenous appendix	Recovery.		General abdominal infection.
4	T. J. D.	May, '92.	M.	18	Pain, no vomiting.	T 101.5. P. 96.	Distention, general tenderness.	Perforation of appendix.	Fourth day after perforation excision of appendix	Recovery.	..	General peritonitis.
5	F. N. C.	July, '92.	M	10	Pain, no vomiting.	T. 100 P. 120.	Dulness and tenderness, right iliac fossa.	Perforation of appendix.	Fourth day, excision of appendix.	Recovery.	.....	Incipient general peritonitis.
6	J. E. P.	Aug. '92.	M.	17	Pain, paroxysmal. No vomiting.	T. 101. P. 96.	Dulness and tenderness over appendix.	Perforation of appendix.	Third day, appendix excised.	Recovery.	...	Spreading peritonitis.
7	O. G.	May, '89.	M.	28	Sharp pain in r. il. fos. during mild attack of appen'citis.	Collapse.	General tenderness, distention.	Perforation of appendix.	Second day of general peritonitis, fæcal abscess.	Death same day.	None.	Spreading peritonitis from ruptured appendicular abscess.
8	G. W. S.	Dec. '89.	M.	29	Acute pain in left hypochondrium. Vomiting, becoming stercoraceous.	...	General distention and resistance in right hypochondrium.	Acute intestinal obstruction.	Fourth day, general peritonitis, no cause found.	Death in six hours.	Perforated and gangrenous appendix.	Local symptoms present *opposite* side of abdomen.
9	A. F.	Dec. '89.	M.	18	Sharp pain, contin free vomiting.	T. 102.8 P. 132.	Distention, tenderness, dulness, right iliac fossa.	Perforative appendicitis.	Third day, drainage.	Death in several days.	Gangrenous appendix.	General peritonitis.
10	H. H.	Feb. '91.	M.	12	Acute pain over abdomen during mild attack of appendicitis.	P. 144.	General distention and tenderness.	Appendicitis, spreading peritonitis.	Second day of relapse.	Death in one day.	None.	General abdominal invasion by rupture of appendicular abscess.
11	C. R.	May, '91.	M.	24	Severe pain in right iliac fossa. Vomiting.	T. 103. P. 120.	Distention, tenderness general.	Appendicitis, general peritonitis.	Third day, drainage.	Death in one day.	Perforated and gangrenous appendix.	General peritonitis.
12	G. B. O.	Aug. '91,	M.	30	Pain in right iliac fossa. Vomiting.	.	Dull, tender, resistant over appendix.	Appendicitis.	Fourth day, drainage.	Death in five hours.	Perforation of appendix, general peritonitis.	Extensive gangrene of perinephritic tissues.
13	J. J. H.	Oct. '91.	M.	20	Pain, vomiting.	T 103. P. 100.	Dull, tender, resistant in right iliac fossa.	Appendicitis.	Drainage.	Death, same day.	None.	General peritonitis.
14	C. G.	May, '92.	M.	13	Pain and vomiting.	T. 101. P. 120.	General tenderness, but more marked over appendix	Appendicitis with abscess	Fourth day, drainage.	Death, same day.	None.	General peritonitis.
15	C. R. G.	July, '92.	M	34	Pain in epigastrium and rt. iliac fossa. Vomiting.	.	General distention.	Appendicitis, general peritonitis.	Third day, excision of appendix.	Death on second day.	None.	General peritonitis.
16	T. F. K.	July, '92.	M.	30	Pain, rt iliac fossa, becoming general.	Collapse	General distention, no local signs.	Perforation of appendix and general peritonitis.	Fourth day, excision of appendix and drainage.	Death in four hours.	None.	....
17	J. W. P.	July, '92.	M.	28	Severe pain, vomiting.	Violent. P. 116 T. 103.	Tenderness over appendix, general distention, dulness.	Appendicitis and general peritonitis.	Third day, excision of appendix and drainage.	Death, three hours.	None.	General peritonitis.
18	E. G. F.	Aug. '92	F.	15	"Awful pain" in rt. iliac fossa. Vomiting.	T. 102. P. 114, 3d day.	Dulness, tenderness in right iliac fossa.	Appendicitis with abscess.	Fifth day, drainage.	Death, three days.	General peritonitis.	Seen by me on third day, advised delay. P. 120 on fifth day.
19	C. P.	Sept. '92.	M.	46	Pain through bowels. Vomiting.	T. 101. P. 120. Gen. condi. bad.	Distention, no local signs.	Appendicitis and acute obstruction.	Fourth day, excision of gangrenous appendix.	Death, twenty-four hours.	None.	General peritonitis.
20	A. H. B.	Oct. '92.	M.	55	Pain, vomiting, followed by constipation.	P. 100. T. 100.8. Gen. condi. bad.	General distention, general tenderness, hernia.	Internal strangulation or appendicitis.	Fifth day, excision of appendix.	Death, third day.	None.	General peritonitis.
21	H. B.	Nov. '92.	M.	40	Violent pain, vomiting.	P. 135. T. 101.	General distention, dulness and tenderness over appendix.	Perforation of appendix with general peritonitis.	Second day, excision of appendix.	Death, sixth day.	None.	General peritonitis.
22	H. K.	Aug. '87.	M.	50	Pain, vomiting.	Collapse.	General distention and tenderness, no local signs.	Acute obstruction.	None.	Death, third day.	Gangrenous appendicitis, general peritonitis.	....
23	E. M.	Feb. '88.	M.	26	Pain.	Collapse. P. 140 on 7th day.	General distention, no local signs	Appendicitis, general peritonitis.	None.	One hour after visit.	Gangrenous appendicitis.	General peritonitis.
24	J. P. H.	Mar. '90.	M.	21	Pain, vomiting.	Collapse. P. 156, T. 97, 6th day.	General distention and tenderness.	Appendicitis, general peritonitis.	None.	Sixth day.	None.	Died shortly after my visit.
25	F. B. M.	July, '90.	M.	27	Pain, vomiting.	Collapse, 2d day. P. 176. Dying.	General distention and tenderness.	Appendicitis, general peritonitis.	None.	Second day.	Gangrenous appendix, general peritonitis.	Died shortly after my visit.
26	H. P.	Oct. '90.	M	13	Pain, vomiting.	Collapse, 5th day. Dying.	General distention and tenderness.	Appendicitis, general peritonitis	None.	Fifth day.	....	.... . .
27	W. W. B.	Aug. '92.	M.	18	Pain, vomiting.	Collapse, 4th day. dying. P. 170.	General distention and tenderness, no local signs.	Appendicitis, or internal strangulation.	None.	Fourth day.	Gangrenous appendix, general peritonitis.	Died after taking a few breaths of ether.
28	S. B., Jr.	Oct. '92.	M.	13	Pain, vomiting.	T. 102. P. 130. Collapse.	General distention and tenderness, dull over right iliac fossa.	Perforative appendicitis.	Sixth day, drainage.	Sixth day, seven hours after operation.	Gangrenous appendicitis, general peritonitis.	Delay of two days in getting to the patient in Northern Maine.
INTUSSUSCEPTION, INTERNAL STRANGULATION, ETC.												
29	C. P.	Jan. '92.	M.	52	Pain in abdomen, paroxysmal, occasional vomiting, bloody stools.	T. 97.2. P. 60.	Resistance in left.	Intussusception.	Reduction and enterotomy for tumor of cæcum, third day.	Death in two days.	None.	.. ..
30	L. H. A.		M	50	Slight pain first day, violent afterwards, vomiting.	Collapse.	Distension, resistant coils in left hypochondrium.	Volvulus or acute obstruction.	Exploratory, fourth day.	Death in a few hours.	Thrombosis, portal vein.	Condition incurable.
31	S. B. H.	May, '92.	F.	54	Terrible agony in abdomen, constipation.	T. 98.6. P. 120.	General distension and tenderness, dulness in right iliac.	Appendicitis or obstruction.	Third day, resection four feet gangrenous intestine.	Death in ten hours.	None.	Gangrene caused by a band.
32	....	1890.	F.	45	Pain, vomiting.	Urgent.	Distension and general tenderness.	Acute obstruction.	Band divided and obstruction relieved, suture of intestine.	Death in short time.	... ...	Shock and collapse, band resulted from ovariotomy.
33	J. V.	Dec. '91.	M.	39	Intense pain in epigastrium, first day, vomiting; second day, bloody stools.	T. 99.8 P. 108.	None.	Obscure, none made.	None advised.	Death, third day.	None permitted.	Intestinal obstruction or embolism considered probable condition.
34	J. B.	1891.	F.	39	Pain in lower abdomen 3d day after simple fracture of r. hip, vomiting.	Collapsed on 4th day.	Distension and tenderness, general.	None made	None advised.	Death, fourth day.	None allowed.	Probably fat embolism, thrombosis, portal veins.
35	W. T. B.	1891.	M.	62	Distension of abdomen without pain.	T. 101. P. 130.	None except distension.	None made.	None advised.	Death, fifth day.	Fat embolism	....
CASES OF INTESTINAL EXTRAVASATION FROM OTHER CAUSES.												
36	C. J. K.	Sept. '88.	F.	39	Sharp pain in epigastrium.	Rapidly rising pulse and temperature.	Distension, great tenderness in hypogastric and left iliac regions.	Spreading peritonitis, cause unknown.	Intestinal suture, artificial anus.	Death, sixth day.	Fresh extravasation.	Perforation of large ulcer of transverse colon. Previous health good.
37	O. A. T.	Feb. '89.	M.	48	Pain, no vomiting.	Collapse, 2d day.	General distension and tenderness.	Perforation of rectum from case-knife.	Abdominal section, suture of wound in rectum.	Death in a few hours.	None.	General paralytic
38	J. G. S.	July, '92	M.	48	Pain immediately after being kicked, vomiting constant.	T. normal to subnormal. P. rising to 128 2d day.	General distension, dulness and tenderness right lower quadrant.	Appendicitis or ruptured intestine.	Intestinal suture for rupture of small intestine.	Death a few hours later.	General peritonitis from fæcal extravasation.	Had also hernia; good previous health
39	W. M.	Sept. '88.	M.	34	Sudden pain in epigastrium and to left, vomiting, blood.	T. 99. P. 96.	None.	Ulcer of stomach.	None advised.	Death in a few days, sudden.	Perforation of stomach ulcer and hæmorrhage posterior wall.	Operative interference would not have prevented death, probably.
CASES OF ABDOMINAL HÆMORRHAGE.												
40	J. P.	July, '88	F.		Sudden severe pain, exsanguination.	None except shock.	Dulness in flanks.	Hæmorrhage from extra-uterine pregnancy.	Removal of fœtus and sac	Recovery	...	....
41	R. T.	June, '92.	F.	30	Pain, fainting, exsanguination.	Collapse, shock, dying after 1st hour.	None.	Ruptured ectopic gestation.	None possible.	Death, ten hours.	None.	....
42	A. K.	July, '92.	F.	38	Sharp pain in hypogastrium.	None.	Dull flanks, mass at right of uterus.	Extra-uterine pregnancy.	Drainage, gauze packing.	Recovery.		....
43	K. C.	July, '92.	F.	26	Sudden sharp pain in epigastrium, blanched.	None.	Dull flanks, tenderness in lower right quadrant.	Extra-uterine pregnancy and rupture.	Ligation and drainage.	Recovery.	....	... .. .

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ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE OPERATIVE INTERFERENCE.[1]

BY MAURICE H. RICHARDSON, M.D.

I HAVE selected this subject for the purpose of inviting discussion upon a point about which there is a great diversity of opinion among medical men, — under what circumstances is immediate laparotomy imperative; what symptoms suddenly appearing in persons previously healthy indicate lesions almost always fatal if unrelieved? I am aware that it is extremely difficult, if not impossible, so to formulate a "symptom complex" that the best manner of proceeding will be clear in all cases. I am convinced, however, by the results of a large experience that there is no more important field in surgery for investigation at the present time. During the year 1891, in a total of three hundred operations, hospital and private, by far the largest number of deaths were caused by peritonitis. In the present year the deaths from the same cause have outnumbered the deaths from all other causes combined in the proportion of at least three to one. This is true if I exclude those cases of peritonitis which could not have been prevented or relieved by operation. In the following cases I have included only those in which the question of operation was seriously considered. In most the diagnosis has been made certain either by the operation or the autopsy. No case has been included, nor will any be discussed in this paper in which there was known to be any previously-existing abdominal disease. In other words, I offer for your consideration only those cases in which the very alarming and almost invariably fatal symptoms have appeared without warning or apparent cause in persons previously healthy, and in a very large number of which by immediate operation a fatal termination might have been prevented. I shall exclude cases of gun-shot wounds and stabs, because there is no great difference of opinion at the present time as to the necessity of exploration in both of these accidents. I shall include, however, those cases of blows and injuries to the abdomen in which there is no external evidence of violence.

The pathological conditions giving rise to alarming symptoms are, in the order of frequency, septic extravasations, hæmorrhage and acute obstructions. Extravasations from perforation of the vermiform appendix very much exceed in number those from all other causes combined. Acute obstructions from all causes, — twists, invaginations, bands, etc., — do not compare in frequency with peritoneal inflammations from perforative appendicitis. Hæmorrhages into the abdominal cavity from extra-uterine pregnancies, intestinal ulcers, and violence, with those from exceptional causes, make altogether a not infrequent cause of violent symptoms. In addition to the more common causes of septic extravasations, we may have perforation of intestinal ulcers, rupture of gall or urinary bladder, and rupture of the bowel from violence. Whatever may have been the cause of urgent symptoms, it is evident that in the first variety of cases — septic extravasation — the patient's life is in imminent danger, and that hours or even minutes are of the greatest importance. The invasion of the peritoneal cavity by septic fluids must differ materially from conditions where there is no septic element, such as obstruction and hæmorrhage, and the difference becomes well marked in the course of the disease. Yet in the initial signs of the disaster there is so great a similarity, that it will be found very difficult to make a diagnosis in the early hours of the disease. It should not be forgotten, however, that we are not to discuss diagnosis of early fatal conditions, but those symptoms by which we are to recognize the necessity of instant exploration, leaving the diagnosis and its appropriate suggestions until the abdominal cavity has been opened.

A glance at the table inserted will convince any one that the mortality is appalling. With the exception of the cases of hæmorrhage and a few cases of appendicitis, the result has been death in every case. The same fatal ending would have followed in all if relief had not been found in comparatively early exploration. The most frequent cause of death has been septic peritonitis. In the rarer forms of acute disease the mortality has been 100 per cent. Yet even in these conditions early interference offers the great chance for relief. Acute obstructions, twists, invaginations, and bands, are almost invariably fatal, yet there is no condition admitting more certain relief if relief is at hand in time. The slow extravasations of appendicitis, even in such cases as are here given, at times are followed by recovery if left to themselves; a spreading peritonitis may become arrested; but in those other appalling conditions of which I am able to bring a few instances, there is practically no hope except in much earlier interference than I have ever been able to give.

In every case pain of one kind or another has been the initial symptom. It has been of such nature as to call for immediate attention and treatment. It has been general at first, and soon localized, or localized from the outset. Almost invariably it has been accompanied by tenderness, general or localized. Vomiting has been present in most cases, appearing either with the onset of the pain or soon after. It has generally persisted till the end, though at times it has ceased. In some cases it has been absent, even in the gravest lesions. Its occasional absence, therefore, should not be looked upon too favorably. Local signs of serious trouble may become developed when there is an attempt on the part of nature to establish a localized peritonitis, but in the cases of spreading infection there is seldom anything more than a general distention and tenderness. Extensive extravasations, may cause percussion dulness, especially in the flanks or the pelvis. Distention in extensive lesions appears very early, even in the first few hours, and is a symptom of the greatest significance. Constipation added to the existing symptoms, makes the diagnosis quite evident, but the prognosis is by this time very bad. Constitutional symptoms of rise in pulse and temperature are not constant, though generally present. A high pulse is much more grave than a high temperature. These symptoms serve to indicate septic conditions, and throw little light on the diagnosis. In perforations with sepsis, we have pain, vomiting, distention, constipation, and constitutional symptoms with or without local signs; in early obstructive conditions the same without constitutional symptoms; while in hæmorrhage we have only pain, with evidence of exsanguination.

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[1] Read before the Suffolk District Medical Society, October [illegible], 1892.

The most important, because the earliest symptom, therefore, is pain. The character of the pain is of the greatest importance. If it is sudden, persistent, severe; if general at first and soon localized; if it alarms the patient; and, finally, if it is accompanied by vomiting, there is good reason for anxiety. The pain described to me so many times is not the pain of an intestinal cramp; it is not described as that of a colic with diarrhœa. It is absurd to say that one will often be misled by such evidence. This pain is a symptom of the greatest import, and about which neither the patient nor the physician is often mistaken. When accompanied by vomiting or shock or other serious symptoms, exploration is not only justifiable but imperative.

In considering the dangers of useless exploration, we have only to refer to the statistics of normal ovariotomies and similar operations. The mortality must be less where nothing is done beyond opening the abdomen. It will not be necessary often to make an extensive exploration. A very small cut will show at once whether there is any serious trouble. Hæmorrhage will show itself at once, and so will fæcal extravasation. Twists, intussusceptions, strangulations will be apparent immediately. If there is cause for investigation the operation will not have been useless, and if not the harm will be slight. I say this, believing fully that useless and hasty operations are to be condemned, and that no abdominal exploration is without danger; but the danger will be very slight in the hands of an experienced surgeon, and the number of useless explorations extremely small.

The fearful mortality in the cases of appendicitis depends upon the fact that they have been selected from 120 cases of all kinds, only those having been used in which the symptoms were of the fulminating variety, and in which a fatal ending could have been prevented only by very early operation. That the operation was not responsible, is shown by the large number of deaths under precisely similar conditions, where no attempt had been made to operate. That there were no recoveries in the cases of obstruction and fæcal extravasations from rupture of the bowel is not surprising in view of the fact that there was already a general peritonitis in each case in addition to the primary lesion. The brilliant results seen in hæmorrhage, even after forty-eight hours' delay, are in marked contrast, and show the urgent need of early attempts to eliminate the poisonous element in cases necessarily septic.

It is undoubtedly true that occasionally a patient with symptoms suggesting serious abdominal lesions where none exist will undergo an unnecessary risk. The number of such useless explorations in the hands of experts will be very small. In my own experience I have opened the abdomen but once without finding one of the formidable lesions enumerated in my table. In that case a girl of thirteen began to complain of pain in right iliac fossa Sunday evening. Vomiting began Tuesday night. Wednesday the temperature was 100.2°, and the pulse 88. There was dulness in the right lower quadrant, with tenderness and resistance. On opening the abdomen nothing was found abnormal, except a slightly swollen appendix containing an opaque, thin fluid. I removed the appendix, and the child made a good recovery. The specimen looked before removal precisely like those appendices I have seen excised in the intervals of recurrent attacks. I have never seen an unnecessary exploration in acute abdominal disease in the hands of my colleagues. I think, therefore, that it may be said with truth that in the hands of experienced physicians and surgeons very few useless operations are likely to be performed.

Yet we must keep in mind that thus far we have had to deal with cases where the symptoms have been so pronounced that the surgeon's duty has been conspicuously plain. It seems to me fair to affirm that the course would not have been so evident in many of the cases during the first twenty-four hours of the disease, — at the time when operation to be successful should have been performed. The alarming nature of the lesion, however, would have been suggested, and a serious indication of such conditions as we are discussing, is sufficient evidence for exploration. If we are to wait for more complete information, and must make a diagnosis before operation, I maintain that we might as well give up all idea of curing the patient by surgical art, except in such rare instances that a favorable issue will be looked upon as a most remarkable event.

I freely admit that there are many cases in which most alarming symptoms rapidly subside, which conditions may be cited in opposition to early interference. I have seen many such cases, where I have considered seriously the question of opening the abdomen. That I have not done so shows at least that there has been something in the case differing so materially from those cited above that I have been willing to take the responsibility of delay.

In the 43 cases herewith tabulated, at a very conservative estimate, thirty lives would have been saved by early operations. Exploration in the first few hours of the attack in all cases presenting similar symptoms may be unnecessary in a small proportion of cases; but taking them all together, the necessary and the useless, no man would seriously contend that there could possibly be any such mortality as I have shown. In a hundred cases the harm done by immediate exploration in all cases of sudden acute pain with vomiting and shock would be infinitely small compared with the great good that would result from surgical treatment in the first twelve hours of such symptoms as I have detailed.

Doctor. — "You see, wifey dear, I have pulled my patient through, after all; a very critical case I can tell you."

Wife. — "Yes, hubby; but then you are so clever in your profession. Ah! if I had only known you five years earlier, I feel certain my first husband — my poor Thomas — would have been saved."

Clinical Department.

A CASE OF CONGENITAL MALFORMATION OF THE ŒSOPHAGUS.

[illegible], MASS.

AUGUST 2, 1892, at [illegible] P. M., a female child, of American parentage, was born after a natural labor of eleven hours. The labor was at full term; the position had been O. S. A.; the child cried lustily, and appeared to be perfectly formed. Within two or three minutes the respiration became whistling. The mouth was wiped out without relief. The epigastrium and supra-sternal notch were deeply retracted with each effort at inspiration. Cyanosis followed, and in a few minutes respiration stopped; all muscles relaxed; the child was apparently dead. Then, suddenly, the the head being dependent, about two drachms of yellow, frothy mucus were discharged from the nostrils. Respiration was at once resumed, was unobstructed, and the color of the child became normal. A few minutes later the same phenomena were repeated, and continued to be repeated at short intervals during the child's life. A few drops of water placed in the mouth were apparently swallowed; but when a larger quantity, either of milk or water, was given, it was soon returned through the nostrils. From a consideration of the above symptoms a diagnosis of stricture of the œsophagus was made. The paroxysms of dyspnœa were thought to be due to mucus which the child was too young to expectorate, which could not be swallowed, and which passed, therefore, into the larynx and trachea.

In the morning of August 4th, a small bougie was directed into the œsophagus, first through the mouth, then through the nose, and each time it was arrested by an elastic obstruction five inches from the nostril.

The child grew gradually weaker, and died about noon of August 4th.

Autopsy, August 4, 1892, 8.30 P. M., Dr. W. D. Swan, assisting. Rigor mortis present. Meconium at anus. Bougie passed into œsophagus was arrested five inches from nostril. Just below the level of the cricoid cartilage the trachea and œsophagus were firmly united by connective-tissue, so that the one could not be dissected from the other. The stomach, œsophagus and trachea were removed together, and examined. The upper part of the œsophagus ended in a blind pouch at the point of union of the trachea and œsophagus. The lower part of the œsophagus had its normal diameter from the stomach upward nearly to the lower end of the upper part, where it stopped and communicated anteriorly at its upper limit with the trachea through an opening not more than one line in diameter. Extending upward from this opening on the posterior wall of the trachea was a shallow groove. The head was not opened. The organs of the chest and abdomen showed nothing abnormal. The specimen has been placed in the museum of the Harvard Medical School.

A FOREIGN BODY WEIGHING NINETY POUNDS IN THE STOMACH. — At an autopsy in Barabor, Wis., recently, an iron chain four feet long, weighing ninety pounds, was found in the stomach. It had been there four days before death, and had caused the patient, an elephant, great uneasiness.

Medical Progress.

RECENT PROGRESS IN DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

LEAD PARALYSIS.

STIEGLITZ[1] has made a series of valuable experiments in order to determine whether the morbid process in lead paralysis affects chiefly the peripheral nerves or the spinal cord. For this purpose he exposed animals, for a certain length of time each day, to a vapor charged with a solution of sugar of lead, the animals chosen being guinea-pigs and rabbits. In almost every case the animal showed a distinct loss in weight after exposure to the lead vapor; four out of twenty-two showed symptoms of undoubted paralysis, and one of paresis; one guinea-pig developed epileptiform attacks, and another had an attack of apoplexy; but lead colic was never observed. Fresh hæmorrhages into the brain proved the cause of death in eleven animals; eighteen showed distinct changes in the kidneys. Changes in the other organs were frequent but of a less striking character. Of the animals which showed symptoms of paralysis, one developed an acute paraplegia of the hind legs with a focus of inflammation in the upper portion of the lumbar enlargement, and also the formation of vacuoles in the ganglion cells of both anterior horns, especially in the neighborhood of the inflammation; there were also degenerated fibres in the posterior roots. The second animal suffered from epileptiform attacks and paralysis of all four limbs. There were hæmorrhages in the brain and atrophic changes in one anterior horn of the cervical cord, decrease of the ganglion cells, and marked vacuole formation in the other ganglion cells in both anterior horns, with some sclerosis in one posterior horn and atrophy of the horn below the sclerosis; the anterior and posterior roots were degenerated, the cervical spinal ganglia were diseased, and there was degeneration in the peripheral nerves. The third animal, after a protracted exposure to the vapor, suddenly developed an acute paralysis affecting all four extremities and causing death in two days. There was a very pronounced vacuole formation in the ganglion cells of the anterior horns, with degeneration in the nerve roots and the peripheral nerves and capillary hæmorrhages in the cord. The fourth animal developed paralysis of the right hind leg; there was vacuole formation in the ganglion cells of the lumbar enlargement on both sides and distinct degeneration in both anterior roots, which ceased suddenly just before entering the cord. The fifth animal, after very brief exposure, showed no distinct paralysis, but there were pronounced hæmorrhages in the brain and spinal cord, vacuole formation in the lumbar cord, and pronounced degeneration of the roots. In every case where there were paralytic symptoms there were found pronounced changes in the anterior horns of the cord, especially the formation of vacuoles and more or less degeneration in the peripheral nervous system. After a careful review of the literature, and after the study of normal conditions, Stieglitz believes the vacuole formation to be a pathological process, and not an artefact.

The author presents three theories as to the pathogenesis of lead paralysis. The earliest theory, which has been again revived, assumes that the lead affects primarily either the spinal ganglion cells or the peripheral nerve fibres, or both at once; but this, although rational in itself, is not in harmony with the pronounced clinical unity of lead paralysis. The second theory assumes a primary affection of the peripheral nerve fibres as a cause of the paralysis, which is in harmony with the fact that, in the majority of cases which have been examined, the changes have been found in the peripheral nerves and muscles. The third theory assumes a primary functional implication of the spinal centres, a theory which Erb has maintained not only in regard to lead but in regard to other forms of peripheral neuritis. This theory cannot, in the present state of our knowledge, be proven, but it is in harmony with the anatomical distribution of the paralysis and with the fact that the changes in the peripheral nerves correspond precisely to the secondary atrophies in the nerves as a result of the disease of the spinal cord; and this hypothesis, furthermore, is strengthened by those cases in human pathology where actual changes have been found in the spinal cord and by the facts brought forward by the author's own experiments and by the experiments of others that, in the cases of lead poisoning in animals, changes have always been found in the cord.

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[1] [illegible]

SYRINGOMYELIA.

Hoffman[2] has published a most exhaustive monograph upon this subject, in which he reports eighteen new cases, five of them with autopsy. Beside the more familiar symptoms of muscular atrophy and loss of sensibility to pain and temperature, with normal tactile sensibility, he calls attention to certain other symptoms not infrequently observed, such as a difference in the size of the pupils, slow reaction of the pupils, a narrowing of the palpebral fissure and a sinking in and diminution in size of the eye. Deformities of the vertebral column and hyperidrosis are of some value, as is also limitation of the visual field, which, in part of the cases, has been shown to be due to a co-existing hysteria. The medulla, as in one of the cases which he reports with autopsy, is comparatively often affected. Six cases are classed by him as presenting the type described by Morvan. Hoffman considers that the trophic disturbances in the hands, which Morvan considered as characteristic of his analgesic paresis, are precisely the same as those which occur in syringomyelia; nor does he think that the sensory symptoms differ materially in the two affections. As regards the tactile sense, in most cases it is not affected as early as the pain and temperature senses, and never to such a degree, so that partial anæsthesia is of the greatest significance and has an important bearing in the diagnosis of syringomyelia, but he considers it is equally important in analgesic paresis. Morvan claims that the lower extremities are not affected in analgesic paresis, but Hoffman thinks that increased reflexes, spastic gait and easily induced fatigue in the legs are extremely common. Bulbar symptoms may also be observed in Morvan's disease, and there are many cases of syringomyelia which present less marked trophic changes, such as the formation of small vesicles and calluses, joint disturbances and processes resembling acromegaly. He therefore decides that there are no clinical differences between syringomyelia and the so-called Morvan's disease. In fourteen cases, presenting Morvan's symptom complex, which have come to autopsy, nearly half antedated Morvan's description, and all showed pronounced syringomyelia. Hoffman thinks the changes in the peripheral nerves are not a necessary accompaniment of Morvan's disease, but that they may frequently be produced as a result of the changes in the cord. In regard to the genesis of syringomyelia, four theories have been advanced: First, that it is due to an enlargement of the central canal; second, that it is due to a central gliosis leading to cavity formation; third, that it is due to a chronic inflammation about the central canal; fourth, that it is due to stasis from increased pressure in the posterior cranial fossa. He considers that the starting-point of the morbid process in the majority of cases is due to congenital anomalies of development, the retention of embryonic tissue behind the normal central canal. This may be followed by a proliferation of the epithelial cells, which line the canal, and the sub-epithelial cells beneath. This leads to hyperplasia of the glia and a partial contraction of the central canal. The hyperplasia becomes a new formation, rich in glia cells, usually starting behind the central canal; this new growth finally degenerates, leading to a cavity formation.

Hoffman classifies the pathological processes as follows:

I. Hydromyelus, which may be latent and have no recognizable symptoms.

II *a*. Primary central gliosis of the cord, with and without hydromyelus: (*a*) without cavity formation (periependymal sclerosis, periependymal myelitis, central myelitis); (*b*) with fissure and cavity formation ("myelite cavitaire").

II *b*. Central gliomatosis, without and with fissure and cavity formation, with similar but less pronounced symptoms than those of II *a*.

HEREDITARY ATAXIA.

Sanger Brown[3] has reported a series of twenty-one cases of hereditary ataxia, which differ distinctly from the more familiar forms first described by Friedreich. He considers it a disease which may be traced through several generations, increasing in extent and intensity as it descends, tending to occur earlier in life and advancing more rapidly. It usually attacks several members of the same family. It occurs most frequently between the ages of sixteen and thirty-five; it shows no marked preference for sex; it descends through females four times as frequently as through males. There is always considerable incoördination of all the voluntary muscles and a sluggishness of the movements they produce when the disease is well established. The ataxia is often extreme and the gait devious; the sense of posture is perfect. Some weakness of the muscles of the legs is frequently an advanced symptom, with spastic contraction of the legs; in developed cases there are usually extensive choreiform movements. Atrophy of the optic nerve is a constant and early symptom, the articulation is always disturbed, and swallowing liquids is usually difficult; the pupils are sluggish, the knee-jerks are always greatly exaggerated; pain, sensory disturbances and club-foot are usually absent; ptosis and ophthalmoplegia may also occur.

In Friedreich's affection, however, Ormerod[4] points out that the knee-jerks disappear early, and that nystagmus, lateral curvature of the spine and club-foot are common, while there are other minor differences between the two affections. Furthermore, Friedreich's ataxia usually begins earlier in life.

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[2] Deutsche Zeitschr. f. Nervenheilk., iii, 1.

[3] Brain, xv, 250.

[4] Loc. cit., 268.

Nonne[5] has reported three cases of progressive ataxia; first of the lower, then of the upper limbs, without loss of muscular power or contracture, without affections of the sensation or of the sphincters and without material alteration of the reflexes, with a peculiar nasal speech, over-action of the facial muscles during movements of expression, nystagmus, limitation of the ocular movements and optic atrophy. The autopsy showed smallness of all the nerve centres. The trouble was considered due primarily to defective development and a disproportion in the relative numbers of the fine and delicate nerve fibres in the spinal roots. No degeneration of any spinal tracts were found. Menzel[6] has reported a somewhat similar case, in which there was a very noticeable atrophy of the cerebellum and pons, and degeneration in the cord. Ormerod suggests that in all these cases, including the true cases of Friedreich's disease, the smallness of the nervous centres is a predisposing, primary and hereditary factor, and spinal degeneration becomes a special and engrafted condition. These degenerations may affect the posterior columns chiefly, presenting the type of Freidreich's ataxia, or may affect the lateral columns more markedly, in which they would conform more to the type which Brown describes.

Bernhardt[7] thinks that the cases described by Brown belong to a different type from those first described by Friedreich, but he considers the defective development of the nerve centres the primary factor in all the cases. In one group, incoördination or ataxia plays the chief part, in another the spastic elements, in a third, spinal muscular atrophy and paralysis.

CEREBRAL CONCUSSION.

Miles[8] reviews the old theories of so-called concussion of the brain, as to whether there may be a fatal injury to the head in which there is no appreciable gross lesion to the brain substance, directly or through its membranes. He does not consider the old theory of vibration tenable owing to the fact that the brain does not exactly fill the cavity of the skull, that there is between it and the skull a certain amount of cerebro-spinal fluid, and that the membranes fix the brain so thoroughly in position that any considerable displacement would be evidenced by lacerations. Nor does he consider that multiple hæmorrhages are sufficient to account for the many and varied symptoms of concussion. He considers, however, that the symptoms are due to a derangement of the cerebral circulation, and he shows by experiments on animals that a severe blow on the head will cause very marked changes in the general circulation. The symptoms, therefore, he believes, are due to a profound disturbance of the circulation in the brain producing a condition of anæmia, which, he thinks, is due to a stimulation of the restiform bodies. The mechanism of the injury he considers to be this: a blow is dealt to the cranial wall, surrounding the point of impact the skull is depressed, following the cone of depression from the area into which this cone bulges, the cerebro-spinal fluid is forcibly expressed at the opposite cone of the axis of percussion, forming a cone of bulging, which accommodates most of this displaced fluid; these cones, however, are only of momentary existence, the elasticity of the skull permitting the bone to return at once to its *status quo*. At each point, therefore, is formed a vacuum, the result of which is that the blood-vessels of the membranes and brain substance at this place, are left for the moment unsupported and they rupture. This cone of bulging may be regarded as the true contrecoup, but Miles is so sceptical as to consider that most of the so-called fractures by contrecoup are really produced by direct violence; the patient being struck on one side of the head, strikes the other side in his fall, producing a fracture. A blow upon the frontal region or vertex will naturally produce the cone of bulging at the base of the skull, and therefore the fatal cases of concussion are likely to be associated with peribulbar lesions. By further experiment he finds that a sudden aspiration of cerebro-spinal fluid leads to extravasation of blood, but slow aspiration does not do so. A hard blow on the skull, after the blood has been so removed, gives a much less destructive lesion than when the fluid has been left in its normal position. He concludes that the phenomena called concussion of the brain are the result of a temporary anæmia of that organ; this anæmia is the reflex result of stimulation of the restiform bodies. These, also, are stimulated by the wave of cerebro-spinal fluid, which rushes through the aqueduct of Sylvius, the foramen of Magendie and from the subarachnoid space of the brain to that of the cord when a severe blow is dealt over the skull. This wave, in accordance with the laws of hydrostatics, would disturb the equilibrium of the ultimate nerve cells throughout the nervous system. The hæmorrhages found throughout the brain substance and on its surface, are to be ascribed to the recession of the cerebro-spinal fluid, which naturally supports the blood-vessels. The small hæmorrhages, found in cases of so-called concussion, are rather an index of the force producing the injury than the cause of the resulting phenomenon.

OPTIC CENTRES AND TRACTS.

Monakow[9] has continued his well-known researches upon the optic centres and tracts. In his previous work, he has shown that the preservation of the occipital lobes is necessary for the existence of the external corpus geniculatum and pulvinar, and in part, also, for the anterior corpora quadrigemina and the optic tract, and he has maintained that the lower we go in the animal scale the less important the corpus geniculatum externum and the pulvinar become in vision, while the anterior corpora quadigemina finally, in fishes, become the only visual centre. The higher animals, in whom psychical vision culminates, therefore employ in the visual act chiefly the corpus geniculatum externum and the pulvinar, and, by means of these, the visual centres in the occipital lobe. After a careful study of three cases in man, he shows that the same law obtains in man as in animals. This anatomical visual centre, lesion of which causes a complete annihilation of the corpus geniculatum and the pulvinar and a partial shrinkage in the superficial layers of the anterior corpora, on the injured side, must be sought, especially in the neighborhood of the calcarine fissure, that is, in the cuneus and lingual lobe, and probably also in the first and second occipital convolution. He finds that

[5] [illegible] f. Psychiatrie, xx [illegible]

[6] [illegible]

[7] [illegible]

[8] [illegible]

[9] [illegible] f. Psychiatrie, xx [illegible], xxiv, [illegible]

the different segments of the retina do not stand in any close relation to the separate portions of the occipital lobe, for precisely the same defects in the field of vision may be produced by disease in different parts of the occipital lobe. Having shown the extreme dependence of the primary optic centres upon the occipital lobe, he is led to the belief that this dependence is not exceptional, and the facts, he thinks, lead to the hypothesis of a close and co-existing action of several different groups of ganglion cells and fibres belonging to different parts of the brain, for the purpose of the production of even simple nervous conditions, as, for example, a simple sensation.

(To be continued.)

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

JAMES J. MINOT, M.D., SECRETARY.

Stated Meeting, Saturday, October 29, 1892, the President, Dr. **Edward N. Whittier** in the chair.

Dr. **M. H. Richardson** read a paper on

ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE INTERFERENCE.[1]

Dr. **Cheever**: I have not much to say, but I might contribute a few cases to this list. They illustrate two different points, and both occurred to me in the present month.

The first case comes under the class of unnecessary explorations. The patient was a woman of middle age, taken with acute vomiting and intense pain in the abdomen on the morning of one day, which persisted all day. In the evening the attending physician sent her to the City Hospital. A message was sent by telephone that in his opinion it was a case of appendicitis which demanded immediate interference. I was sent for and saw her; and the symptoms appeared to be quite grave. She had a high temperature, rapid pulse, somewhat distended abdomen, tenderness limited to the right side, and an obscure feeling of fulness there. Inasmuch, however, as the symptoms had only persisted about twelve hours, I felt reluctant to interfere, and ventured to wait until the next day. The next forenoon, thirty hours after the first access of the symptoms, there was no apparent relief except that the vomiting had somewhat ceased. This vomiting when I saw her was wholly bilious. The other symptoms were as acute if not more so. There evidently had been no relief. The tenderness in the right flank was more marked, the same obscure feeling of fulness there, and pulse and temperature kept up. It did not seem to me justifiable to wait any longer, and I had her etherized, made the usual incision and on opening the abdomen I found absolutely nothing to justify interference. The cæcum and appendix were perfectly healthy, not a shadow of peritonitis. There was some fulness of the gall-bladder. No gall-stones could be felt, and there was nothing, it seemed to me, which could have required an operation. Fortunately, owing to the safety of antisepsis, the wound healed, and she made a perfect recovery in the course of about a fortnight.

There was a case where the symptoms were severe, in which I endeavored to pursue a somewhat cautious and conservative course and yet one in which I was entirely mistaken in the diagnosis. On the other hand, a few days afterwards I was sent for to see a man who was brought to the hospital with the following history: He had been ailing three weeks, but still kept about his business, which was very laborious, going about with an ice-cart and handling heavy weights. He was a strong young man, from Maine, of temperate habits; and this sickness, he said, came on with pain in the abdomen which persisted three weeks, during which time he kept about, but for the last three days he was obliged to give up his work. He had not much temperature. He had not a high pulse at all. He looked, however, pretty sick. On examining his abdomen, there was found a fluctuating tumor on the left of the median line, simulating a distended bladder. He was etherized, the catheter passed, a moderate amount of clear urine drawn off, and the tumor not affected at all. The aspirator was put into the sac and a small quantity of very offensive pus withdrawn. The case being decided to be one of abscess, the ether was kept up and incisions were made until the sac was reached and opened, and a pint of very offensive semi-fæcal pus was evacuated, followed by discharge of fæces. The peritoneal cavity had not been wholly walled off, and was exposed to infection; it was packed with gauze, large drainage-tubes put in, and the cavity persistently washed out. He is in process of making an excellent recovery. A small fæcal fistula still persists, but well-formed, large stools are passing every second or third day by the rectum. I mention this to show the slightness of symptoms which existed after perforation of the intestine. The patient continued to work for three weeks. He had accumulated over a pint of pus and fæcal matter in the abdomen without excessive acute symptoms.

These cases are in extreme contrast. I have seen a good many cases in which I have been in doubt as to the gravity of the symptoms of appendicitis and in which the symptoms have subsided.

Three other cases came to the hospital in which the symptoms were watched carefully a day or two, and no operation was necessary.

These cases may throw some additional light on the subject. We all recognize cases where operations do a great deal of good and would not desist from making them; but the difficulty of making the diagnosis is enhanced more and more in all the cases I see.

Dr. **E. W. Cushing**: We ought to thank Dr. Richardson for this paper. For my part I fully agree with his conclusions, and I am glad we have such a man among us who is ready to go in so early. I had a little appendicitis once myself; and I am sure if I should have it again I should want something done. The more I see and the more I learn of abdominal work the more I believe the time to interfere is early, and in careful hands there is very little hurt done by unnecessary operation. In Dr. Cheever's case the woman was laid up a fortnight to be sure, but in ten such cases it would be found that five or six lives would have been saved and none lost by interference. Especially in appendicitis I think a great deal of damage is done by waiting too long. The time to interfere is early, and no one can tell which is going to be a fatal case in the beginning. I saw a case the other day where I operated on the third day after the symptoms came on. Pulse not over 100, temperature normal;

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[1] See page 59 of the Journal.

and the only thing which seemed really to justify operation was general principles and a certain bad look about the face — a pinched look. The man had a sloughing appendix, and the abdomen was full of thin, foul pus, which was washed out; and he did well for a day, yet the next day he died. I fully believe if that case had been operated on thirty-six hours earlier it would have been saved. I have yet to find the man who can say beforehand which case of appendicitis is going to be fatal and which is not. The apparently light cases often die, and the [illegible] cases sometimes get well. I think Dr. Richardson is to be congratulated on the courage of his convictions and the brilliancy of his surgery.

Dr. Richardson: I did not intend to discuss appendicitis, except the earliest symptoms of the fulminating cases. My experience, especially of late, in intestinal obstruction, and in appendicitis has been very disastrous. During August I saw in consultation a case nearly every other day. In many of these I was called on the fourth, fifth, or sixth day, or even later, and frequently was obliged to operate to give the patient what we considered a very slight chance of getting well. Many of these delayed cases died in two or three days, although occasionally one recovered in spite of the most unfavorable prognosis. Such an experience is very unfortunate, and, considering the fact that immediate operation, or operation within the first twenty-four or forty-eight hours would probably have been followed by recovery, deplorable.

In operating on the appendix in recurrent cases, I have had no experience whatever. I believe there have been several fatal cases not as yet reported. In recurrent disease of the appendix, as in acute inflammation, I do not advocate indiscriminate operating. I do not believe that the abdomen should be opened in all cases of appendicitis; but I believe that we can tell in the first twenty-four or forty-eight hours the grave ones, — and this is all that is necessary. If we find in the first twenty-four or forty-eight hours a gangrene of the appendix, with perforation, the operation is warrantable. If it is proper to operate on the fallopian tube in a state of inflammation, excision of a gangrenous appendix is vastly more urgent and necessary. The only point in this paper that I wished to discuss was under what circumstances, and in the presence of what symptoms in the very beginning of these cases is operation imperative. At a discussion of acute intestinal obstruction before the Massachusetts Medical Society this was the main point; and I made some remarks upon the subject at that time which embodied my views. The pathological condition found in most of the cases reported to-night admitted of cure had the remedy been applied soon enough. The intestinal extravasations were not necessarily fatal. The mortality in resection of the intestine is small; and, since applying my method of gauze drainage to the line of suture, I have not had any bad results. In twists and invaginations patients might have recovered. Now if we had operated in the first twenty-four hours in all the cases reported to-night, and if, in addition, we had operated upon as many more cases with similar symptoms but had found nothing, no one would assert that such a mortality could possibly have followed. If we could operate upon a hundred cases presenting acute abdominal symptoms — pain, tenderness, distension, vomiting, nausea — we might find that the abdomen had been opened unnecessarily in a small number of cases; but the mortality from those unnecessary operations, I maintain, would be very small. The number of cases saved by a [illegible], early exploration, would be very large indeed. It is not necessary to make an extensive operation to find out whether there is anything wrong or not. A cut down to the peritoneum usually gives evidence sufficient to justify further investigation. In appendix cases the abdominal walls are generally œdematous, more or less, especially as we get to the peritoneum. In cases of hemorrhage the peritoneum presents a dark discoloration, which I have noticed in every case. This appearance justifies further investigation, and is always followed by the escape of blood when the membrane is cut. In fæcal extravasations a small nick in the peritoneum through a very small incision will show whether there is any serious trouble going on or not. There will be serum, or pus, or other abnormal condition in every such case. In twists and invaginations a similar condition will be found. In rare instances there will be nothing found on opening the abdomen. A large incision, and a thorough investigation of the whole alimentary tract, and all the abdominal viscera will then be necessary, and the danger correspondingly increased. If in grave doubt as to the existence of any serious trouble, the slight exploration which I have indicated adds an almost infinitely small risk, and is to be encouraged, even if a more extensive exploration is not made.

Dr. Cheever: I should like to ask Dr. Richardson whether in advanced cases where the walling off of an abscess has formed and he has made his opening and found and given exit to pus, he thinks that it is best always then to search for the appendix?

Dr. Richardson: Some time ago I opened a walled-off abscess in a little girl in Haverhill without searching for the appendix. She died in three days of a general peritonitis. I felt sorry that I had not taken out the appendix in this case. Some days later I operated on a similar case in Ashby, isolated, separated and removed the appendix. This little girl died of shock in the course of twelve hours. I do not believe that it is wise, or justifiable to disturb the abscess cavity of a localized peritonitis; and I should not attempt to separate, or remove the appendix unless it presented, and was very easily accessible.

Dr. Cushing: What are the symptoms or want of symptoms which will justify the surgeon in not operating when the diagnosis of appendicitis is made? How will he know that a case mild now is not going to be a fatal one, and when he comes to operate the day after, that it may not be too late?

Dr. Richardson: The only answer I can give is that under certain conditions described, and from the general appearance of the patient and the local signs it seems to me probable that a case is going to do well. It is difficult to lay down the symptoms by which you are to be guided. I have tried to do so in this paper. The most valuable aid is that of experience. I have generally been right in advising delay, or in advising operation. Once I have opened the abdomen where the diagnosis of appendicitis had been made and nothing serious was found. On the other hand, I have delayed once or twice and have been sorry for it; but in the majority of cases of appendicitis, of which now I have had about a hundred and twenty, I have had no reason to regret either early operation or delay. If any general rule is to be laid down, it certainly is that an operation should be performed in every case. That, in my opinion, is a safer rule than that we should delay in every case. With our present knowledge the safest course of all is to apply to each case an intelligent discrimination.

Dr. James C. White, President of the Massachusetts Medical Society, addressed the meeting, and spoke of the prosperity of the society and the great interest shown in it by the members of the districts at a distance from Boston, and the excellence of the papers read at the meetings of these district societies.

The Secretary read the list of changes in the membership.

The President appointed the following as secretaries of the various sections for the ensuing year: Anatomy and Physiology, Dr. J. C. Munro; Medical Pathology, Clinical Medicine and Hygiene, Dr. H. Jackson; Obstetrics and Diseases of Women, Dr. G. H. Washburn; Chemistry, Pharmacy and Materia Medica, Dr. R. W. Greenleaf; Surgery and Dentistry, Dr. C. L. Scudder; Ophthalmology, Dr. M. Standish; Psychology, Dr. G. F. Jelly; Microscopy, Dr. E. M. Greene.

The following were elected a committee of five to prepare a list of candidates for officers of the Society for the year 1893–1894: Drs. D. W. Cheever, F. W. Draper, T. M. Rotch, G. W. Gay, J. H. McCollom.

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THE NEW YORK ACADEMY OF MEDICINE. SECTION ON GENERAL MEDICINE.

Stated Meeting, December 20, 1892, Dr. A. A. Smith, Chairman.

Dr. Richard van Santvoord read a paper on

ARTERIO-RENAL DISEASE: ITS EARLY DIAGNOSIS, PATHOLOGY AND TREATMENT.

Dr. Van Santvoord said that he had selected this subject particularly on account of the frequency with which the disease in question is met with in later life, and of its great practical importance. Instead of relating a number of cases he thought it would be more instructive to select a somewhat typical case for illustration. This was that of a gentleman fifty-one years of age, in well-to-do circumstances. Previously to coming under observation he had typhoid fever and pneumonia. He was a moderate drinker and smoked to some extent. On the left leg there was a small cicatrix, which might perhaps indicate syphilitic trouble, but if so it was the only evidence of specific disease. He was fond of sweets and pastry, and was accustomed to eat more of these than was good for him. In 1885 he had a well-marked apoplectic seizure, the symptoms of which pointed to hæmorrhage in the cerebellum. Immediately after this attack the urine was of normal specific gravity and contained neither albumen or sugar. The microscopic examination of the urine was also negative. A short time afterwards, however, it was found that the urine contained more albumen, but this was of short duration. The principal abnormal symptom noted was marked high arterial tension, as indicated by the sphygmograph.

In the course of the next three years the patient lost more than fifty pounds in weight. He also suffered from more or less mental depression and at times from sluggishness of the intellect. His appetite, however, continued good, though he had a coated tongue and suffered more or less from costiveness, symptoms which would scarcely have attracted attention but for the steady loss of flesh and mental derangements noted. In June, 1891, ophthalmic examination revealed considerable contraction of the retinal arteries and other retinal changes. After the time spoken of, shortly after the apoplectic seizure the urine contained no albumen until April, 1892; since which period it had been pretty constantly present. In November, 1892, it amounted to two per cent. of the urinary deposit. The urine is also now found to contain some hyaline casts. The quantity found was almost always more than normal and its specific gravity varied from 1,014 to 1,018. The quantity of urea was less than normal, being usually under twenty-eight grammes for the twenty-four hours, as estimated by the Doremus method. Until within the last three months he had partaken of an ordinary mixed diet, except that sweets, pastry and rich dishes were interdicted.

After the apoplectic attack mentioned, he was placed upon the iodide of potasium, but this was discontinued after a short time an account of the bad effect which the drug had upon his digestion. The medicinal treatment was of a mild character, consisting principally of the use of Carlsbad water and laxatives. Nitromuriatic acid in connection with taraxicum was what seemed to afford the patient most relief. During the last three months the mental depression had become more marked. Kirmyss was added to his diet. There was no appreciable hypertrophy of the heart, but the high arterial tension continued.

This example, said Dr. Van Santvoord, presented all the characteristic features of the disease in question. The most marked of these was the high arterial tension, which was observed six and a half years before the first appearance of albumen in the urine. Hyaline casts in the urine were also a later manifestation. The quantity of urea excreted, however, had almost constantly been below normal, although the normal quantity of solids was excreted. The conclusion to be reached, therefore, on a careful review of the case was, that the patient's condition was due, not to nephritis, but to some conditions beyond. The kidneys were evidently not materially damaged, and the failure of general nutrition was to be ascribed to advanced arterial disease. In consequence of this, vascular renal changes slowly proceeded. The condition of affairs was analogous to that met with in puerpual eclampsia, and the constantly noted diminution in the excretion of urea was due, not to the kidneys, but to a general process. There was probably an auto-intoxication which resulted in errors of assimilation. Judging from its late appearance and the signs by which it was attended, the particular renal lesion now present was probably a cirrhosis. The condition noted was most nearly allied to gout, and the case would probably be regarded by some as one of latent gout. There was also an analogy between such cases and saccharine diabetes. As to what primarily gave rise to such a process in the system we could only conjecture. Worry, grief, diet and general habits of life were no doubt often elements in its causation.

In regard to the matter of therapeutics it was evident that successful treatment would depend more largely on an early diagnosis than anything else. Here the sphygmograph was found to be of the greatest service. If albumen were present it would, of course, afford an indication for treatment; but it might not appear until very late, as in this instance, where, with the exception of temporary albuminuria just after the apoplectic stroke, no albumen was found for six and a half years. Far earlier was the diminished excretion of urea, and this with the presence of high arterial tension constituted the chief basis of diagnosis and treatment. Much more was to be expected from a proper regulation of the habits of the patient in every respect than from any medicinal agent; and in such cases it was necessary that the physician should give minute directions in regard to diet, sleep, exercise, etc. The fermented milk foods, such as kumyss and matzoon, were undoubtedly of value. The one drug recommended by many authorities was iodide of potassium. Its efficacy was, however, denied by others, and he was inclined to believe that drugs of all kinds were of but little value.

Dr. H. M. Biggs said he wished to refer to only one or two phases of the important subject treated of in the paper. The first point was regarding the pathological anatomy of arterio-renal disease. He did not believe that the changes which took place in the arteries were of an inflammatory nature, but thought that they were due to a degenerative process, and that the new formation tissue found in such cases, was secondary to this degeneration. This was certainly true of the kidneys, and was also probably the case to some extent in regard to the vessels. The arteries were affected first. These changes took place in the muscular and elastic elements in the walls, and resulted in a diminution of the lumen of the vessels. Eventually changes took place in parenchymatous organs.

An important point brought out in the paper was the latency of the renal disease which is apt to be met with. In making autopsies, he had been much struck with the frequency with which rather extensive disease of the kidneys is found in cases in which its presence was not discovered during life. One reason for this was no doubt the imperfect manner in which urinary examinations are apt to be made. In order to obtain any accurate results, it was essential that such examinations should be repeated over and over again. While at one time nothing might be found, at another there might be detected evidences of abnormal conditions. Often these evidences were very slight. There might, for instance, be only a very few hyaline casts, with perhaps an occasional granular cast, and these were thus liable to be overlooked.

The presence of albumen was significant, but its absence was not significant, as it afforded only negative evidence of the absence of renal disease. There was one cause of frequent mistakes. If the urine was never more than normal and was of high specific gravity, it was very apt to deceive the examiner. In some cases of kidney disease, however, these conditions might exist even for years. But in all cases of arterio-renal disease, as Dr. Van Santvoord had pointed out, there was present high arterial tension as an early sign. We had grown so accustomed to associate low specific gravity with albumen as an evidence of renal disease that where these were not found, we were apt to exclude the latter.

Another source of error was the character of the examinations frequently made. It was a common practice merely to examine one specimen of urine, taken, for instance, in the morning, and it was extremely difficult to induce either physicians or patients to furnish the urine for the whole twenty-four hours. For the determination of the quantity of urea excreted this was absolutely necessary. This was also highly desirable for other reasons, since at one time of the day the urine might contain casts and at another time not. One point, which [illegible] should lead to careful and repeated examinations of the urine, was the presence of high arterial tension.

Dr. Van Santvoord thought Dr. Biggs's remarks in regard to urinary examinations were of great practical value. In acute scarlatinal nephritis, for instance, a single small specimen usually sufficed; but in these chronic cases, a single examination, especially if negative, proved nothing. It was very difficult, however, to get the patient to understand just what is meant by the urine of the whole twenty four hours, including that passed while at stool. There could be no question that Dr. Biggs was right as to the [illegible] pathological changes in arterio-renal disease. He thought, however, that in addition to the chronic degenerative process there might be acute inflammatory attacks from time to time. The idea became more and more clear in his mind that Bright's disease is not a disease of the kidneys at all. The kidney was simply an "end organ," and any drug intended directly for the kidney would not reach the existing disease. In order to do any good with our treatment, it was necessary to get at the underlying condition. This was a very difficult matter, with our present knowledge, but this plan would afford the most service to the patient.

The Chairman, **Dr. A. A. Smith**, said that any one in active practice must have repeatedly met with these cases. He was particularly struck by Dr. Van Santvoord's last remarks. What had often been regarded as disease of the kidneys was in reality simply a local manifestation of an underlying condition. The same seemed to be true of almost any parenchymatous organ, such as the kidney and liver. So also in the inflammatory diseases, he believed that the trouble in special organs was often simply the local manifestation of a general process. He quite agreed with the author of the paper in regard to the matter of therapeutics. He noticed that he carefully avoided any attempt to treat the kidneys, but directed his efforts towards the general condition existing. He laid great stress upon the difficulty of assimilation, and he himself had been led to believe that this arterio-renal disease is often primarily due to defective assimilation. He believed also that derangements of the nervous system bore an important part in its causation; and especially of the sympathetic nervous system on account of its influence upon the blood-vessels. As to the importance of the most careful and repeated examinations of the urine, he was entirely in accord with both the speakers, and said he thought we were all no doubt too careless in this matter. He would like to ask Dr. Biggs whether he was of the opinion that the changes which are often found in the muscular walls of the heart in this affection, are of a degenerative character properly speaking.

Dr. Biggs said he thought not. The hypertrophy met with, he believed, was due to the over-work which the heart had to do. There was often present, however, interstitial myocarditis, which occurred as a later manifestation.

PRESENTATION OF A NEW ASPIRATOR, WITH DEMONSTRATION OF ITS ADVANTAGES,

by **Dr. W. S. Moore.**

Dr. Moore stated that the aspirator which he wished to demonstrate to the section worked on a new principle. The vacuum, instead of being formed by pumping was produced by absorption of ammonia gas. In order to understand its action it was only necessary to remember that ammonia gas is only one-half as heavy as air, and that water will absorb one thousand times its volume of ammonia gas; that is, a drachm of water will absorb a gallon of ammonia gas. Having exhibited the apparatus and explained its operation, Dr. Moore said that the good points of the instrument were: first, it can be operated more quickly and easily than any other; second, there are no valves to get out of order or pistons to get dry; third, it is an aseptic instrument, since the ammonia gas acts as an antiseptic and it has no crevices to prevent its being cleaned; fourth, and most important, is perfectness of the vacuum formed, and, consequently, its superior suction power; fifth, and lastly, its cheapness.

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Recent Literature.

A Manual of Bacteriology. By GEO. M. STERNBERG, M.D., Deputy Surgeon-General, U. S. Army. New York: Wm. Wood & Co.

This is a large volume of 886 pages, and is by far the most pretentious work on the subject of Bacteriology which has appeared in English. The intention of the work is to represent the state of our knowledge of bacteria up to the present time. It is printed in large and small type. In the large type the most important part of the work is given, and all of the pathogenic bacteria are included in this. The non-pathogenic are described in the smaller type, and in this various original articles relating to the subject are reproduced in full.

In the first part of the work there is a historical sketch of the subject, classification, morphology, and the general technique of bacteriological investigation. The classification adopted is that of Baumgarten. In the second part of the work the general biological characters of bacteria, their structure, mode of reproduction, action of disinfectives, etc., are included. One of the most important chapters in this part is that relating to ptomaines and tox-albumens. The third section comprises a consideration of the pathogenic bacteria, their mode of action, channels of infection, susceptibility and immunity. In the discussion of immunity, most of the interesting work which has recently appeared on that subject is referred to. The author rejects the theory of Metschnikoff, and supports the view that immunity depends upon the formation of antitoxines in the bodies of the immune animal. In the fourth part there is a description of the saprophytes. This includes a description of the bacteria in the air, water and soil, with the methods for examination, the bacteria on the surface of the body, in various articles of food, etc. In the last part of the book is a chapter on bacteriological diagnosis, with a list of the bacteria described up to the present time. In the list there are 489 different species of bacteria, 158 of which are pathogenic. At the end of the book there is a bibliography of 107 pages with 2,582 references.

While this work will not take the place of the more scientific critical work of Flugge, we think it will prove a very useful one to the student in bacteriology, and it shows the evidence of a great deal of work on the part of the author. It is rather more voluminous than it need be, and it would have been better had the full text of the original articles been left out and the space devoted to a fuller discussion of the general questions relating to bacteria. The bibliography is not complete and there are no references to it in the text. There are a few statements in the book which show evidence of a lack of care or haste in preparation. For instance, on page 217 the author says that in croupous pneumonia: "The mild character of the general symptoms, when a limited area of lung tissue is involved, leads to the inference that the pathogenic power of this particular pathogenic micro-organism is chiefly exercised locally." Such a statement as this is at variance with what we know of the disease, both from a clinical and pathological point of view. Again, on page 220 is the statement that the streptococcus pyogenes does not invade the blood. The plates in the book are not so good as they might be. On the whole, the book forms a valuable contribution to the literature of bacteria.

The Science and Art of Midwifery. By WILLIAM THOMPSON LUSK, A.M., M.D., Professor of Obstetrics in the Bellevue Hospital Medical College, etc. Fourth edition. New York: D. Appleton & Co. 1892.

The third edition of this standard work appeared in 1885. In the seven years which have since elapsed the changes that have taken place in both the theory and practice of obstetrics have made it necessary for the author essentially to re-write his book. The admirable plan of the first edition, however, is still unchanged; and the revision of this edition consists chiefly in the re-writing of paragraphs rather than of chapters. The new obstetric nomenclature has been adopted, except in respect to transverse positions, and presentations of the shoulder and trunk. The chapters on puerperal fever have been remodelled, and the aseptic precautions and methods of treatment now generally accepted by teachers are clearly insisted upon.

A detailed critique of a work so well and favorably known to practitioners and students is quite unnecessary: it is sufficient to say that the book is one of the best treatises on obstetrics in the English language, and will continue to be appreciated by teachers, especially, as a scientifically accurate, scholarly and practical authority.

Memoranda on Poisons. By THOMAS HAWKES TANNER, M.D., F.L.S. Seventh American from the last London edition, revised by JOHN J. REESE, M.D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania. Philadelphia: P. Blakiston, Son & Co.

These concise memoranda do not include everything that is to be remembered in toxicology, but they serve a purpose as a guide in a hasty consultation in emergencies if the practitioner has forgotten what he ought to do to save his poisoned patient. The book ought not to be regarded as a substitute for any of the standard works on poisons; but rather, as its title indicates, it should be considered as a mere outline sketch of the subject. The names of Tanner and Reese are a guarantee of the trustworthy character of the contents; and the issue of a seventh edition is evidence of appreciation on the part of the medical profession.

A CITY Ordinance recently passed in New York, allows a physician to cross the line of a procession if he obtains a special permit for that purpose.

THE BOSTON

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THURSDAY, JANUARY 19, 1893.

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THE INSTRUCTION OF TEACHERS OF GYMNASTICS.

It is a significant fact that the present movement for the advancement of physical culture in its various athletic, gymnastic and special forms, differs markedly from all similar movements that have run their course in this country. The interest in athletics and gymnastics is more general, as regards different classes in the community than ever before. It is also more widely diffused, having penetrated with varying degrees of intensity all parts of the country. Again, the forms under which this interest manifests itself have become notably diversified within recent years. The present movement has lasted longer than any of its predecessors, and as yet shows no signs of abatement or culmination.

It is only within the last decade that any really considerable success has been achieved by American educators in the field of physical education; as it is chiefly within the period named that their insensitiveness or aversion to the force of European example and experience has been sufficiently overcome for them to adopt well approved and adequate measures for training competent specialists in physical education. This is especially true with regard to the department of school gymnastics.

The most important characteristic of the present movement to promote physical education in our schools and colleges is the growing conviction, not only among the leading apostles of physical training but also among educational authorities, that teachers of gymnastics and athletic trainers require thorough preliminary training for their work. This conviction has led to the establishment of several normal schools devoted to the special training of teachers of gymnastics; and two of our leading universities, namely, Harvard and Cornell, now offer special courses in the theory and practice of physical training. Stanford University, in California, has likewise taken a similar step.

As regards normal schools, Boston is better supplied in this respect than any American city, there being no less than four such schools within the city, and a similar school exists in Cambridge. The multiplication of private schools of this class here and elsewhere bears emphatic testimony to the general neglect hitherto by the public normal schools of this branch of instruction.

The Boston Normal School of Gymnastics belongs to the best type of the class of schools under consideration. It was established in 1889 by Mrs. Mary Hemenway, and generally is maintained at her expense. It was originally established for the purpose of providing certain teachers selected from the public schools of Boston, with instruction in the Ling or Swedish gymnastics. The School Board having adopted the Swedish gymnastics as a branch of the school curriculum and provided for the instruction of its teachers in this subject, the Normal School of Gymnastics is now maintained, under the direction of Miss A. M. Homans, for the benefit of the public at large, and the public has not been slow to avail itself of the advantages offered by the school, judging from the number and character of its students, and the character of the positions, in this and other States, in which graduates of the school are installed. Most of the students are young women.

Theory and practice seem to be wisely blended in its course of study, which embraces lectures and examinations in Anatomy, Physiology, Psychology, Pedagogy and the distinctive principles of the Swedish pedagogical gymnastics. Daily practice in gymnastic exercises in the school gymnasium, is required of all students. The school has an extensive library of works in various languages, appropriate to the work of the school, and is also well supplied with appliances for demonstrative purposes and for anthropometrical measurements.

This school has already won wide and favorable recognition for itself, by reason of the wisdom and generosity shown by its founder and managers in the selection of its teachers, in the character of its management, and in the ordering and results of its course of study. It is safe to say that it deserves its reputation as the leading school of its class in America.

TYPHUS FEVER IN NEW YORK.

During the week ending January 14th there was a gratifying decrease in the number of cases of typhus reported. The largest number of deaths was on the 8th, when six were reported; but on the 10th not a single new case was reported, while there was but one on the 12th. While thus far, fortunately, not a single case of typhus has been found in any of the police stations where homeless people lodge at night, the danger from this source is regarded as imminent, and there is a renewed demand on the part of the public for the establishment of a lodging-house system similar to that which has so long been in successful operation in Boston. Seven years ago the State Charities

Aid Association and the New York Charity Organizaion Society secured the passage by the Legislature of a special act providing for municipal lodging-houses of a suitable character, but nothing has ever been done to establish them. In speaking of this matter Mr. Kellogg, the general secretary of the Charity Organization Society, recently said: "For some unaccountable reason the Commissioners of Charities and Correction have declined to carry out this bill, and the abominable and unhealthy station-house lodgings still continue. The societies which have taken hold of the matter are convinced that if all the police lodging-houses were closed and the municipal lodging-houses substituted for them, there would be a large reduction in the number of the worthless class of tramps who infest the city, sleeping in the police stations at night and begging at area-doors by day." As the Charity Commissioners have refused to carry out the act, the Police Commissioners have of late been considering the advisability of engrafting some of the features of the proposed municipal lodging-houses upon their own station lodging-houses, and one of their number has visited Boston with a view to examining the operation of the Wayfarers' Lodge.

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MEDICAL NOTES.

The Harvard Medical Society of New York City. — At the annual meeting of the Harvard Medical Society of New York City held January 7, 1893, the following officers were elected: President, Dr. Wm. James Morton; Vice-President, Dr. Reynold W. Wilcox; Secretary and Treasurer, Dr. Dillon Brown; Executive Committee, Drs. J. W. Brennan and R. Whitman.

Milk Inspection in Chicago. — The Chicago Common Council has passed an ordinance providing for a department for the inspection of milk. A fine of not less than twenty-five dollars nor more than one hundred dollars for each offence is provided for the delivery or sale of adulterated milk or milk from diseased cows, or cows kept in unhealthful places or fed on impure or unwholesome food. It is also a violation to skim the milk unless it is afterwards sold as skimmed milk.

The Cholera Riots in Russia. — A court-martial recently held in Tashkend has sentenced eight of the leaders of the cholera riots of last July to be strangled and several more to be sent to Siberia or imprisoned for long terms.

The Galileo Tercentenary. — The three-hundredth anniversary of Galileo's first lecture on mathematics in the University of Padua was celebrated on the 6th and 7th of December. The United States was represented by Prof. Wm. James, of Harvard College, and Great Britian by Professors Darwin and Norman, Lockyer and Stone, and also Sir Joseph Fayrer. The King was represented by the Minister of Instruction, and the Master of Ceremonies was the rector of the University, Professor Ferraris. Visits of ceremony were paid to Galileo's house and garden. Several addresses were delivered and receptions held, and the celebration as a whole proved to be very interesting and successful.

NEW ENGLAND.

Massachusetts Legislative Committees.—The following joint committees have been appointed for the current year in the State Legislature: *Drainage* — Senate, Messrs. Burnham, Baker, Monk; House, Messrs. Estabrooks, Melaven, Richardson, Parry, Porter, Merriam, Brooks, Doyle. *Public Charitable Institutions* — Senate, Messrs. Sawyer, Howard, Cushman; House, Messrs. Parkhurst, Gleason, Beckford, Delany, Tuttle, Curtis, Wood, Wadden. *Public Health* — Senate, Messrs. Nichols, Shaw, Green; House, Messrs. Hutchins, Crane, Fletcher, Gleason, Cook, Mahoney, O'Brien, McInnerey.

The Massachusetts Cattle Commissioners' Annual Report shows that during the past year not much work has been done against the spread of tuberculosis on account of various complications, but the Commission is now prepared to do much more effective work. In 118 towns which have made returns, 46,516 cattle have been examined, of which 81 were tuberculous, and were killed; 134 horses affected with glanders were killed, a smaller number than in the previous year. A few cases of hog cholera were found but were easily suppressed.

NEW YORK.

The Hospital Association. — Up to January 11th, the reported collections of the Hospital Saturday and Sunday Association had amounted to $37,999.

Small-pox in Brooklyn. Since small-pox appeared in Brooklyn last spring, 186 cases have been reported; of which 53 proved fatal.

Federal Quarantine. — At a meeting of the Society of Medical Jurisprudence held January 9th, Dr. N. E. Brill read a paper on "The Return of Cholera and Federal Quarantine," in which he strongly advocated the absolute control of quarantine matters by the National Government, and the Society adopted a memorial to be sent to Congress urging this measure.

Academy of Medicine. — At the annual meeting of the New York Academy of Medicine, at which Dr. D. B. St. John Roosa was elected President, the vote was the largest ever polled in the Academy.

The Mount Sinai Hospital. — At the annual meeting of the Mount Sinai Hospital Society held January 8th, resolutions were adopted to the effect that a new fireproof building should be erected on the present site of the hospital, or elsewhere, for the accommodation of 350 to 400 patients, and that the funds required for the purpose be raised by issuing bonds. The selection of a site and other details were referred to the Board of Directors with full power. The erection of new buildings is rendered necessary by the fact that the present hospital accommodations are entirely inadequate for the demands of the institution.

Thus, during the past year, while there were 5,[illegible] applications for admission, only 3,159 patients could be admitted. The cost of the proposed new building is estimated at $750,000 to $1,000,000.

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Miscellany.

DR. FRANKLIN H. HOOPER.

At a meeting of the Boston Society for Medical Improvement, held December 12, 1892, the committee appointed for the purpose offered the following resolutions, which were adopted by the Society:

Resolved, That in the death of Dr. Franklin H. Hooper, in the prime of his life, this Society has lost one of its ablest supporters.

Resolved, That we wish to record our appreciation of his skill, energy and zeal as an investigator and practitioner, and of his admirable bearing both to his professional associates, and to his patients.

Resolved, That our deep sympathy is respectfully tendered to the family of the deceased, and that a copy of these resolutions be published in the *Boston Medical and Surgical Journal*

Frederick I. Knight, }
George B. Shattuck, } *Committee.*
Edward H. Bradford, }

Remarks were made and letters read, as follows:

Dr. H. P. Bowditch: I gladly join the Society in offering a tribute to the high qualities which made Dr. Hooper's career, short though it was, a model worthy to be held up for imitation by all young men entering the profession. My intimate acquaintance with Dr. Hooper began in the year preceding his graduation, when he applied to me for permission to employ some of his spare time in experimental work in the physiological laboratory. I suggested to him a study of some points in the physiology of the vasomotor nerves; and for several months he devoted himself to this work. As a contribution to science, the results were unimportant, but they formed the basis for subsequent laboratory work which led to some interesting conclusions in this important branch of physiology. It may well be believed, moreover, that during this period of his life he laid the foundation of that skill in surgical manipulation for which, both in the laboratory and the operating room, he was subsequently so remarkable.

On his return from Europe, as a specialist in laryngology, he became at once a constant and welcome worker in the physiological laboratory. Contributions to the physiology of the larynx followed each other in rapid succession, and attracted the attention of his colleagues in all parts of the world. In this series of investigations Dr. Hooper displayed not only great skill and patience in experimenting, but also remarkable diligence and care in presenting his results in the clearest and most convincing manner. His enthusiasm for his work was intense, and nothing but the constant demands of a rapidly growing practice was allowed to interfere with the prosecution of his investigations.

Others can speak better than I of his career as a specialist and a practitioner; but to me he will always stand as a shining example of a young physician inspired with a noble ambition to leave the science of medicine further advanced than he found it.

Dr. D. W. Cheever: By research, and by practical adaptation of existing knowledge, Dr. Hooper has added to our resources in diseases of the pharynx. His modesty and kindliness endeared him to his patients; and his keen sense of professional honor secured the respect of his colleagues. Early death, always untimely, is peculiarly so, when it entails a loss to science and to humanity. Character, however, with knowledge survive the grave; and must be our only consolation for his premature removal.

Dr. C. J. Blake: It was my good fortune to know Dr. Hooper especially in connection with the work in which he did for children in this country what Meyer of Copenhagen and Loewenberg of Paris have done on the other side of the water; and it was particularly in his relation to children, those touchstones of human nature, that he showed forth those traits of character — straightforward, kindly, frank and winning — that secured for him their entire confidence, which is one of the best compliments a man can have. And this, above the value of his scientific contributions and the excellence of his clinical work, illustrated the gentleman in the profession.

Dr. A. T. Cabot: It gives me pleasure to move the adoption of this report, which is entirely in accord with my feeling for Dr. Hooper, and with my appreciation of his work. I have known him ever since his entrance into professional life, and he seemed a particularly striking example of a man who, with tastes which would naturally incline him to occupations not arduous and to the enjoyment of leisure, preferred and sought hard work and applied himself to scientific research with the greatest zeal. He was a charming companion, a man whom we all miss for his personal qualities, and whose loss to science is a very great one.

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THE CONDITIONS OF MISS GARRETT'S GIFT TO THE MEDICAL SCHOOL OF JOHNS HOPKINS UNIVERSITY.

Following is the letter from Miss Garrett, of Baltimore, to the Trustees of the Johns Hopkins University, in which she offers the sum of $306,977 to complete the endowment of $500,000, considered necessary to open the school to both sexes. The trustees have accepted the offer, and will open the school in October, 1893. In their letter of acceptance, they say:

"The Baxley Fund, the Woman's Medical School Fund, and the fund now contributed by Miss Mary Elizabeth Garrett in aid of our Medical School, will enable this Board to open such School in October, 1893. The School, when opened, will, we believe, because of its connection with the Johns Hopkins Hospital, and because of the gifts which it has already received, and especially this last munificent gift, afford to the women and men of this country, whose acquirements and training may enable them to enter upon its course of instruction, unsurpassed opportunities for the scientific study of medicine."

Baltimore, December [illegible].

To the President and Board of Trustees of the Johns Hopkins University.

Gentlemen: — In the resolutions of your Board of Trustees, adopted on October 28, 1890, it was provided that the Medical School of your University should be opened when a general fund had been accumulated for its establishment and maintenance of not less than $500,000.

In the minutes of your Board of Trustees, adopted

April 30, 1891, it was stated that the University would have in money and property, applicable to its Medical School Fund, when it received the Women's Medical School Fund, the sum of [illegible].

This sum, because of subsequent payments, outstanding collectable amounts, and the interest accrued thereon, may now be safely assumed to be $193,023.

It is necessary, therefore, that the general fund referred to should be increased by the sum of $306,977, to ensure the opening of your Medical School.

I now place this amount of $306,977, payable as hereinafter provided, at the disposal of your Board of Trustees for the use of its Medical School upon the terms expressed in your Resolutions of October 28, 1890, and upon the terms expressed in my letter of April 27, 1891, and accepted in your minute of April 30, 1891, namely: That this sum of $306,977 shall revert to me, or such person or persons, institution or institutions as I by testament or otherwise may hereafter appoint, if the University shall discontinue a Medical School devoted to the education of both men and women, or, if at any time it can be shown by proper legal proceedings that the women studying in the Medical School do not enjoy all its advantages on the same terms as men, or are not admitted on the same terms as men to all prizes, dignities or honors that are awarded by competitive examination, or regarded as rewards of merit; and with certain further stipulations, namely:

(1) That not more than $50,000 of the original endowment of $500,000 shall be expended on a building or buildings, and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, be known as the Women's Fund Memorial Building.

(2) That the Medical School of the University shall be exclusively a Graduate School as hereinafter explained, that is to say: that the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and like other departments of the University, shall be under the management and control of the Trustees of the said University; that it shall provide a four years' course, leading to the degree of Doctor of Medicine; and that all the instruction given in the School presuppose the knowledge at present required for matriculation in your University, and the knowledge imparted in the Preliminary Medical Course (Third Group, Chemico-Biological) as at present laid down in your University Register; that there shall be admitted to the School those students only who by examination or other tests equally satisfactory to the Faculty of the Medical School, (no distinction being in these tests or examinations between men and women,) have proved that they have completed the studies included in this Preliminary Medical Course, (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine those who have received the degree of Doctor of Medicine, or its equivalent, in some school of good repute,) and that the degree of Doctor of Medicine of the Johns Hopkins University, shall be given to no Doctors of Medicine who have not proved by examination or other tests equally satisfactory to the Faculty of the Medical School, that, besides completing the course of instruction of the Medical School of the Johns Hopkins University, they have completed the studies included in this Preliminary Medical Course.

(3) That the terms of this gift, and the Resolutions of October 28, 1890, in which the Trustees accepted the gift of the Women's Medical School Fund, shall be printed each year in whatever annual or semi-annual calendars may be issued announcing the courses of the Medical School.

(4) That there shall be created a Committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School and all non-academic questions of discipline affecting the women studying in the Medical School, shall be referred to this Committee, and by them be in writing reported for action to the authorities of the University; that the members of this Committee shall be members for life; that the Committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University, and that the first members shall be Mrs. Henry M. Hurd and Mrs. Ira D. Remsen, both of whom were active members of the Baltimore Committee of the Women's Medical School Fund; Mrs. William Osler; Miss M. Carey Thomas and Miss Mary M. Gwinn, the two friends who have been most closely associated with me in promoting the opening of the Medical School, both of whom are daughters of Trustees of the University, and myself.

(5) That the Medical School shall be opened in the autumn of 1893, and that notice of such intended opening shall be given on February 22, 1893.

(6) That in the event of any violation of any or all of the aforesaid stipulations the said sum of $306.977 shall revert to me, or such person or persons, institution or institutions, as I by testament or otherwise may hereafter appoint. Such alteration of the Preliminary Medical Course at present laid down in your University Register as shall leave undiminished the time required for preparation for that course, and the time required for the completion of that course, and the time devoted before and during that course to modern languages, other than English, and to non-medical scientific studies shall not be construed as violating the stipulations aforesaid.

These stipulations, and in particular those relating to the standard of admission, instruction and graduation in the Medical School, I make, not because of any misgiving in regard to the policy likely to be pursued by the present Board of Trustees, but because of the obvious possibility that the policy might be altered by succeeding Trustees, and because of my own entire unwillingness to contribute at any time to the maintenance of an undergraduate or partly undergraduate school.

The sum of $306,977 thus offered to the Trustees of the University I propose to pay in yearly instalments of $50,000 each, the first payment being made on January 1, 1894, and the last on January 1, 1899, adding to this final payment the additional sum of $6,977 still due; and in the meanwhile I will pay to the University, in semi-annual payments, interest at five per cent. per annum, computed from January 1, 1893, on such part of my gift as may remain from time to time on my hands; and I will for the payment of all the said amounts make such provision as will guarantee the University against all contingences.

I am very respectfully yours,

Mary E. Garrett.

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THERAPEUTIC NOTES.

Microcidin [1] (sodium naphtholate) is another of the newest antiseptic agents. It is a white powder obtained by the combination of B-naphthol with caustic soda, consisting in great part of naphtholate of soda, and, for the remainder, of naphtholic and phenolic compounds. It is soluble in water, not caustic, and costs less than many of the other antiseptics. Dr. Berlioz states that it is somewhat inferior to corrosive sublimate and naphthol, ten times greater than carbolic acid, and twenty times greater than boric acid, in its antiseptic power. Ulcers and suppurating wounds rapidly cicatrize, and gangrenous surfaces are effectually deodorized after washing with a 0.3 per cent. solution.

Methyl and Methylene [1] are two terms, which, with their affixes, are hopelessly confusing to the practitioner. Rival manufacturers eager to obtain predominant recognition so manipulate terms that it is almost hopeless to get reliable clinical reports from the action of these various, but more or less similar, agents. "Methyl blue" is an anodyne and anæsthetic, considerable employed with some success in the treatment of diphtheria. "Methyl violet" is pyoktanin. "Methyl chloride" is strictly a local anæsthetic applicable to neuralgias, and not an anæsthetic for inhalation. Methyl chloride is the anæsthetic so long used by Sir Spencer Wells, with such remarkable success, and which everybody else, pretty much, is afraid of. It is claimed to be a mixture of one volume of methyl alcohol and four of chloroform. "Methylene bichloride" was brought forward recently as a local anæsthetic liquid, differing from the last in not being a mixture, but a definite compound by itself. Lastly, "Methylene blue" is an anodyne and anæsthetic similiar in action and in other respects to "Methyl blue."

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[1] Squibb's Ephemeris.

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Correspondence.

THE FIFTIETH MASSACHUSETTS REGISTRATION REPORT. A REPLY.

Boston, January 5, 1893.

Mr. Editor: — In your issue of December 22, 1892, appears an article criticising the Fiftieth Registration Report of the State of Massachusetts. This article not only impeaches my ability and care as editor of the report, but it is also an attack upon the fidelity in office of the Secretary of the Commonwealth. The spirit of the attack upon the Secretary will be best shown by quoting the third paragraph from the end of the article in question, namely, "If the Secretary of State has any other than personal or political reasons for his extraordinary course this year, an explanation from him is now in order. The fact that he is not without a sense of humor, is shown by his claiming for his report 'a fresh interest,' — altogether too fresh."

That this attack is ill considered, is well shown by the flippancy and impertinence of the above closing sentence — such flippancy and impertinence having no proper place in a mind intent solely on honest criticism. It is proper to add in this connection that my appointment as editor came unsought, and that it was accepted reluctantly, upon a positive assurance from the Secretary that the question of a change in the editorship had been fully settled.

In regard to the criticism of my share of the work I have felt uncertain whether to reply or not, for the reason that the errors alleged are of such a trivial nature, that they, if they exist, would, among intelligent and practical men, have little weight. At the same time they are presented in such form as to appear important when taken in the aggregate. I am, therefore, constrained to consider them somewhat in detail, trivial as they are.

At the outset I desire to consider the criticism relating to the reduction in the size of the volume. In the early paragraphs of the editorial comments I stated the reasons why many tables heretofore published in the reports were omitted this year. All reference to these reasons is carefully omitted by my critic.

It is the belief, not only of myself, but also of a very large number of people that the intention of the statutory provision in regard to registration reports, is that tables, and only such tables as are of practical utility to the citizens of Massachusetts, whether incidentally useful to the people of other States or to the "statisticians of Europe," should be prepared. There is also an impression that much of what my critic truthfully calls "a mass of material," collected year after year and published at large expense, is of no appreciable value to any one.

Take, for example, Table No. XVI, report for the year 1889. From this table we learn that during the year, eighteen male junk-dealers died while only one female barber joined the "silent majority." We learn also the fact that two "retired gentlemen" became fathers during the year, as compared with nine "retired" persons, statistically not gentlemen; and we learn the further fact that two coat-makers entered into the holy bonds of matrimony, while none of the persons engaged upon the rest of the suit, vest-makers and pantaloon-makers, married. The plain people will hardly be able to understand the value of such statistics. Inasmuch as the total number of male junk-dealers and of female barbers, of "retired gentlemen," and of "retired" persons not gentlemen, and of coat-makers in the population is not stated, it is quite impossible to determine from this table the relative longevity as influenced by occupation of "male junk-dealers" as compared with that of "female barbers." Equally impossible is it to estimate the relative procreativeness of "retired gentlemen" as compared with "retired" persons; or the tendency to matrimony on the part of coat-makers as compared with that of those persons employed upon the nether garments. In these cases percentages are not possible, or, at all events, percentages accurate to the "*one-hundreth of one per cent.*"

Obscure, also, is the practical utility of a table such as No. XIX, Reports of 1888 and 1889, in which among many other similar facts it is shown that the total number of still-born children whose sex was unknown, reported from the county of Norfolk, in the month of April, for a period of twenty-four years, was six, as compared with the total number of still-born children of unspecified sex reported from the county of Norfolk in the month of April in twenty-five years, namely, seven. The practical utility of such a table is still obscure whether it was compiled for the citizen of Massachusetts or "*the statisticians of Europe*," by whom these reports are "*eagerly sought.*"

There have been prepared many other tables, also of equally questionable utility, citations of which neither time nor space permits. Furthermore, an attempt to reduce the size of the volume of these reports has been offset by the repetition and reduplication in the editorial notes in various forms of permutation and combination of the figures published in the first part of the report. Some of these tables are simply repetitions from former reports, and some are only so far changed that the upper line is removed and the line for the statistics for the year of the report added. Without taking the trouble to count all the repetitions in the "summary observations" of former reports, my point will be illustrated when I state that of the first forty pages of editorial comment in the reports of the past three years, in round numbers twenty-four pages are repetitions of former "observations."

I have not questioned, nor do I question the possibility of some practical utility in tables prepared, say, in census years; but I do question the utility or necessity of the *annual* preparation and publication of such tables.

It is certainly true that there has been for some time a popular demand, voiced through the press, for the condensation and abridgement of the public documents; and it was with an honest intention to respond to this demand that I omitted many things heretofore contained in the reports. It is entirely possible that I have gone too far in that direction, and I can say truthfully that fair and honest criticism on that point is not unwelcome.

My critic quotes and condemns the expression of the Secretary, "who has performed his work with a literary skill and originality of treatment," etc. It is needless to say that I am in no way responsible for the courteous comment. I may, however, claim that I ought to be held to no higher standard of skill in letters than ought any man who, without being distinctly a literary man, undertakes to perform a labor in which the construction of a sentence is the least consideration. I hardly know whether to notice the petty criticisms of language, inasmuch as there is no literary structure from the time of Shakespeare to the day of Howells which an active and hostile *scarabæus grammaticus* cannot undermine. It is, however, fair to myself to say that many of the forms of expression to which my critic takes exception—such as, for instance, "total mortality from all causes," "deaths from" instead of "deaths attributed to," I find to be the exact phraseology of the former reports; and I can but believe that had the gentleman read those reports with the same care and hostility with which he has read mine. I should have been spared at least this criticism.

There are doubtless other faults of form in my writing, faults of equally slight importance, for which the previously published reports do not give me the excuse of precedent. In explanation of, though not as excuse for, these, I can only plead the stress under which the work was done and an unavoidable lack of opportunity to revise it.

I cannot dismiss this subject without pointing out the deliberate unfairness of one of the statements of my critic, which most clearly demonstrates the animus of the whole article. He writes: "Old age is said to be neither a disease nor a cause of death, and in the next paragraph it is three times referred to as a cause." The statement referred to is as follows: "*Old Age.* This is neither a disease nor a cause of death, except that there may be here and there a real case of euthanasia. The report 'old age' on a death certificate usually means that the cause is unknown." Every fair-minded reader will acquit me of any inconsistency in speaking of old age as a cause of death in a paragraph immediately following one in which pains is taken to explain exactly the inconsistency alleged. Such criticism is not only misleading but dishonest, and bears on its face a predetermination to condemn, rather than a desire to judicially estimate.

To sum up the subject, it seems to me that the writer is hard pushed who in reviewing a work of this special character is reduced to such poverty of material for fault-finding as to be obliged to instance the omission or the redundancy of a "that."

Let us now consider the allegations of mistakes in my figures. In the first place I am taken to task for my statement that the variation in the estimates of the population published in the previous reports for non-census years, is so great as to materially affect the percentages of births, marriages, and deaths. In support of this statement I quoted from the reports for the years 1889 and 1890 the estimates or guesses of the number of the population in the year 1887. My critic (evidently secure in the belief that I would use for illustration nothing less than the greatest discrepancy which I could find) says, to prove the unimportance of the variation: "The error in the population referred to is at worst only one-tenth of one per cent.; and the difference in the table of rates is only from one one-hundredth to three one-hundredths of one per cent.: birth-rate 25.83 and 25.80, marriages 18.98 and 18.96, death-rates 19.80 and 19.78."

I take it for granted that by the words "error in population referred to" my critic means the error (or discrepancy) referred to in the *estimates* of population. It would be imitation to pretend to think that by this use of English he means the mistakes of the inhabitants in question — a table of such mistakes fortunately I am not called upon to compile, though I have no doubt that my critic would find it congenial work. And I also assume that when he writes of the table of rates, the expression *marriages* means *marriage-rates*, because any fair-minded man would believe that there must have been more than 98 marriages and 78 one-hundredths of one marriage during the term referred to. With apology for yielding to the temptation of emphasizing the proverb to the effect that *people occupying glass houses should be careful in the use of projectiles*, I proceed to the consideration of the actual figures. These figures will be taken just as they are printed in the previous registration reports "which are eagerly sought by the statisticians of Europe."

In the report for the year 1887 the population of the State in the year 1886 was guessed to be 1,976,264. In the following year (1888) the population for the same year (1886) was guessed (whether in accordance with "the method adopted by the Registrar-General of England" or not, I cannot say) to be *three* souls less, or 1,976,261. In the report for 1889, however, it appears that it was thought that this guess was not correct, so the population was then guessed to be 2,000,261; that is, the population was estimated to be 24,130 more for the year 1886, than the guess made two years before for the same year. When the report for 1890 appeared it was seen that even the last guess was not satisfactory, and a further addition of 1,097 was made, making a total variation in the guesses of the population of the single year 1886 of 25,227 or 1.27 per cent. Rather larger than "*one-tenth of one per cent.*" is it not?

Now what happened in regard to the figures for the year 1887? The population in that year was first guessed to be 2,010,338. In the next year it was guessed to be four souls less, but in 1889 amends were made by marking this same population up by a total of 48,259; and in 1890 the population of this same year was guessed to be 2,214 more than before, — a total variation of 50,473, or more than 2.51 per cent. instead of "one-tenth of one per cent." In the report for the year 1888 the population of the State for that year was guessed to be 2,044,506. Next year (1889) the population in 1888 was guessed to be 2,116,900; and in the report for 1890 this total for the year 1888 was still further screwed up to 2,120,221, making a total variation (and that with only three chances to guess) of 75,715, which gives "at its worst" a discrepancy of 3.73 per cent., again a trifle more than "one-tenth of one per cent." This is an error more than thirty-seven times as great as that which my critic implies is the error of the reports at their "worst." What force, then, is there in his allegation that, by omitting to guess the population of the State for the year 1891, I have made an error twenty times as great as I would have done had I "estimated" that population. But how is it about the tables of rates? My critic implies that "at worst" the variation is only from one one-hundredth to three one-hundredths of one per cent. Again the figures from the tables of the same reports. For the year 1886, birth-rates are stated as 25.69 and 25.37, an error ten times greater than the greatest error which my critic claims by implication. For the year 1887, birth-rates (26.45 and 25.80) show a variation of .65, or more than twenty times the implied greatest error; and the birth-rates for 1888 show a variance of .96 (26.85 and 25.89) or "at its worst" ninety-six times "one one-hundredth of one per cent." Marriage-rates for the foregoing years (18.23 and 18.) difference .23, (19.43 and 18.90) difference .53, and (19.31 and 18.62), difference .69. Death-rates for the same years (18 85 and 18.61, 20.27 and 19.78, 20.59 and 19.86), variations respectively of .24, .49 and .73. The errors alleged in my figuring of rates are, according to my critic, only .73 in birth-rate, .50 in marriage-rate and .52 in the death-rate; and even these assumed errors depend upon the question whether he himself has guessed right or not. With what grace then does such criticism come from him when the reports "eagerly sought by the statisticians of Europe" admit by their own figures errors in birth-rates .96, marriage-rates .69 and in the death-rate .73?

It is much to be regretted that my critic has not made so careful a study of the previous registration reports as he has of mine, which he so utterly condemns: had he done so, he would not only have been more familiar with the forms of expression obtaining in such reports, but would also have acquired some ideas about figuring which ought to be novel, even to him.

But after all, in view of the fact that old and experienced editors, familiar with the work of preparing reports of vital statistics, men who are, as it were, "to the manner born" could not guess within 75,000 of the population for a single year, and who admit such startling variations in the tables of rates, is it to be wondered at that "an inexpert and inexperienced" person like myself should prefer "to bear the ills I have than fly to others that I know not of," and elect to compute the rates upon a basis of a population whose total was definitely ascertained in the previous year (having called attention to the matter), rather than to take the chance of making the egregious errors of my well-trained predecessors; or that I should be confirmed in my decision by finding that in some tables in the "Summary Observations" of previous years, the rates were computed on the basis of an *estimated* population, while in others the rates were computed on the basis of the population of a census year two or three years previous to the compilation of the tables alluded to?

To review the entire article of my critic and point out all its inaccuracies and hypercriticisms would practically be to do the work of preparing the registration report over again, and I am sure a continued array of figures has interest for few if any. I will only allude to certain instances.

[illegible] The actual figure is [illegible] and a fraction. This to show hypercriticism in a most trivial matter.

It is true that the number of widowers who married maids is understated — 1.827 should read 1.829 — but this error ought not to mislead the "statisticians of Europe" or influence any widower who may wish to try the lottery of marriage again, because the number is stated accurately in the tables published in the beginning of the report.

Here is another example, not only of hypercriticism but also of the danger of trusting implicitly to the figures of the previous reports; and it again emphasizes the regret that my critic had not "scrutinized them with the same minuteness" which they deserve. He says: "Page 123, line 32, 'greater' should read 'less.'" He would find, if he corrected the errors of the previous report, that the figures which he quotes as 16.17 would be 16.166 as compared with the figures for 1891, namely, 16.1669, which he quotes as 16.16. So "greater" should still read "greater" — trivial, but mathematically correct.

There are allegations of other errors, which allegations do not seem to be warranted by the facts; and many of the figures to which the critic takes exception, such as, for instance, 2.13 instead of 2.18, and the location of the decimal point (1.63 instead of 16.3) are so clear to any intelligent man, especially if at all familiar with type-written copy, clerical and typographical errors (and even then not misleading), that I will not waste time or space on them. There are a few, a very few, errors in the book for which I am responsible. It is true that the work was novel to me. Considering the amount of labor involved in preparing the book, and the time in which it was necessarily accomplished, it would be remarkable if there were not even more. I will engage however that it is as free from errors of consequence as most of the reports in the last five years. For the errors that the book does contain I can only express my regret and cry [illegible]; but I cannot refrain from saying at the close that dishonest criticism and unworthy slurs tend neither to the promotion of an *esprit de corps* in the profession, nor to the advancement of science.

Very truly, yours, Francis A. Harris.

[The statement, in the foregoing letter that the alleged errors of the Fiftieth Registration Report are of such a trivial nature, that if they exist at all, they would have little weight among intelligent and practical men, has, in itself little weight, from the fact that the Report has also been criticised in the severest manner by other journals of good standing beside this journal.

Since the predecessors of Dr. Harris, at least for the past quarter of a century, appear to have shared his opinion relative to the observations upon barbers, nurses and retired gentlemen, by omitting all reference to them in their editorial remarks, and since the entire table, including these facts, was omitted from the previous report of 1890, the observations upon this point appear to have as little weight as the former observation as to the trivial character of the errors in the Fiftieth Report.

So far as the reduction in the size of the Reports is concerned, if the Reports of the ten years 1880 to 1890 are compared with those of thirty or forty years previous, say 1851 to 1860, it is noticeable that scarcely any State document has been increased so little as the Registration Report. The Reports of 1855, 1856 and 1857, edited by such able men as Dr. N. B. Shurtleff and Dr. Josiah Curtis, contained respectively 287, 302, and 255 pages; and when the amount of added material required by law, relative to medical-examiner returns and divorces is taken into consideration, the increase is but slight.

There is abundant evidence that Dr. Harris's opinion as to the value of annual tables relative to vital statistics, is not shared by experts who know their value.

In his criticism upon the [illegible] in the later reports from 1886 to 1890, the editor of the Fiftieth Report has failed to notice the full and satisfactory explanation presented upon page 241 of the Report of 1889 and upon page 209 of the Report of 1890, where, in the first place, it is stated that the Report of 1889 was issued "immediately after the taking of the census of 1890," and, secondly, that the Report of 1890 "is based upon the United States Census" of that year. As commonly happens, the first published figures of the census differed considerably (by several thousand) from the final statement of the authorities at Washington. Hence the difference between the estimated population presented in the Reports of 1886 to 1888, and those of 1889 and 1890. Moreover, this method is in strict accordance with that of the Registrar-General of England, as well as that of the best Continental authorities, none of whom, however, commit the blunder of estimating the birth, marriage and death rates of one year upon the population of another year, as is done in the Fiftieth Massachusetts Report for 1891.

The explanation given by Dr. Harris of his blunder on page 123 only makes the matter worse. If the ratio of 10.186 to 63.004 (or 16.167) is greater than the ratio of 151.386 to 936.170 (or 16.170), the process of reasoning must be quite original with the editor of the Fiftieth Registration Report. Ed.]

RECORD OF MORTALITY

For the Week ending Saturday, January 7, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	[illegible]	[illegible]	[illegible]	[illegible]	24.12	.84	[illegible]	[illegible]
Chicago . . .	[illegible]	—	—	—	—			—
Philadelphia .	[illegible]	[illegible]	[illegible]	[illegible]	10.80	[illegible]	[illegible]	[illegible]
Brooklyn . .	[illegible]	[illegible]		[illegible]	[illegible]		3.12	[illegible]
St. Louis . .	[illegible]			—	—			
Boston . . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.34
Baltimore . .	[illegible]							
Cincinnati . .	[illegible]	[illegible]	[illegible]	[illegible]	22.62	[illegible]		.87
Cleveland . .	[illegible]	93	34	19.44	16.20	[illegible]	[illegible]	[illegible]
Pittsburg . .	[illegible]	[illegible]	43	[illegible]	[illegible]	[illegible]	2.55	.85
Milwaukee . .	[illegible]	94	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Washington .	[illegible]	142	[illegible]	[illegible]	[illegible]	[illegible]	7.70	—
Nashville . .	[illegible]	23	7	[illegible]	[illegible]	[illegible]	—	
Charleston . .	[illegible]	35	11	—				
Portland . . .	[illegible]	11						
Worcester . .	92,313	30	[illegible]	[illegible]	[illegible]			
Lowell . . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Fall River . .	[illegible]	36	11	8.34	[illegible]			[illegible]
Cambridge . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.94		[illegible]
Lynn	[illegible]	21		[illegible]	14.28		[illegible]	4.76
Springfield . .	[illegible]	15	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]
Lawrence . .	[illegible]				—		—	
New Bedford .	[illegible]	[illegible]	[illegible]	—	[illegible]			
Holyoke . . .	[illegible]							
Brockton . .	[illegible]	[illegible]	[illegible]	[illegible]			25.00	
Salem	31,495	12	[illegible]	[illegible]	25.00		8.33	
Haverhill . .	[illegible]	[illegible]						
Chelsea . . .	[illegible]	7			[illegible]			
Malden . . .	[illegible]	[illegible]	1	—	[illegible]			
Newton . . .	26,498							
Taunton . . .	[illegible]	[illegible]	[illegible]	[illegible]	33.33	13.33		6.66
Gloucester . .	26,008	[illegible]	0	—				
Fitchburg . .	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		
Waltham . .	20,942	[illegible]	[illegible]		20.00			
Quincy . . .	[illegible]	[illegible]	1	[illegible]				
Pittsfield . .	18,294	2	0	—	50.00			
Northampton .	[illegible]	12	[illegible]	[illegible]			8.33	
Everett . . .	14,745	[illegible]	[illegible]		50.00			
Newburyport .	14,031	[illegible]	[illegible]		[illegible]			
Amesbury . .	[illegible]	[illegible]	[illegible]	[illegible]	33.33		33.33	

Deaths reported 3,071; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, [illegible]) [illegible] typhoid fever 48, [illegible] measles 21, whooping-cough 16, typhus fever 15, erysipelas 11, cerebro-spinal meningitis 9, malarial fever 4.

From diarrhœal diseases New York 15, Philadelphia 6, Cincinnati 3, Boston and Milwaukee 2 each, Cleveland, Washington, Worcester, Lowell, Fall River and Taunton 1 each. From measles Pittsburgh 7, New York and Philadelphia 5 each, Brooklyn, Boston, Milwaukee and Lowell 1 each. From whooping-cough Brooklyn 7, New York 6, Philadelphia, Washington and Nashville 1 each. From typhus fever New York 15. From erysipelas New York 6, Brooklyn 2, Philadelphia, Boston and Washington 1 each. From cerebro-spinal meningitis New York 5, Washington, Nashville and Worcester 1 each. From malarial fever Brooklyn 2, New York and Cleveland each 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending December 24th, the death-rate was 20.0. Deaths reported 3,915: acute diseases of the respiratory organs (London) 380, measles 126, diphtheria 81, whooping-cough 56, scarlet fever 51, fever 38, diarrhœa 22, small-pox (Leeds 3, Leicester and Halifax 2 each, Oldham 1) 8.

The death-rates ranged from 12.2 in Plymouth to 27.3 in Brighton; Birmingham 19.7, Bolton 25.6, Gateshead 20.0, Hull 26.7, Leeds 23.6, Leicester 19.7, Liverpool 20.7, London 19.6, Manchester 25.1, Newcastle-on-Tyne 18.2, Norwich 23.9, Nottingham 18.2, Preston 17.2, Sheffield 20.7, Sunderland 18.8.

METEOROLOGICAL RECORD,

For the week ending January 7, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 1	29.86	32	[illegible]	[illegible]	61	100	80	W.	E.	3	22	O.	R.	0.20
M... 2	29.27	44	[illegible]	[illegible]	86	54	70	S.W.	W.	16	12	F.	C.	0.80
T... 3	[illegible]	[illegible]	[illegible]	18	54	46	50	W.	W.	11	18	O.	C.	
W... 4	[illegible]	14	[illegible]	[illegible]	71	46	[illegible]	N.W.	N.	11	4	C.	O.	
T... 5	[illegible]	[illegible]	[illegible]	[illegible]	85	94	90	N.	N.	9	24	N.	N.	0.20
F... 6	29.48	[illegible]	[illegible]	10	88	47	68	N.	N.W.	28	25	N.	C.	0.50
S... 7	29.88	18	25	11	60	54	57	W.	W.	13	11	C.	C.	
☞	29.66	[illegible]	31	18	72	[illegible]	68							0.24

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 7, 1893, TO JANUARY 13, 1893.

The order directing **Major Robert M. O'Reilly**, surgeon, U. S. A., to proceed to Washington, D. C., and report for duty as attending surgeon, is suspended until further orders.

Lieut.-Col. Charles R. Greenleaf, deputy surgeon-general, U. S. A., is detailed as a delegate to the Eleventh International Medical Congress to convene at Rome, Italy, on the 24th of September, 1893, and will at the proper time, proceed to the place designated. While abroad in pursuance of this order, he will visit such points in Great Britian, France, Germany, Russia, Austria, Italy, and elsewhere, as may be deemed necessary by the surgeon-general of the Army, on official business, and on completion of the duty contemplated will return to his station in this city.

First-Lieut. J. D. Glennan, assistant surgeon, U. S. A., having reported at Hdqrs., Dept. of Texas, will proceed to Carrizo, Texas, and report to the commanding officer of the Seventh Cavalry Squadron at that place for duty.

Leave of absence for one month, with permission to apply for an extension of one month, is hereby granted **Captain J. L. Powell**, assistant surgeon, U. S. A.

First-Lieut. B. L. Ten Eyck, assistant surgeon, U. S. A., having reported for duty at Hdqrs., Dept. of Texas, will proceed to Laredo, Texas, for service in the field, to relieve **Captain W. B. Davis**, assistant surgeon, who, upon being relieved, will return to his station, Fort Sam Houston, Texas.

First-Lieut. Frank R. Keefer, assistant surgeon, U. S. A., is relieved from duty at Fort Riley, Kansas, and will report in person to the commanding officer, Fort Stanton, North Mexico, for duty at that post, relieving **Captain John M. Banister**, assistant surgeon. Captain Banister, upon being relieved by First-Lieut. Keefer, will report in person to the commanding officer, Fort Leavenworth, Kansas, for duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 14, 1893.

F. A. **Hessler**, passed assistant surgeon, ordered to Receiving-ship "Vermont."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING JANUARY 7, 1893.

Purviance, George, surgeon. Detailed as chairman of board for physical examination of S. C. **Devan**, passed assistant surgeon. December 21, 1892.

Gassaway, J. M., surgeon. To proceed to Gulf Quarantine on special duty. January 4, 1893.

Devan, S. C., passed assistant surgeon. To report for physical examination. December 21, 1892. Detailed for special duty at Philadelphia, Pa. December 28, 1892. Granted leave of absence for two months on surgeon's certificate of disability. January 7, 1893.

Kalloch, P. C., passed assistant surgeon. To assume command of the service at Cincinnati, O., when relieved at Boston, Mass. December 21, 1892.

Glennan, A. H., passed assistant surgeon. Leave of absence extended sixteen days on account of sickness. December 13, 1892. To proceed to New York, N. Y., for special temporary duty. January 3, 1893.

Williams, L. L., passed assistant surgeon. To proceed to Helena, Ark., on special duty. January 3, 1893.

McIntosh, W. P., passed assistant surgeon. When relieved to proceed to Boston, Mass., for duty. December 21, 1892.

Magruder, G. M., passed assistant surgeon. When relieved to proceed to San Diego, Cal., on special duty, thence to New Orleans, La., for duty. December 16, 1892.

Cobb, J. O., passed assistant surgeon. Upon expiration of leave of absence to proceed to Port Townsend, Wash., for duty. December 21, 1892.

Stimpson, W. G., assistant surgeon. To proceed to Detroit, Mich., for duty. December 20, 1892.

Brown, B. W., assistant surgeon. To proceed to Port Townsend, Wash., for temporary duty. December 16, 1892.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, January 23d, at 8 P. M.

Dr. John Homans: "Two Cases of Lithotomy in the Female."

Dr. F. B. Harrington: "Some Remarks on the Construction of Whitman's Foot Plate, and its Use in Paralytic Valgus."

John T. Bowen, M.D., *Secretary.*

RECENT DEATHS.

Walter Hayle Walshe, LL.D., M.D., F.R.C.P., Emeritus Professor of Medicine and Clinical Medicine, University College, London, died December 14, 1892, in the eighty-first year of his age. He was for twenty-one years professor in University College, London, and was one of the most widely-known medical men of England.

Samuel Logan, M.D., Professor of Surgery in the Tulane University, New Orleans, died January 12th, aged sixty-nine years. He was surgeon in the Confederate Army during the war, and had charge of the Federal wounded in Richmond. He had been in New Orleans since 1867.

Moses Williams Weld, M.D., M.M.S.S., died in Boston, January 16, 1893, aged seventy-five years. He graduated from Harvard College in 1840, and from the Medical School in 1843.

BOOKS AND PAMPHLETS RECEIVED.

Convulsions and Malaria. By Frederick Hill Stanbro, M.D., Springville, N. Y. Reprint. 1892.

Scarlet Fever: Its Restriction and Prevention. Issued by the State Board of Health of New Hampshire. 1893.

Is Evolution Trying to do away with the Clitoris? By Robert T. Morris, A.M., M.D., New York. Reprint. 1892.

A Text-Book of Practical Therapeutics. By Hobart Amory Hare, M.D., B.Sc. Third edition. Philadelphia: Lea Brothers & Co. 1892.

The Coal-tar Colors, with Especial Reference to their Injurious Qualities, etc. By Theodore Weyl. Translated by Henry Leffmann, M.D., Ph.D. Philadelphia: P. Blakiston, Son & Co. 1892.

Lecture.

VARIATIONS IN TYPHOID FEVER, WITH ILLUSTRATIVE CHARTS.[1]

BY SAMUEL A. FISK, A.M., M.D., DENVER, COL.,
Professor of [illegible] Medicine in the Medical Department of the [illegible] Denver; [illegible] the Colorado State Medical [illegible]

(Concluded from No. 3, page 56.)

I WISH now to touch upon some of the milder forms of typhoid.

You have all heard of the so-called "walking-typhoid," in which the patient, though quite ill, cannot be persuaded to go to bed. He walks into the physician's office and a temperature of 103° or 104° is found. These cases cause so little discomfort that the patient does not often go to bed until obliged to by a physician. It is not until quite late that there may occur a sudden change for the worse, or that some severe complication may set in.

This form of typhoid has been recognized for some time; but it is not of this that I wish to speak especially, but of the *Abortive Typhoid*, and of the *Typhus-levis*. For many years it was a question of great dispute whether typhoid could be aborted; and it was claimed that it had to run a well-defined course, just as it was presumed that acute inflammatory rheumatism should run out its course.

More recently, however, it has been acknowledged that there is such a thing as abortive typhoid fever, and you will find in Strümpell a recognition of this fact. "The name," he says, "belongs to cases which begin with severe symptoms and high fever, as if they were going to be grave, but in which these violent symptoms disappear *after a few days* and give place to a rapid convalescence."

Notice the difference between this description and that of Niemeyer (edition of 1878): "There are many cases," he writes, "which are not characterized by any remarkable lack of intensity of the symptoms, or by any peculiarities during the first week; but in the second week the symptoms do not grow worse and prove dangerous as in "normal" typhoid, but they decrease, and toward the end of the second or third week have all disappeared.

"Lebert has proposed the name 'abortive typhoid' for these cases; and it seems preferable to other names, such as 'febricula,' 'febris typhoides,' etc., because it better expresses the fact that these cases are only modified, benign, brief forms of typhoid and not a peculiar variety of the disease. . . . We shall only remark that many of the cases which former writers call 'gastric fever' or 'mucous fever' are to be regarded as abortive typhoid."

Osler's description reads: "In the abortive form the symptoms of onset may be marked with shivering and fever of 103° or even higher. The date of onset is often definite, a point upon which Jürgensen lays great stress. Rose-spots may occur from the second to the fifth day. Early in the second week, or at the end of the first week, the fever falls, often with profuse sweating, and convalescence is established. In this abortive form relapses may occur, and may occasionally prove severe. When typhoid fever prevails extensively these cases are not uncommon. I agree with J. C. Wilson, who states that they are not nearly so common in this country as in Europe."

Fagge says: "Not a few cases of enteric fever attended with well-marked symptoms subside before the end of the third week; about some of them which run on for sixteen or eighteen days, very little need be said. Cases which terminate before the sixteenth day, however, require special study, because their real nature being overlooked, they are very apt to be set down as examples of a simple febricula, or of a non-specific, gastric, or intestinal catarrh."

I have had a good many cases of abortive typhoid fever; and in this connection I would wish to state that they had the symptoms of typhoid, starting in with general indisposition, pain in the head, furred tongue, nausea and tendency to vomit, loss of appetite, tympanites, tenderness and gurgling in the right iliac fossa, and rose-spots. Some of them had diarrhœa, and others were attended with constipation; moreover, many of them occurred in the fall of 1890, when, as you know, we were having an epidemic of typhoid in Denver,[2] and illustrates the point made by Strümpell with reference to the diagnosis of typhoid fever, that "Ætiological factors, such as the occurrence of undoubted cases of typhoid in the neighborhood are of great diagnostic value in obscure cases." And also as stated by Osler that "When typhoid fever prevails extensively these cases are not uncommon."

This case illustrates the point very beautifully.

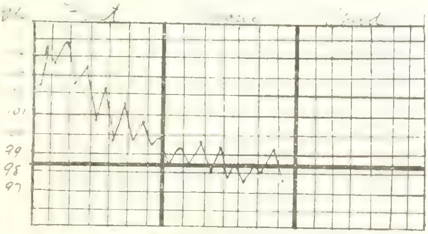

CHART VIII. Abortive Typhoid.

I saw my patient quite early in the attack. It was a pure case of abortive typhoid fever where the tem-

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[1] A lecture delivered to the Senior Class of the Medical Department of the University of Denver, October 1[illegible], 18[illegible].

[2] Professor McLauthlin, health officer at that time, in an article read before the local medical society, said:

The disease has been decidedly on the increase in Denver from the past few years. In September and October, 1887, there were [illegible] deaths from typhoid, being [illegible] of the total deaths. In September and October, 1888, there were [illegible] deaths from typhoid, being [illegible] of the total deaths. In September and October, 1889, there were [illegible] deaths from this disease, being [illegible] of the total deaths, a surprisingly heavy rate. To further satisfy ourselves of this, we have tried to compare Denver's mortality from typhoid with that of other cities in the country during the same period, namely, September and October, 1889:

Cities.	*Population.*	*Per cent. of Typhoid to total Deaths.*
New York	1,565,000	2
Brooklyn	[illegible]	[illegible]
Baltimore	500,000	[illegible]
St. Louis	450,000	3.4
New Orleans	254,000	1
Pittsburgh	[illegible]	[illegible]
Minneapolis	[illegible]	[illegible]
Denver	125,000	[illegible]

I am glad to state that, with an increased population (probably 150,000), the mortality from typhoid has fallen off to 15 deaths in September, 17 in October, 9 in November, and 7 in December, 1891, and only 8 for September, 1892.

The following extract from one of our dailies tells the story:

The health statistics given in the *Times* [illegible] the story of the [illegible] decrease in the prevalence of typhoid. In [illegible], there were between [illegible] and 70 [illegible] in the hospitals [illegible] the [illegible] deaths. [illegible] the total [illegible] patients in [illegible] very near to having been exterminated."

S. A. F.

perature came down to normal within the first week — a case of undoubted typhoid, a case of undoubted abortive typhoid. The convalescence was complete. It was accompanied, as the other cases were, by the putting on of flesh, and clearness of the complexion, the clear eye and the ravenous appetite, and other symptoms which are apt to accompany the convalescence of a typhoid fever patient. It was a pure case of abortive typhoid.

Another case, also a young woman, aborted about the end of nine or ten days; a case of undoubted typhoid, with all the symptoms that I have described; with the additional appearances that attend convalescence, even to the loss of the hair; she had a beautiful head of hair, which all came out.

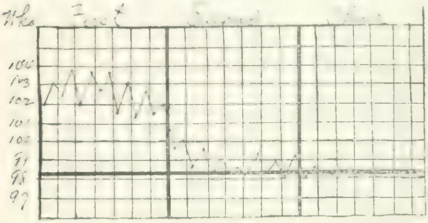

Chart IX. Abortive Typhoid.

From this abortive typhoid down to the *typhus levissimus* or very mild typhoid spoken of by Strümpell and emphasized by Griesinger, is but a slight step.

I present two cases of this which occurred in the fall of 1890 when typhoid was prevalent in Denver. These cases were marked by the symptoms of typhoid but ran a very mild and short course.

Here is the chart of a young woman who had well-marked symptoms.

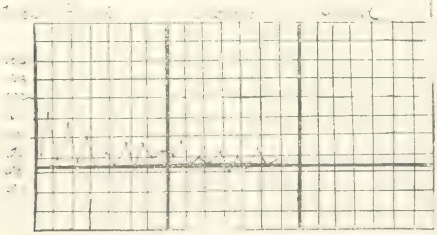

Chart X. Typhus Levissimus.

What characterized her fever was that it was not extended. It is a good illustration of the chart of *typhus levissimus*.

The next case is still more marked. It is one of the three cases that I have mentioned as occurring in the same house. Not only was there, in this case, the feature of typhoid in the neighborhood, but marked typhoid in the house. The disease ran a course of four weeks; very mild in character; with all the characteristic symptoms. It was furthermore a second attack, the man having had typhoid once, and I may also state that Chart IV was also a case of second attack.

This leads me from the *abortive* type and *typhus levissimus* still further to what has been of great interest to me the last few years — the *afebrile* typhoid. It used to be regarded as a fact that typhoid must necessarily be accompanied by an elevation of the temperature; and you will find that the third edition of Flint contains this statement: "More or less increase of the heat of the body is the rule. The rule that at some period in the disease the temperature is raised, is without any exception." Within the last few years I have been so apt to see cases that I have regarded as typhoid, in which there was no elevation of temperature, that I have been led to give the subject a good deal of investigation, and it has interested me exceedingly.

I have seen a number of cases of undoubted afebrile typhoid. I have some cases under observation to-day. One is a prominent business man, who, about the beginning of September, went over into the mountains on business and for pleasure, where he submitted himself to considerable hardship, riding horseback, fishing, wading the streams, sleeping out nights, and taking long journeys. He came back complaining of loss of appetite, of feeling tired, and of a lack of energy. He went off on another trip to the south-western portion of the State, and while out driving in Ouray, one afternoon, was attacked with a severe chill, and hurried to Denver the following morning. He complained that in addition to the symptoms that I have mentioned — loss of energy, loss of appetite, feeling tired — he had been sleepless. One thing that he noticed particularly was that for a week or so he had not been able to sleep; that he also had persistent pain in the small of his back, that he could not get rid of. His eyes were heavy and lusterless, his tongue furred. He had some diarrhœa. He had been blowing some clots of blood out of his nostrils. There was a little tenderness in the right iliac fossa. His temperature has never, so far as I know, been above the normal; and his pulse has been very much subnormal, going down as low as 42, 48 and 52 beats per minute. He has had rose-spots, successive crops, and his spleen is enlarged.

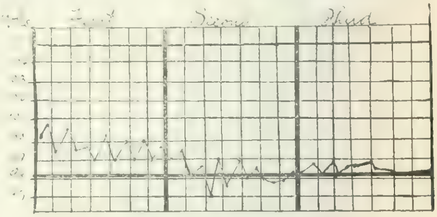

Chart XI. Typhus Levissimus.

I have now another case of a young girl, twenty-two years of age, of this afebrile typhoid, in whom there have been similar symptoms, except that the diarrhœa has been more marked.

I can recall a number of instances of this afebrile type taking four or five weeks to run its course, and I have even seen mild hæmorrhage from the bowel; and in this last case, the hæmorrhagic case, there were rose-spots, enlargement of the spleen, and this sub-normal pulse, running way down.

That such a thing as afebrile typhoid exists has been called to the attention of the profession by Liebermeister in "Ziemssen's Cyclopœdia," and is quoted in "Pepper's System of Medicine," Vol. 1, p. 299. He says: "Many of them never show during their entire course any rise of temperature, or occasionally a slight elevation only; but an enlargement of the spleen could generally be detected, and occasionally an unmistakable rose-colored eruption. The action of the bowels was usually irregular; sometimes there was diarrhœa; sometimes, on the other hand, obstinate constipation. The other symptoms were prostration, pains throughout the body, often headache, persistent loss of appetite, with more or less swollen and furred tongue and markedly diminished frequency of the pulse which disappeared with convalescence, while its quality was not appreciably altered. The long duration of an apparently trifling indisposition he considers as especially characteristic."

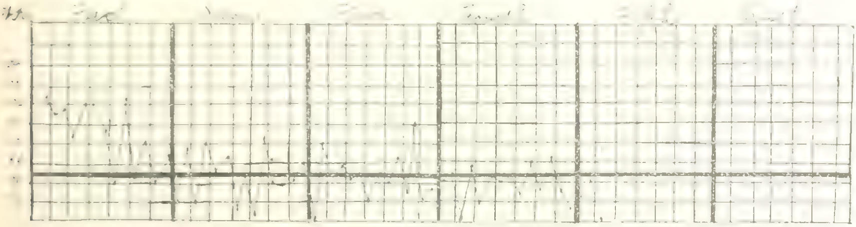

Chart XII. Typhoid and Pregnancy.

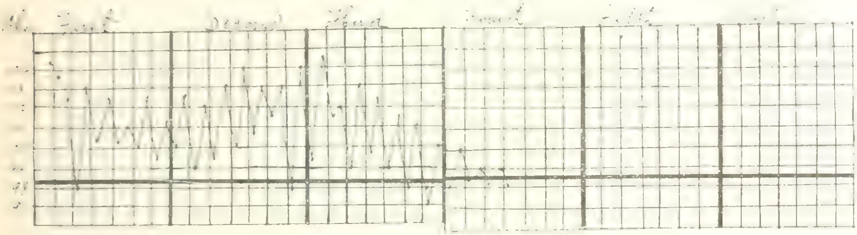

Chart XIII. Typhoid and Heart Disease.

Strube writes of an outbreak during the seige of Paris in 1870, "In many of the cases the temperature was sub-normal" — a condition that prevailed in the case I have spoken of as having afebrile typhoid with slight hæmorrhages from the bowel.

Osler also speaks of afebrile typhoid. On page 15 of his work you will find: "There are cases described in which the chief features of the disease have been present without the existence of fever. They are extremely rare in this country. No instance of the kind has come under my observation."

I must hasten to finish what further I have to say and that is with reference to what Strümpell states, that "A certain immunity has been alleged to be given by many circumstances, especially pregnancy, the puerperal state, and other diseases already existing, (tuberculosis and heart disease). It does seem to be certain that the occurrence of typhoid fever gives very probable though not absolute immunity against any later new attack."

Now, with reference to that immunity afforded by a previous attack, I have presented two charts which show you that such is not the case. One, of the very mild type, ran its course of four weeks (Chart XI); the one of Dr. K., that ran a very severe course here recently (Chart IV); Dr. K.'s second attack occurring within two years of the first.

With reference to the immunity offered by pregnancy that also is a mistake which is now pretty generally recognized. Cazeaux says: "Typhoid fever may occur at any stage of pregnancy. It often causes abortion which may take place in the first or second week of the disease."

Lusk says: "Typhoid is frequently, and relapsing fever almost constantly, accompanied by abortion, or by premature delivery induced by profuse uterine hæmorrhages, and thus greatly endangers life."

Reynolds says of typhoid fever: "When this disease occurs during pregnancy, it is followed by miscarriage in all but the most extremely mild cases, and even in those the life of the child is rarely preserved."

I have had the opportunity of seeing three cases of pregnancy complicated with typhoid fever. I will show you a chart of one of these (Chart XII).

This was a case where the pregnancy was established about six or seven months, and where she carried the child through the fever. A well-marked case of typhoid, and no doubt of the pregnancy. She recovered from the typhoid and I lost track of her. I never heard of any untoward occurrence.

A few years ago I saw a case of pregnancy with typhoid, in consultation with Dr. P., that resulted in a miscarriage, but the patient herself recovered.

The third case I had under my care at the County Hospital, last year. She was a foreigner, was probably a couple of months along in pregnancy. She developed albuminuria, and died of uræmic poisoning.

With reference to typhoid with heart disease, Chart No. VIII (hæmorrhage and heart disease) shows that they are not inconsistent; and I have a very well-marked chart of the same, where the typhoid was accompanied with heart disease (Chart XIII).

This chart illustrates typhoid fever, complicated by heart disease and great nervousness. The chart itself looks like one of typho-malaria, but it is not so; the extremes of temperature were largely due to nervousness.

With reference to the incompatability of typhoid and tuberculosis, I unfortunately cannot furnish any charts but my experience is very positively on the side that tubercular trouble does not furnish immunity. I have, within the last week, run across two cases of tubercular trouble that I brought through typhoid two years ago, and I have many such in mind. In fact, I have one well-marked case, just beginning, under my observation at the Methodist Hospital at the present time.

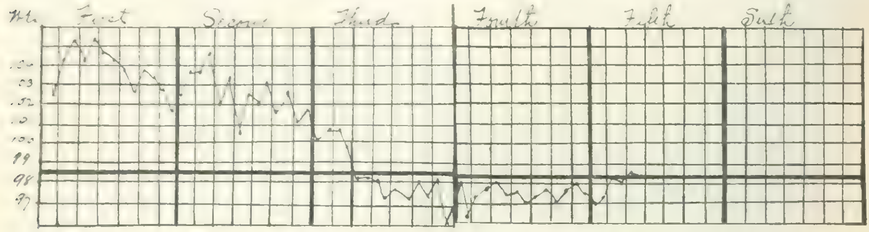

Chart XIV. Typhoid with Sub-normal Temperature.

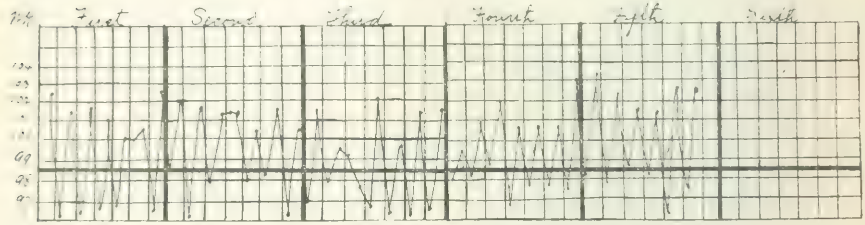

Chart XV. Tuberculosis.

I wish now to call your attention to the frequency with which the temperature runs *sub-normal* during the stage of convalescence.

This point is beautifully illustrated in Chart No. II and is well shown in Chart XIV.

In each case, as you will see, the temperature ran down to 95.5°, and continued subnormal for a week or ten days. This stage calls for stimulation, and requires care that undue strain should not be put upon the heart. It is usually accompanied by profuse sweating and occasionally we see *sudamina.*

This is something that I have seen but sparingly mentioned in books, except in Flint, where he says, "At certain periods the heat may not exceed, and it may often fall below, the standard of health." This is an observation in the third edition of Flint, published in 1868. I have not noticed any mention of it in any other authority; but I have probably overlooked the point; at any rate, it has frequently occurred in my experience.

And now I wish to show you Chart XV, as illustrative of the fact mentioned by Osler that acute tuberculosis is not infrequently mistaken for typhoid fever.

You will observe the daily changes of temperature, but you will also notice how evenly these changes run.

In conclusion, Gentlemen, I do not feel that I need make any apology for dwelling at such length on the subject of typhoid fever, nor in offering the remarks I make to-day. I feel that I have been able to present you a series of charts of unusual interest, and I trust that their characteristics will be fixed upon your minds and be of service to you in your work in the future. I wish especially to emphasize the point that typhoid does abort, and that it may also be present and the clinical thermometer show that the patient's temperature is normal or even sub-normal.

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Original Articles.

THE BACKWARD DISPLACEMENTS OF THE UTERUS.

BY C. P. STRONG, M.D.

The treatment of retroversion or backward displacements of the uterus can be very broadly divided into those cases in which retroversions require treatment and those which do not. Many a patient presents herself for examination in which none of the symptoms are dependent upon the retroversion. I think a retroversion, unless accompanied by a descent of the uterus, or unless accompanied by adhesions or displacements of the tubes and ovaries, is not one which necessarily requires any surgical treatment. When accompanied in this way the symptoms are very distinct and very manifest, usually direct, and also many reflex ones. The symptoms I shall not dwell upon, but at once enter upon the consideration of such methods as we have at present at our command for their amelioration if not cure.

Ten years ago, when I first began to pay particular

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[1] Remarks opening the discussion upon this subject before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, November 30, 1892.

attention to this subject, backward displacements of the uterus were never treated by other than what we would now esteem the most palliative measures; attempts at replacements by packing, bi-manual replacement, and by the wearing of supports. The change has been very abrupt within the last three years in the adoption of some other method by which a patient may be cured. It has been my experience that very few patients who have been benefited by wearing supports have been cured. The percentage is a very small one indeed; consequently, I think a patient presenting herself to us to-day with a retroversion or retroflection of long standing is entitled to a consideration of other methods of treatment than this

The first treatment naturally suggested is to try to replace the uterus. The simplest of these methods is by replacement under ether, and that can sometimes be done. About four years ago I read a paper upon this subject, and was quite enthusiastic in regard to the forcible replacement of the uterus and rupturing of adhesions, and thought I was getting a good deal of success with it. I have changed my views decidedly in that matter; and I think it is very seldom that replacement of the uterus under ether where there have been strong adhesions is successful. I think we may get it in place, but I believe the rectum, instead of being separated, is dilated, and the other intestines drawn up to accommodate themselves to the new position, consequently the relief is but temporary.

This operation I now regard as unsurgical and unscientific when considered as an operation to be attempted in any case of firm adhesions. Accepting the conditions which we find by a cœliotomy, adhesions of any considerable degree of severity are also accompanied by shortening and induration of the broad ligaments, usually involving tubes and ovaries. Coils of intestines are almost always similarly involved. When sight and touch can both be directly employed accidents frequently happen: rupture of the intestine, or of a varicose vein of the broad ligament, laceration of tube or ovary, hæmorrhage from a torn adhesion, — how much more danger when this forcible disruption is practised with absolutely no safeguard. Moreover, as I stated above, from a not inconsiderable experience, I have concluded that success is more apparent than real, more temporary than permanent.

The next operation which suggests itself, and which has given, I think, the impetus to surgical treatment more than anything else, is the operation for shortening the round ligaments. This is an operation which is practically done in one of two ways, either by shortening the round ligaments at their emergence from the abdomen, in the inguinal canal, or intra-abdominal shortening of the ligaments. In a case in which the abdomen is opened for another purpose the shortening of the round ligaments intra-abdominally is, I think, the better procedure. It is simple, and one which I think is very satisfactory. Where the abdomen is not opened, however, as in the case of retroversion or retroflection in which there are no adhesions, but which has existed so long that the uterus is chronically displaced, I think the external operation, that is, shortening the round ligaments in the canal, is by far the preferable operation.

The technique of this operation varies according to the wish of the operator. My own practice has been to shorten at the external ring in the majority of cases. Possibly I am influenced in that because I have had better results by doing so, and because I began in that way. Another method is to open the inguinal canal through a very minute incision, and fishing up the ligament with blunt hooks and drawing it through the fascia out on the side and fasten it there. I am not so favorably impressed by the operation as I had expected to be; and where I have tried it, it has seemed to me the difficulties have been equally as great as in the original operation which I did. It is unnecessary to enter into the detail of the different steps of the operation, but to speak in a word of its results. I have had an opportunity to examine a great many of my cases some years since the operation of shortening the round ligament, and I have found the results very satisfactory indeed, in regard to relief of symptoms, and anatomically. I have had a very small percentage of return of the displacement. I have seen cases in which the patient has subsequently become pregnant, and gone on to term without trouble. There has never seemed to be any drawback, to my mind, in the operation except one, and that is, I have found more cases of phlebitis following, coming on perhaps three weeks after the operation, than after any other operation which I have done, plastic or abdominal. The phlebitis has affected with one exception, I think, the left leg. This has come in cases where there has been no suppurative process or any suspicion of sepsis. It has followed a perfectly normal convalescence. I have seen three or four such cases, and have been unable to account for it. The same thing, I think, was formerly true of intra-abdominal operations on tumors of various kinds. I do not think we see that as often now. I know of one case in which tetanus was the cause of death after this operation. Aside from this I have not seen any ill results. I have never had a hernia follow. The uterus occupies very nearly its normal position after this operation, more nearly, I think, than after any other. There is one suggestion in this operation which I think it is well to carry out, and that is to furnish the patient a certain amount of artificial support for a period, in other words, adjust a pessary. I think that is a safeguard; and my own experience has confirmed that view. In two cases which I have seen, in one of which I did a cœliotomy subsequently, the uterus staid in place nearly a year, and then the displacement returned, and I operated to induce the menopause, and found both ligaments had separated at the uterine end. Another case in which I had displacement return, the ligaments had stretched out again; and that I think is one cause of the failure in a good many cases. Enough of the ligament is not pulled out. As I have seen other men operate, they are usually satisfied with pulling out an inch. I think you should pull out from two to four inches; if it is a nullipara, probably two to two-and-a-half inches will suffice. In a woman who has borne children, I think, usually you can bring up two to four inches and bring the uterus well up forward. Another cause of failure, I think, is, that there is not a educated hand bringing that uterus up into its natural position while you are operating. It is not enough to get hold of the uterus and pull it up, because if there is a flexion, it stays flexed and is lifted bodily, and it should be anteflexed. In the intra-abdominal operation I get up all the slack I can, then antevert the uterus and scrape the peritoneum on both the uterus and on the surface of the round ligament, and unite them with silk sutures, one on each side of the uterus, and on the [illegible] short and leave it. I have never seen any ill results follow.

It is universally accepted that, when adhesions exist, the shortening of the round ligaments extra-abdominally is not an operation to be considered. I personally do not admit this, having from a somewhat extended experience found that, although anatomically a failure, clinically I have in a not inconsiderable number of cases obtained success. The whole question depends, not upon the presence of adhesions, but their location. If so high up on the rectum as to allow it to to be easily dislocated upwards, if involving only other portions of the intestines than its rectum, and if the broad ligaments are not so shortened as to induce much tension, excellent clinical results may be reached. I have performed the operation many times. I regard it as a routine operation, and no longer entitled to a distinct classification.

The next operation which may be considered is the one in which we do a cœliotomy for the sole purpose of curing a backward displacement of the uterus. Associated with this condition almost invariable are strong adhesions; and with these adhesions we find the tubes and ovaries often blended in one mass by bands of organized lymph with the intestines. That reduces the operation from being one simply for replacement of the uterus to one possibly involving the removal of the tubes and ovaries. Where I have this to do, I think it is well if the tubes and ovaries can be saved, to do so, but then to adopt the plan also of shortening the round ligament by stitching it on to the front of the uterus, which pulls the ovaries and tubes well forward and prevents their sagging backward and behind the uterus, and tending to make the displacement recur. Then I stitch the uterus to the abdominal wall by silkworm-gut sutures. Four years ago I had the pleasure of reading a paper before the Massachusetts Medical Society on this subject. I had then done three cases; and they were perhaps among the very first, if not the first, done in the city for the sole purpose of replacing the uterus by this method of stitching to the anterior wall. My results were very unsatisfactory. One staid up a year but has since gone backward. Since then my success in keeping the uterus up has been better; but I do not think that is at all an ideal surgical operation, for two reasons. If you keep the uterus up against the anterior abdominal wall firmly united, you keep the uterus displaced. It is a question of displacement anteriorly instead of posteriorly; and I think it leads to the same condition (hyperæmia), though in less degree than the backward displacement. It relieves pressure on the rectum and kindred symptoms only. If the uterus stays up there, you have formed a place for the intestines to get in and become strangulated. Now, in this method of treatment, there are two ways of doing: one is to lift the uterus by stitches, which you leave; and the other is to remove the stitches and trust to adhesions which have formed to keep the uterus up. I usually leave in my stitches for about two weeks, possibly longer if there is no suppuration about them, and then remove them and trust to the adhesions which have formed being sufficiently strong to hold the uterus in place until the intestines have assumed their position behind the uterus normally to support it, and until the habit of the uterus towards flexion has been overcome. Also, in these cases I now shorten the round ligament at the same time intra-abdominally to serve additionally as support. I think this combined method of operating is the best we have.

These represent to my mind the principal operations for replacement surgically of the retrodisplaced uterus. There are others. The one in which the sutures are passed through the uterus, and then brought out through the vagina and tied, strikes me as being a very unscientific operation indeed. It requires a very peculiar-shaped needle; not that that is an objection, but the manipulation must be extremely difficult, and the results cannot in the hands of ordinary operators be successful. The bladder has been perforated a good many times in this operation, although no harm has resulted from it; still I think it adds an element of a great deal of danger.

To summarize, for purposes of discussion, there are at present the following recognized surgical procedures for replacement of the backward displaced uterus:

(1) Forcible rupture of adhesions during anæsthesia.

(2) Shortening of the round ligament extra- and intra-abdominally.

(3) Cœliotomy, with fixation of the uterus to the abdominal wall by permanent stitches, and by temporary stitches.

(4) Cœliotomy, with fixation of the uterus to the abdominal wall by temporary stitches, and intra-abdominal shortening of the round ligament.

THE USE OF COMPRESSED CARBONIC ACID GAS FOR THE FREEZING MICROTOME.

BY FRANK B. MALLORY, M.D.,
Assistant in Pathology, Harvard Medical School.

THE following method of making use of compressed carbonic acid gas, or carbon dioxide, was suggested and introduced into the Sears Pathological Laboratory about two years ago by Dr. S. J. Mixter, after observing the difficulties, especially in warm weather, connected with the use of ether and of rhigoline for freezing. Owing to the frequent requests received for a description of the process, it has been thought best to publish a brief account of it.

Compressed carbonic acid gas, or liquid carbonate as it is commercially called, is obtained in cylinders holding ten and twenty pounds.[1] The larger size has been found the cheaper and more convenient for laboratory and hospital use. The cylinders must be bought in order to keep them for any length of time; and it is best to own two, so that one can be used while the other is being refilled.

To adapt the cylinder for laboratory use, the following changes were found necessary: A circular block of iron an inch in thickness and of the diameter of the handle of the valve was fastened to the latter by two screws with nuts. Into this block were bored four holes ninety degrees apart and of a size sufficient to admit the end of an eight-inch handle, *B*. This greater leverage affords much better and more even control over the escape of the gas.

The cap covering the escape-pipe was unscrewed, and a hole bored through it large enough to admit of a small brass tube with a fine bore being driven tightly into it. The cap thus prepared can be kept and used on any other cylinder received. One end of a small but thick rubber tube, *C*, was then slipped over the brass tube and tied firmly on; the other end was fitted over the tube leading into the freezing chamber of the microtome, but was not tied on, so that it might act as a safety valve and slip off if the pressure became too great; otherwise the tube is likely to inflate and explode.

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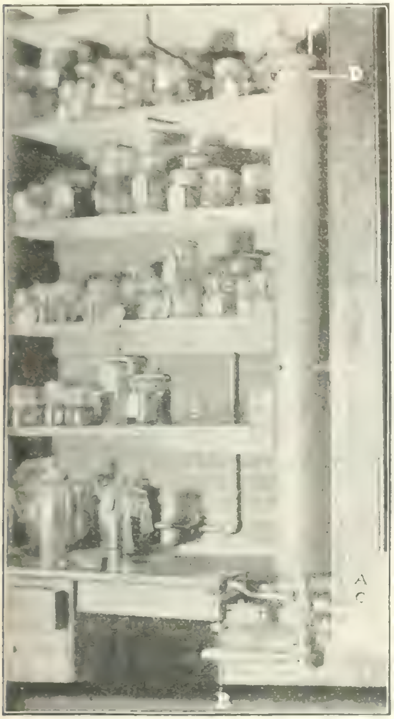
[1] A circular giving prices, etc., can be obtained from the American Carbonate Co., 421-434 East 19th Street, New York.



In connecting the cylinder with the freezing microtome, it must be inverted, so that the valve handle is below, and raised enough above the table to bring the escape-pipe on a level with the freezing-chamber. A projecting support at *A*, and two bands at *D*, sufficiently snug to keep the cylinder from turning, were found necessary. The freezing-chamber of the microtome should be shallow (about three-sixteenths of an inch) so that the gas, which by its own evaporation becomes frozen solid in it, may continue to free the specimen above it. The brass plate above the chamber should be thin, but still strong enough to stand considerable pressure, and the floor of the chamber ought to be made of a block of solid, hard rubber in order to render the loss of cold as small as possible.

This method of employing compressed carbonic acid gas for the freezing microtome has been in constant use in the Sears Pathological Laboratory for over two years, and at the Massachusetts General Hospital for over a year. It combines simplicity with remarkable cheapness, costing much less per freezing than ether or rhigoline. If a specimen be frozen too hard so that the section chips, it is simply necessary to pass the finger wet with water or salt solution, over its surface just before cutting in order to soften it.

The chief advantage, at least in a busy laboratory, of this ready and easy method of making sections, is that it enables one with the least expenditure of time to examine all the organs from an autopsy, and to complete the diagnosis and report while the case is fresh in mind and still interesting. Sections of tumors can readily be made in the same way and reports kept up to date, while those specimens which are worth keeping as well as those which require further investigation can then be preserved in the ordinary reagents.

A carpenter's plane mounted between two properly fitted pieces of thin board makes the best knife for cutting.

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Clinical Department.

CASES OF EXTRA-UTERINE PREGNANCY.[1]

BY A. WORCESTER, M.D., WALTHAM, MASS.

Case I. *Supposed Tubal Pregnancy. Rupture of sac, death from hæmorrhage, no operation.*

Mrs. J. A. K., a large, stout woman, thirty-four years old, during the nine years of her married life had borne two children, one seven years, one three years before. For a year after her first confinement she had trouble in the right inguinal region; her right leg was numb and lame. This trouble was aggravated during her second pregnancy.

On September 3, 1889, she consulted Dr. C. M. Hutchinson (to whom I am indebted for this history). She then complained of the same old pain in the right inguinal region, which she had suffered for three weeks, and of great weakness. Her menstruation hitherto regular, was then two weeks overdue. Physical examination showed the cervix uteri to be large and soft, the fundus in good position. There was tenderness on both sides of the uterus, but more on the right.

September 17th. Though in better condition, she still complained of the discomfort in the right inguinal region. She was then flowing, but scantily.

September 26th. Dr. Hutchinson was summoned, and found that the patient, two hours before, had fallen to the floor unconscious. She was vomiting, and suffering some abdominal pain; her pulse was 65, temperature 98°, respiration 30 and sighing. The next morning, after a restless night, her face was pale and pinched; the pain had increased; the abdomen was somewhat distended and tender; pulse 60, respiration 28, temperature 97.8°.

I saw her, in consultation with Dr. Hutchinson, that afternoon. Her condition then was even worse. She was tossing her head from side to side; her respiration was sighing and shallow; her pulse not countable at the wrist. The distended abdomen was dull to percussion at the sides.

Immediate operation was urged, and declined in view of her evident approaching death, which occurred a few hours afterwards. No autopsy was allowed.

Case II. *Tubal Pregnancy. Operation twelve hours after rupture, recovery.*

I saw this case in consultation with Dr. E. R. Cutler, and as his assistant. I am indebted to him for the history and for his kindly allowing me to report the case.

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[1] Read before the Obstetrical Society of Boston, June 11, [illegible], and November 12, [illegible].

Mrs. H. S. M., a slender woman, thirty years of age, had borne two children normally, the last nine years before. For the last few years she had suffered considerably with pelvic pain. She had had occasionally at about the menstrual periods, a dark offensive discharge from the uterus, of which she had been cured for the time by a thorough curetting of the endometrium.

On January 18, 1889, she complained of constant pain in the lumbar regions, and of an irregular discharge from the uterus, the blood coming at intervals in gushes. Physical examination showed the uterus to be tipped forwards and to the right. The fundus was tender. To the right of it nothing abnormal could be felt; to the left of it, and apparently in the broad ligament, could be felt a flattened mass, not very tender.

February 9th. Complained of dizziness and of occipital pain. Her menstruation was now one week overdue, and she had meanwhile twice had a slight discharge of blood. The uterus was now found slightly enlarged.

February 21st. The occasional traces of blood continued. The uterus was found to be still enlarging and to be lower down in the pelvis. She complained of headache, of nausea, of excessive thirst, of cravings for food, of sore breasts, of a sense of fulness at waist — troubles which she had experienced in previous pregnancies.

During the following three weeks she suffered much from nausea and vomiting, from occasional attacks of severe pain in the abdomen, and from an irritable bladder. But she had grown much easier, and had been gaining in every way, when early in the morning of March 23d (seventy-seven days from the date of her last menstruation) she was suddenly seized with most agonizing pain in the umbilical region. She soon became unconscious. Two hours later Dr. Cutler found her deathly pale, her pulse slow and very feeble. She complained of occasional waves of pain in the umbilical region. The abdomen was dull to percussion, especially on the left side. No change from the previous condition could be made out *per vaginam*. During the next few hours she gradually rallied, her pulse increasing in frequency and slightly in volume. That evening her temperature was 99°. She was still in a desperately weak condition, but able to assent fully to undergo laparotomy.

Operation. — On incising the peritoneum a large amount of fluid and clotted blood escaped. In this stream there floated out a two-inch fœtus, anchored by its umbilical cord. On following down this beautiful guide, the placenta was found still attached to the ruptured sac, which proved to be the right Fallopian tube. This and the right ovary were removed; the abdomen was washed out with boiled water and the wound closed with silkworm-gut sutures.

Although the patient suffered greatly from nausea and from abdominal pain during her convalescence, she nevertheless was soon well and has so since remained.

CASE III. *Hæmato-salpinx. Supposed tubal pregnancy, operation, recovery.*

Mrs. J. F. L., a strong healthy woman, twenty-nine years old, during her four years of married life had borne two children, the youngest one two years before. She had no breast milk; and four months after her confinement her menses appeared, and had since been perfectly regular. The last began on October 15, 1890. At the time when she should have menstruated again in November, she suffered the usual preliminary discomforts. A week later, November 19th, she had a sudden attack of pain in the left inguinal region, so severe as to prevent her walking to her bed. The pain was so severe only for a few minutes, and left a dull aching. Scanty flowing occurred that night.

On November 28th the pain came again, and again on December 4th even more severely. It was most distinctly located, always beginning at a spot three-fourths of the way from the symphysis pubis to the anterior superior spine of the ilium, but two inches above Poupart's ligament, thence radiating into the left vulva. She was attended on December 8th, 10th and 14th, by Dr. J. T. G. Nichols. The severity of the attacks of pain on these days was such as to require morphine; after each attack there was a slight flow of pale blood from the uterus.

On December 15th I saw her in consultation with Dr. Nichols, and agreed to his diagnosis of a probable tubal pregnancy. The next day she was removed to the Waltham Hospital for operation. Not until both the patient and myself were fully prepared for the operation did I dare allow a thorough bi-manual examination to be made of the supposed seat of trouble, for fear of thus rupturing the sac and causing a hæmorrhage. I was content at finding exquisite tenderness in the line of the left tube. This caution was, I believe, fully justified, and too great emphasis cannot be given its necessity. For when the patient was on the table under ether, and a thorough bi-manual examination was made at my request, by Dr. E. R. Cutler, I am satisfied that the cyst was ruptured; for before being etherized the patient showed no sign of such an accident, and when directly afterwards I opened the abdomen, before disturbing the parts involved, there welled up considerable blood. On bringing up the left tube, it was found to be swollen to the size of a finger. The ovary was attached to it, and between the tube and ovary was an organized blood-clot. After amputating this mass, and not thus controlling the hæmorrhage, I found the blood to be coming from the end of the omentum, which had evidently formed the upper wall of the cyst. This was ligated off in sections with catgut, and amputated. The right ovary was cystic, and in removing it the cyst was broken, allowing the escape of dark blood. The abdomen was flushed out with hot boiled water, a glass drainage-tube left in the Douglas pouch, and the wound otherwise closed with silkworm-gut sutures.

The patient made a most rapid recovery, returning to her home in a fortnight. She has since been perfectly well.

The specimens removed were sent to Dr. W. F. Whitney, whose report concerning the case is as follows: "I have never been able to satisfy myself of any fœtal structure in the specimen of hæmato-salpinx which you sent me. Possibly more careful sections, etc., which I hope to make in the future may help elucidate the problem; but at present it looks like a simple hæmorrhage."

In answer to my recent appeal, Dr. Whitney's reply is that he has not been able to find any additional evidence of pregnancy.

CASE IV. *Tubal Pregnancy. Rupture, operation, recovery.*

MRS. L. V. H., a small, slender woman, nineteen years old, had lost forty pounds during the three years of her married life. Once she supposed that she aborted very early. She had otherwise always menstruated regularly every twenty-four days till this spring. Her last period began March 28th. She was thereafter as well as usual till May 8th, when she was suddenly seized with abdominal pain so severe as to "double her up." Vomiting and a sudden diarrhœa ensued. She began to flow slightly. During the following week she had many similar attacks of pain, and a constant pain in the right inguinal region, which were accompanied by spells of vomiting and occasional slight discharges of blood from the uterus.

Dr. C. M. Hutchinson, who saw her several times that week, kindly reports to me that there was a slight fever, a tenderness in the right inguinal region, and, on examination *per vaginam* a sense of fulness on the right side of the uterus.

Dr. J. Q. A. McCollester found the patient suffering from peritonitis, May 21st. During the next few days a tumor developed in the right inguinal region.

On May 24th I first saw her, having been called in consultation by Dr. McCollester, and Dr. Parsons of Ayer, who had formerly been her physician. She was then lying with her knees drawn up and as if pinned fast to the bed. Her countenance was pinched and anxious. Her pulse was 130, temperature 103°.

The abdomen was very tender, and in the right inguinal region there was an evident tumor the size of a cocoa-nut. There was a slight ichorous discharge from the cervix. The anteverted uterus was freely movable; to the left of it all was normal, but to the right there was extreme tenderness, and a slight resistance.

The diagnosis was made of an abscess connected with the right Fallopian tube. An operation was not assented to by the family until the following day, May 25th. The patient's pulse was then 130, her temperature 104°.

On incising the abdominal wall in the median line an organized blood-clot was found adherent to the peritoneum, and on cutting through it a pint or more of dark blood escaped, and fully a pint more of clots had to be scooped out. I found the right Fallopian tube dilated and ruptured. This was amputated above a silk ligature. Several deep sutures were then taken next the uterus through the torn edges of the peritoneal investment of the broad ligament, which had become much softened. The cavity was then washed out with hot boiled water, and packed with iodoform gauze around a glass drainage-tube leading down into Douglas's pouch.

She recovered well from the operation. There was considerable oozing of bloody serum for several days. The drainage-tube was removed at the end of a week, and for the week after there was a free discharge of pus from the sinus.

Her temperature was about 100° for the first week and normal thereafter. Her bowels were moved on the second day by salts. Her appetite became extra good, and her convalescence is now assured.[2]

The specimen removed was submitted to Dr. W. F. Whitney for examination, whose report is as follows:

"The specimen consisted of numerous dark masses of clotted blood, and a small portion of the Fallopian tube. The latter at its point of removal was of normal size, but suddenly dilated into a cavity the size of the end of the thumb, which was lined with irregular projections to which clotted blood was adherent. Microscopic examination showed folded and rather arborescent projections covered with columnar epithelium similar to the fimbriated end of the tube. Entangled in the clotted blood, adherent, were clumps of large flat cells similar to those of the decidua, and differing from the normal lining of the tube. There were no villi to be distinguished, nor were any fœtal remains found.

"My opinion is that this is a case of tubal pregnancy occurring near the fimbriated end with rupture at a very early stage."

(*To be continued.*)

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SUBCUTANEOUS SALT INJECTION FOR HÆMORRHAGE.

BY ADDISON S. THAYER, M.D., PORTLAND, ME.

The following case may be added to the fast accumulating evidence in favor of simple substitutes for transfusion.

November 8, 1892, at the Maine General Hospital, Portland, a man of twenty-seven, in the third week of typhoid, without premonitory symptoms of hæmorrhage, began to bleed profusely from the rectum. In less than one hour, the amount of blood lost was between one and two quarts. The radial pulse was imperceptible. Pallor, profuse sweating, and other signs of collapse were present. Thirty minims of tincture of digitalis and twenty minims of ergotole were given hypodermically, and an ice-bag applied to the abdomen. Half an hour after hæmorrhage was first discovered, the subcutaneous injection of a one-half per cent. solution of common salt was begun by the writer in the following way:

A two-quart rubber fountain-syringe was sterilized by letting sublimate solution run through it. The end of the syringe-tube was slipped over the hilt of a sterilized needle about four inches long, a part of the outfit of a Dieulafoy aspirator. The skin of the thigh was scrubbed with carbolic, and, while the solution was running out, the needle was plunged into the subcutaneous tissue. In fifteen minutes, with the aid of constant massage, about a pint and one-half of fluid entered the circulation. After a short interval, the same quantity was injected into the other thigh. In less than half an hour after the injection began, a pulse could be felt readily at the wrist. The force of the systole gradually increased, and in three hours the pulse was 136. Convalescence has been rapid. No sign of local trouble appeared in either thigh.

In a similar case I should make two changes in method of procedure: (1) For the effect of heat upon collapse, I should aim to have the water enter the tissues at a temperature of 105° F. In the case reported above, by the time the solution reached the end of the syringe-tube, its temperature was probably not higher than 98° F. (2) Under like circumstances I should have no hesitation now in introducing subcutaneously four or five pints of fluid, about one-thirtieth of the body-weight.

Nearly every household is provided with a syringe, while every family has water and salt. Excepting the means of sterilization, the only other thing needed for this simple expedient is a suitable needle. The current admitted to the tissues by a common hypodermic needle is too slow for such a crisis. A larger needle may be carried conveniently in a thermometer-case.

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[2] She has since been a [illegible] healthy woman.

A one-half per cent. solution of salt may be approximated by dissolving a heaping teaspoonful in a quart of water.

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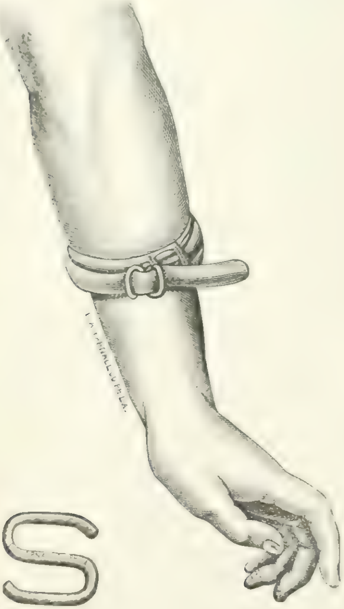
New Instruments.

A SIMPLE TOURNIQUET CLASP.[1]

BY H. AUGUSTUS WILSON, M.D.,

Clinical Professor of Orthopedic Surgery, at the Jefferson Medical College, Philadelphia.



It must be evident to every one who has occasion to use the elastic tourniquet and Esmarch's bandage, that the simplest form of all methods of fastening it, when applied, is either not known, not efficacious, or possesses other disadvantages. The method referred to, is to pass the loop of rubber bandage underneath one of the last turns as it is applied, which by contraction holds the end in place. The rubber tourniquet, as sold by the shops in this country, is always provided with a chain, of about six or eight inches in length, for the purpose of holding the end of the bandage and keeping it from slipping. The use of this chain necessitates the application of the entire length of the bandage whether it is required or not. It was in order to dispense with this chain that I devised the simple form of clasp that is shown in the accompanying illustration. Messrs. E. A. Yarnall & Co., surgical-instrument makers, in this city, have made the clasp, following my directions. It consists of a simple letter S made out of one-eighth inch German-silver wire, and is so simple in its construction that any one can twist a piece of wire into the necessary shape, as I did with the original design. The manner of using the clasp is so clearly shown in the cut that a description is not at all necessary. Its advantages are, simplicity of construction and use; that the tourniquet may be clasped at any point; that while in use it cannot slip; and that the tourniquet may be unclasped with the greatest ease. It would appear that there was some necessity for a form of clasp of this nature, in view of the extensive advertisements in English medical journals of a *patented* appliance of very much more elaborate construction and therefore quite expensive. Continued trials of this simple clasp, when used with ordinary elastic rubber-tubing, have shown that it was all that was required for the purpose; and it is hereby given to the profession, with the hope that it may tend to displace more cumbersome and unsatisfactory methods of accomplishing the same end.

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Medical Progress.

RECENT PROGRESS IN DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

(Concluded from No. 3, page 64.)

AKINESIA ALGERA.

Under this term Möbius[10] describes an affection which is characterized by such severe pain upon motion that motion becomes impossible, yet there is no discoverable basis for the pain. It occurs in neurotic subjects, in whom a condition of nervous weakness develops. Sometimes the pain is directly associated with motion, sometimes it follows it and shows itself not only in the parts moved, but in the other parts of the body, and may finally lead to almost complete loss of motion so that the patients seem paralyzed. With these conditions are sometimes symptoms of neurasthenia, but hysterical symptoms have not, as a rule, been present. Möbius thinks that this disturbance is due to inherited degeneration of the nervous system; it is connected with mental strain and the coexistence of neurasthenia, but it is to be regarded as a psychical affection. The symptom is to be regarded rather as hysterical than as hypochondriacal. The pain of akinesia may be regarded as an hallucination. The prognosis he regards as doubtful. In a second paper on the subject, Möbius[11] reports two new cases, one of which was written by the patient himself. In one of the cases, the patient remained motionless in bed, in a dark room, because any ray of light produced an intense pain. Möbius has advised hypnotism in the treatment, but he was unsuccessful in its application. Longard[12] reports a case where there seemed to be both a psychical and physical hyperæsthesia. The hypochondriacal conditions were absent and no symptoms of paranoia, in the strict sense, could be found. There were furthermore no symptoms which pointed distinctly to hysteria, but Longard regards his own case as resembling, only in a highly exaggerated form, the condition once described under the name of spinal irritation. Erb[13] does not consider, however, that this assumption of Longard's is correct, for there are many distinct differences between spinal irritation and akinesia algera. The latter, he regards as decidedly of psychical origin though often associated with severe neurasthenia, hysteria or hypochondriasis. J. J. Putnam[14] has also reported a case of a middle-aged man, whose trouble had existed since childhood, but it had greatly increased. He belonged to a family of nervous invalids. Excessive pain appeared, immediately following the use of muscles; he could not walk a third of a mile without pain which came on with cessation of exertion. This was invariable. There was no tenderness; the pain was diffused through the muscles, chiefly in the muscles used. In the cases thus far reported the symptoms seem to be distinctly of psychical origin. They came on only in the degenerate, and they must be regarded as due to morbid processes of association, akin to the various forms of morbid fears.

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[1] Read before the Philadelphia Academy of Surgery, January 9, 1893.

[10] Deutsche Zeitschr. f. Nervenheilk., i, 121.

[11] Loc. cit., ii, 436.

[12] Loc. cit., ii, 455.

[13] Loc. cit., iii, 237.

SURGICAL TREATMENT OF EPILEPSY.

Kümmell[15] reports ten cases, in which various operative measures were employed in the treatment of epilepsy, and reviews the various methods which have been suggested. He collects forty-five cases, where Alexander's operation of tying the vertebral arteries had been done. Eight of these gave distinctly good results; in eleven the condition improved; nineteen were not benefited, and in seventeen the result was unknown. To these, he reports two cases of his own in which the vertebrals were tied, first on one side and then on the other, but with only an extremely transitory result. In this operation the possibility has been suggested that all the fibres which pass from the superior ganglion of the sympathetic were cut off by the ligation, and hence Alexander himself has advised the removal of the superior cervical ganglion. This was done in one of Kümmell's cases, but here again the result was merely temporary, and after the operation of tying the vertebral and removing of the ganglion, the condition gradually grew worse. In four cases of epilepsy, where there was no history of previous trauma, and where the attack pointed to no special motor centre in the cortex, he trephined over a tender spot in the skull. In these cases he found no perceptible changes at the point of trephining. The first two cases were materially improved; the second case was merely relieved of the tenderness; the fourth case, which presented more the features of petit mal, improved as to the psychical condition, although the attacks continued in a less severe form. Three cases presented distinct cortical epilepsy; in one, a portion of thickened dura was removed, and the patient had been for three and a half years without an attack; the second case presented spasm in the right arm and face, no physical changes were found in the brain except a possible projection in the inner portion of the skull; here no benefit was obtained, but the author regrets that a portion of the cortex was not also removed; a third case was of traumatic origin, and presented spasm in the right side of the face and the right arm; the thickened dura was removed, and the case has thus far continued well.

Gerster and Sachs[16] report ten cases of epilepsy where trephining was performed, seven of which were traumatic, one due to hereditary disease, one a case of infantile cerebral hemiplegia, and one a case of non-traumatic localized epilepsy, due to early acute brain disease; one case showed great improvement; three, slight improvement, and one showed a little improvement immediately after the operation, but the attacks returned. In every case, however, the attacks recurred after a lapse of several months. Sachs claims that the excision of cortical tissue of the diseased area is not superior to the older method of simple trephining, though a focus of disease may be the actual case of epilepsy. Epilepsy, as a rule, does not manifest itself until widespread changes have appeared throughout the entire brain. If, therefore, we operate upon cases which have run a course of many years, removal of the initial focus of disease will have little effect upon the general sclerosis that has been established. He, therefore, suggests prompt surgical interference in all cases of injury to the skull where there is any reason to suppose that harm has been done to the brain, and also in those cases where a localized hæmorrhage of traumatic origin, is more than likely to give rise to epilepsy; later on, excision of the cortex seems a questionable method. If patients could be promised a freedom from future attacks, excision might compensate for the paralysis caused by such excision, but such a promise can scarcely be given except in the most acute cases. Although the prospects for much benefit are gloomy, yet, considering the seriousness of epilepsy and the slight danger attending the opening of the skull, Sachs believes it the surgeon's duty in every case in which there is a shadow of doubt about the effect of an injury to the skull or brain, to trephine the skull and thus remove the cause of an epilepsy about to be developed.

ELECTRICITY IN NERVOUS DISEASES.

Schultze[17] has published a small monograph, in which he endeavors to prove what benefits we may expect from electricity in the treatment of nervous diseases. In cases of degeneration of the peripheral nerves, he declares that he has never seen any material change in the process of recovery from such disease under the use of electricity, no matter how early electrical treatment has been begun, although he does not deny that the processes of regeneration may be indirectly influenced by an increase in the blood-supply of the degenerated portions, and by the favorable action of muscular contractions. Possibly it may be of advantage in such cases to use electricity for brief intervals a number of times a day, for which purpose an intelligent patient may be supplied with a battery for home use. In exudative neuritis we may expect a catalytic action of the current if the axis cylinders are not too far destroyed. In poliomyelitis the results are unsatisfactory, and are not worth the time spent, for cases may sometimes show a spontaneous improvement without any electrical treatment. In tabes, electricity is practically of no value, although it may sometimes relieve the sensory and vesical disturbances. With the other organic diseases of the cord and brain the same may be said. From electricity we see very few benefits in comparison with the many negative results. In neuralgia, he has obtained little benefit from electricity, and in the true tic-douloureux he has never succeeded in obtaining either cure or improvement;

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[14] Journal of Nerv. and Ment. Dis., September, 1892.

[15] [illegible] Med. Wochenschr. [illegible] 1892.

[16] American Journal of the Med. Sciences, November, 1892.

[17] Ueber die Heilwirkung der Elektricität bei Nerven- und Muskelleiden, Weisbaden, 1892. Ref. Neurol. Centralblatt, November [illegible], 1892.

in hemicrania he has also abandoned the use of the current, for electricity is distinctly less beneficial than the anti-neuralgic drugs now in use. In sciatica he uses electricity usually in connection with rest in bed, which is by itself distinctly beneficial. In convulsive tic, and in paramyoclonus he has seen a temporary cessation of the spasm, but in tetany, writer's cramp and the other occupation neuroses, he has obtained no improvement. In neurasthenia, electricity almost always plays a part in combination with other methods of treatment, but here we must consider the psychical factor. Electricity also has a distinct action in hysteria, and this action is apparently the basis of the reputation of electricity in nervous diseases. In myalgia and acute muscular rheumatism he has often seen rapid benefit, but he is not able to predict it with certainty. He is sceptical as to the benefit of electricity in muscular atrophy following joint disease. Its action seems to be more favorable in certain affections of the intestines, such as chronic congestion of the stomach, atony of the bladder and enuresis, but here, too, we cannot prophesy that its use will be beneficial.

Eulenburg[18] has also considered the question of the value of electricity, and especially its relation to suggestive therapeutics. Möbius some years ago had already asserted that much of the value of electricity was due, not to electricity, but to suggestion, and that four-fifths of the cures attributed to electricity were merely the action of suggestion. Möbius, for example, claimed that paralysis of central origin was incurable, while paralysis of peripheral origin got well of itself, and there were no known facts, proving that electricity could hasten this process. Eulenburg claims that with the treatment of paralysis must stand or fall the justification of electro-therapeutics, and he cites, more especially, the vast experience of Duchenne (of Boulogne), who, he claims, showed most convincingly, that the process of recovery was materially hastened by electricity. For example, out of five or six cases of mild radial paralysis, recovery under electrical treatment occurred on an average within thirteen days, while, if left to itself, the paralysis was usually not well before four to six weeks. Electricity may excite and hasten the process of regeneration in the nerves, or, it may influence the nutrition of the muscles and paralyzed limbs, or perhaps both. In regard to hastening the regenerative processes in the nerves, we can say nothing definite, but the influence of electricity on the generation of heat, and upon the nutrition of paralyzed parts, in traumatic paralysis, is so evident it can scarcely be doubted. Déjérine has, moreover, shown that after section of the sciatic nerves in guinea-pigs, electricity diminished the amount of gangrene and delayed the atrophy. These experiments, Möbius thought, were too few to be of value, but they are paralleled by various experiments of previous observers, and are shown to have an equal application in man by the case reported by Starr, where, with a double peripheral paralysis, the arm to which electricity was applied gained much more rapidly than the other arm. That electricity can cause the absorption of apoplectic or myelitic foci can hardly be claimed, yet, in many cases of hemiplegia, the limb gradually regains power, and this gain is often dependent upon the proper, timely, and persistent use of electricity. Möbius, himself, has claimed that many pains, many paræsthesiæ, many symptoms of motor irritation, and many irregularities in the activity of different organs are benefited by electricity, but this he claims, is due to the influence of suggestion. The same, however, may be said of drugs, which will also relieve many of these conditions, and although suggestion may have some influence in some cases, in other cases it is only fair to claim that electricity itself may be beneficial.

REST TREATMENT.

In an interesting address, which was made before the New York Academy of Medicine, Weir Mitchell[19] once more returns to the subject of the rest treatment, and lays down rules more exactly. It is a treatment of detail and the management of the minutiæ is of great moment. The physician, therefore, must study the details of the treatment with the utmost care, and unless the treatment is carried out rigidly in all its details it may prove a failure, whereas, under proper conditions, it may be successful. The choice of the nurse is of extreme importance, and in this treatment if the patient does not like the nurse, no matter how good the nurse may be, it is wiser to change her. In regard to massage, the American plan of careful and systematic massage is undoubtedly what is beneficial. Massage is often ill done, and in such cases it is apt to do great harm. The daily use of electricity is the one thing that may be omitted, although Mitchell does not advise the physician to do so. In milder cases, where the patient is not ill enough to be put in bed and not well enough to be cured by drugs, or even by tonics with change of air, he advises what he calls a partial rest treatment, of which the details must be arranged by the physician with great exactness and care. The rest treatment is applicable in cases of alcoholism, in all forms of neuritis, in obstinate cases of chorea, in all grave cases of the morphine habit, in many cases of backache and headache, and in sciatica where he advises a long flannel bandage from the feet to the groin, and an external splint from the ankle to the axilla. He also gives precise directions for certain methods for relief of troublesome symptoms, such as the insomnia of neurasthenia, for which we must refer to the original article.

Sinkler[20] also reviews the essential features of the rest treatment. It consists, he says, in absolute rest, over-feeding and passive exercise in the form of massage and electricity, and isolation from relatives and friends in hysterical and neurasthenic patients. Without the hearty coöperation of the patient success will be difficult to obtain. The rest must, as a rule, be complete, the patient must remain in bed all the time, and in some cases, must be fed by the nurse. Isolation is of great importance; not only should visitors be excluded but no letters or messages from friends should be received. Massage, moreover, is essential and should not be performed by the nurse as the masseuse requires constant practice to keep her hand in; electricity is to be used as a means of passive muscular exercise. In cases with much dyspepsia a strict milk diet should be used at the start, and milk is to be taken freely in every case. Although the rest treatment has been most extensively and successfully used in hysteria and neurasthenia, it is of extreme value in joint and bone diseases, in acute inflammation of the spinal cord, in tabes, in spastic paraplegia, and in neuralgia and neuritis. In many cases of mental disease, too, especially melancholia and the insanity of exhaustion — the forms of insanity which depend upon malnutrition — the rest cure becomes of extreme value. Epilepsy may be benefited somewhat by the treatment, and chorea is often very distinctly helped; it is also to be employed in chronic alcoholism and the morphine habit and in certain forms of uterine disease as well as in lithæmia and exophthalmic goitre.

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[18] Berliner klin. Wochenschr., February 22, 29, 1892.

[19] New York Medical Record, December 24, 1892.

[20] Journal Nervous and Mental Diseases, May, 1892.

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

G. H. WASHBURN, M.D., SECRETARY.

Regular Meeting, Wednesday, November 30, 1892, Dr. Sinclair in the chair.

THE OPERATIVE TREATMENT OF BACKWARD DISPLACEMENTS OF THE UTERUS.

Dr. C. P. Strong opened the discussion on this subject with a paper which will be found on page 80 of this Journal.

Dr. R. A. Kingman: I had come here largely with the idea that the discussion to-night was to be chiefly upon the merits of the Alexander operation. To be sure we are taking into consideration in the broadest sense the treatment of retrodisplacements of the uterus, and yet during the past two or three years the operative treatment which has been most under discussion here and which has excited the most interest has been the Alexander operation. It is only within two years that I have done the operation myself. I have watched it a long time, however, and the cases in which I have used it have been such as to give me very positive opinions on the subject. We are all familiar with that long list of cases of extreme retrodisplacement with or without prolapsed ovaries and associated with more or less severe and disabling symptoms, which used to torment our lives in the clinics a few years ago. They would go from clinic to clinic and be treated year in and year out, with little or no benefit. One or two of those cases I have made vain attempts to get hold of in the past year, hoping I might now do an Alexander and so benefit them, but apparently they have been frightened or doubt the possibility of medical aid. The cases it seems to me, which are in most crying need of such operation, are those cases of retrodisplacements with adhesions more or less firm, and particularly those in which there are associated prolapsed ovaries. I mean, of course, cases only which can be replaced under ether. If they cannot be replaced the Alexander operation cannot be done. If they can be replaced, I see no reason why the risk of intra-abdominal operation should be added. I have in mind cases in which I have attempted the Alexander operation, and have given it up without incising the skin simply because I found the adhesions were too strong, safely to be separated. These cases have since gone through a course of six months' packing more or less until the adhesions have become loosened and the uterus could be replaced manually under ether; then the Alexander operation has been done. I recall one case: the patient was in my office about a month ago. She is now working as a servant girl with no difficulty, the uterus in perfect position, all symptoms absent, and one year ago a bedridden invalid unable to leave her bed in the hospital for a month, while we were trying to get her well enough to do the Alexander operation. Both the consultant and myself utterly failed to replace the uterus. It seems to me a result of that kind is a strong bit of testimony in favor of the Alexander operation. I have in mind other cases in which patients have been packed in my office over a year with very little result upon the adhesions. Under ether it is possible to loosen these adhesions and replace the uterus, and the operation has given absolute relief from symptoms. A patient was in my office Monday of this week who came to me last summer, an invalid between three and four years, suffering intensely three weeks out of four, flowing more than a week at each period and suffering at that time almost excruciatingly, rarely passing a night during the month without being awakened by pain, either in the abdomen or streaming down the leg, as a result of prolapsed ovary. There was second if not third degree of retroversion of the uterus. She is now entirely well both as regards cure of the anatomical and the symptomatic conditions. Such cases as that cannot be controverted as regards testimony concerning the present result. Concerning the remote result I cannot speak from experience.

As regards the element of danger. I have seen no worse result from the operation than suppuration of one or both wounds, and that has simply retarded the convalescence from one to three weeks. I have seen one or two failures. One or two cases I thought were failures in my own practice turned out to be successes after a short time, both as regards symptoms and the anatomical relations. I recall one complete failure in my own experience, and that I consider was due simply to the fact that I did not stretch the ligaments enough. The uterus came without the least difficulty; I took up between two and three inches of slack ligaments and left the uterus in perfect position, and yet in three weeks it was almost as badly retroverted as before. The uterus came so easily that the ligaments were not stretched. In the clinics within the range of my observation I believe no harm has come to the life or health of any patient as result of the Alexander operation.

The technique of the operation I think is usually beautifully simple. Exceptionally, the operation is an exceedingly difficult one, from the anatomical peculiarities in certain patients which are very misleading, and when one runs across a case of that kind he wishes some one else were doing the operation, not he. I have not seen a case where it was not possible to find the ligament, follow it and get it out successfully.

As regards the other operations I have had less experience. Within the past two weeks I have done two ventral fixations, one of them, a case in which a brother physician had done an Alexander, but unsuccessfully, and at the patient's request ventral fixation was done. The other was in a case yesterday, of pus tubes, in which after removal of the tubes and ovaries the uterus was stitched to the abdominal wall. I believe that is an operation which is perfectly justifiable and yet only as a resort where the abdomen has to be opened for other reasons than for the displacement, and also in those cases where the Alexander operation has failed.

Dr. J. W. Elliot: One point that Dr. Kingman mentioned I would like to speak of before speaking in general terms of the operation, and that is having removed both tubes and ovaries, as I understand it, he fixed the uterus to the abdominal wound. I have had occasion to consider this subject a good many times and after thinking it over a good deal it seems to me that when you remove both ovaries and tubes the best thing you can do to the uterus is to leave it retroverted, for this reason, that you bring about the menopause and the uterus will surely atrophy. It is abnormally placed if you fix it to the abdomen and I think almost more abnormally than when retroverted; therefore in those cases I leave the uterus retroverted. If I have to open the abdomen to take out one ovary and the uterus is retroverted I sew the uterus forward in one of the various ways, because I have the abdomen already opened, but I do not like the operation of ventral fixation. I think the uterus is very abnormally fixed under the best of circumstances, that it is pulled too high out of the pelvis, that it is unnatural and uncomfortable in certain patients, that it is not permanent and does not cure the symptoms. This is in my experience. On the whole I think the operation is not satisfactory. I occasionally do it because I think it is the best thing under all the circumstances, but I am not at all satisfied with it. I think all the operations that fix the uterus forward do it more or less unnaturally and abnormally. I think especially the ventral fixation does.

As to the Alexander operation I think very favorably of it. The cases that I have operated on have done well, and, as Dr. Kingman has said, the cases that used to be our worst cases are now our best cases. Of course every one knows the indications of the operation, that it is especially valuable in cases where a pessary cannot be worn either from nervous dislike or from some tenderness in the posterior cul-de-sac or a tender ovary. I entirely agree with Dr. Kingman that the operation is out of the question unless you can reduce the uterus. I think the tearing up of the adhesions before the operation is done is a proper procedure and if they cannot be torn I do not think there is any use in doing the operation.

In regard to the technique of the Alexander operation, which I regard as the best of the retroversion operations, in a general way I think that my patients have been more comfortable when I have not pulled the ligaments too tight. Dr. Kingman said he regretted not pulling the ligaments tight in one case. When they are tightly pulled I have noticed that the uterus huge the abdominal wall and the bladder, and in one patient there was a great deal of pain from dragging on the rings, this patient came to me and wanted me to cut the ligaments loose again. She was very much less comfortable from the dragging on the rings than from the dragging of the retroversion. So although I like to get the uterus very far anteverted before fixing it, I do not pull it as tight as I can by any means.

I find myself doing one thing which is not according to Alexander. The operation is usually done by passing an aneurism needle just in front of the opening of the ring and bringing up all the fat and pulling everything out until gradually you find yourself in possession of the ligament alone. I find it is much easier than I had supposed to take a knife and dissect down into the fat; you can easily find the ligament in this way. It is a great deal easier than one would think at first. Whereas taking it up and pulling indefinitely always seemed to me rather unscientific and vague, and sometimes you break off the little fibrous end that goes down to the symphysis. I think very favorably of the operation.

Dr. E. W. Cushing: In regard to Alexander's operation I wish to take somewhat the position of an *advocatus diaboli* to-night and to call attention to some disadvantages of the operation. I have had my share of experience. I began doing the operation in 1887 when we pulled the two ligaments out and tied them together. That was not such a bad way either. They dried up into a cord and you were sure they would not slip back. I have performed Alexander's operation a good many times and the more I do it the less I like it. The reason why it is necessary is very apt to be congenital atrophy of the round ligaments. Where the ligaments are of natural size I prefer the operation of Kellogg, to which Dr. Strong has referred and that is simply puncturing the roof of the canal of Nuck, putting in a little button-hook or strabismus-hook and hooking the ligament out. I think Dr. Blake will say that where the ligament can be reached in this way the operation is as pretty a thing as can be done. Where it cannot be got that way the chances are that the ligament is not as it should be, and then it is best to go in at the external ring, and fish for it. I was called the other day to Lynn to do the operation. On one side the ligament came right out; on the other side I had to open at the end at the ring, and turn out the fat of the canal of Nuck. There was what purported to be a ligament not larger than number two catgut, a little fine strand with the artery, looking like a small nerve.

Now what are some of the disadvantages of the operation? In the first place, you open cellular spaces there which it is difficult if not impossible to properly get brought together by passing a ligature around them. When we have got to the fascia we open a large cellular space under the skin, under the fat; and I distrust and dislike operations that leave cellular spaces so that they cannot be compressed by the ligatures. I never had any trouble from the operation, more than suppuration, but I do not feel happy when going to do it for fear it will not be satisfactory. I do not feel satisfied when I have done it for I do not see why there might not be a considerable suppuration run up between the fat and abdominal fascia. Nevertheless I am perfectly ready to admit that Alexander's operation is very useful. It has a future and a proper place in simple uncomplicated retroversions, where a woman wants to get rid of wearing a pessary. I cannot see how any woman would like to wear one if she could help it, and in my experience this operation cures those cases. The worst sequelæ I ever had was a hernia coming on after the operation in one case. I shall have to dissent from the position of many about the propriety of doing the Alexander operation where there are adhesions. Every man's mind is moulded by the class of cases he gets. My patients are very largely from out of town, many from New Hampshire and other parts of New England, and they cannot have six months' packing. Another man has a clinic where his patient can come in and he can give six months' packing. I do not consider it scientific or surgical to try to rupture adhesions without opening the abdomen. I have done it. I have done Schauta's operation, as at first promulgated, without bad results, still I think the operation is wrong. I do not think it is proper or surgical to do what cannot be accurately controlled and measured. Where the uterus has to be brought forward it may be that it will come forward by putting the woman in the knee-chest position and using a little patience; the uterus if it can be freed from its impaction and faulty position can be brought forward but this is not rupturing adhesions. Many of us have had the experience, however, that such a uterus will come right back again. You can get a pessary in, but back goes the womb, and that is the reason the woman cannot wear a pessary. A woman with a simple uncomplicated retroversion of the uterus, occasioned merely by its weight and by the length of the round ligaments, can wear a pessary. The woman who cannot has perhaps trouble of the tubes with adhesions which pull the uterus back, or she may have a little tumor which presses it back.

I am disposed to deny that there is any more danger in opening the abdomen and fastening the uterus forward than there is in the Alexander operation. I would like to know where the case is on record of losing a woman from a clean, proper hysterrorhaphy? It was claimed when Kelly was reporting the cases a year ago that there was not a case on record. There have been cases of death from Alexander's operation, and one of them in this city, if I am not misinformed. I believe where there are any adhesions, where the uterus will not come forward and stay there the scientific thing to do is not to waste time with packing, not to rupture things where you don't know what you are rupturing, but to open the abdomen and find out what you have, separate adhesions, and bring the uterus forward. How shall we fasten it? I don't like the ventral fixation as first described. I like very much Wiley's operation, that is to say, doubling the ligament on itself, after slightly scaryifying with the point of the needle the surfaces to be apposed. The fold of the ligament thus made is sewn together with catgut. In order to hold the uterus firmly in position until the union of the folds of the ligaments are consolidated, I add a single suture of silkworm-gut on each side carried through the corner of the uterus at the point of origin of the round ligament. Both ends of each suture are carried through the abdominal wall and passed through a button and tied together. These sutures and buttons remain in place for about ten days, when it may be safely assumed that the uterus will be retained in its proper position by the shortened ligaments.

One operation that has not been spoken of is Byford's, which, as I remember it, consists of getting the uterus forward and sewing the cervix on to the posterior peritoneal wall, or another way is to hold it there and put in alcohol or something to stir up adhesions. I don't think that is proper surgery.

These I believe are the main points which I have to bring up. "I hope I have not said anything I am sorry for," but I feel quite strongly on the matter.

Dr. W. L. Burrage: I have very little to say on this subject as the ground has been gone over very carefully by the previous speakers. I am very much in favor of the Alexander operation. I am a recent convert to it. In the last year and a half I have had a fair number of cases and have had very good success with them. It seems to me it is a very valuable operation in a certain large class of working women who have a retroversion and are unable to devote the time necessary for a course of packing and the placing and subsequent care of a pessary. It seems to offer to them a very good means of relief. There is one point I do not think has been spoken of to-night, and that is the necessity of correcting the endometritis which generally accompanies a retroversion. If that is not corrected, I think it is very likely to prove troublesome later on, so that it is my custom to curette the uterus before doing Alexander's operation. With reference to comparing the Alexander operation with the ventral fixation, I read an article yesterday in the October number of [Nouvelles Archives d'Obstet. et de Gynecologie] in which the writer, Dr. [illegible] of Bordeaux, reported seventeen cases of ventral fixation by different operators which had become pregnant subsequently, and in four the patients had abortion, or 23%, and many of these cases had had hæmorrhages, and pain in the cicatrix during pregnancy. He also gave fourteen cases of pregnancy following shortening the round ligaments, with only one miscarriage and that in the early months and due to accidental causes. These figures point toward the Alexander as the preferable operation as far as subsequent conception is concerned.

Dr. Conant stated in answer to a question, that shortening of the round ligament had an effect in bringing up a prolapsed ovary, and that the first case in which he did this operation was for that purpose.

Dr. Ingraham: Dr. Wolcott and I have done about thirty cases, and several where there have been quite firm adhesions which have been broken up under ether and the uterus brought in proper position, and we have had no bad results whatever. In one case done about a year ago, Dr. Kingman being with us, we broke up the adhesions which were quite firm and that patient about two months later went into a gymnasium and did regular work taking the Normal Course, practising two hours every day, and she is still there. She was obliged to leave two or three days ago on account of an intestinal trouble, but from the other she has had no trouble whatever. All her symptoms have been relieved. In cases of similar trouble we have had the same results and in no case have we failed to find the ligaments.

Dr. W. M. Conant: I did not hear what Dr. Strong said, but from the references made to his remarks I know he covered the ground very thoroughly, and I think we can accept that the two surgical proceedings we should discuss would be either some form of the Alexander operation or ventral fixation. The other operations are being done less and less; the results are growing poorer and poorer, and the only two operations left are ventral fixation or Alexander's operation with some modification. I personally have never done a ventral fixation. I have seen it done, and each time it seemed to me more and more like a makeshift. I do not believe it is surgical, nor anatomical; neither is it wise to sew the uterus to the anterior abdominal wall especially in a young person and expect them to stand the chance of a confinement, if they can go to confinement, nor put them to the more or less accidental risks which must arise from the adhesions, possible twist or strangulation of the bowel. I recognize that there are certain disadvantages to the Alexander operation performed as it is at present for retroversion with adhesions. I am perfectly willing to admit that there are certain cases that I have operated on where I should have been glad to open the abdominal cavity and seen what I was doing. There are certain cases where a man who has been accustomed to examining and has had much [illegible] tell whether he is dealing with a simple case of retroversion without adhesions, or enlarged ovary. There are cases where it is difficult to make a positive diagnosis but there are certain cases where you can make a positive diagnosis and in such cases I do not think that the Alexander operation done for retroversion with adhesions brings any serious or bad results.

The matter of opening up the cellular tissue should not be considered a moment. In the radical cure for hernia, one never thinks of that. It does not occur to one that he is going to have suppuration, and when we do the Alexander operation in the right way we shall not consider it. If I were afraid of cellular spaces I should not operate at all. You cannot do an operation on the breast without opening up any amount of cellular space; therefore that objection to the operation, it seems to me, is not worth considering.

I should like to demonstrate the way in which we could combine the Alexander and abdominal operation. Shortening the ligaments inside the abdominal cavity seems to me to offer the most satisfactory operation we have. This puckering can be much more beautifully done by pulling on the ligament inside the abdominal cavity, and the more adhesions you have along the ligament the more beautifully does the broad ligament pucker; and if we accept the idea that in every case of retroversion with adhesions we are to open the abdomen and pucker the broad ligament by pulling on the round ligament, we have a method that overcomes the objection against the Alexander operation (because of the possibilities of getting into a mare's nest). It also enables us to see when the uterus is in a correct position and if there are adhesions that cannot be freed by Schultze's or any other method, one can cut them or use the actual cautery; this gives two clean surfaces which do not adhere, and there is no need of packing with gauze.

The difficulty of finding the ligament, as far as I am concerned, is very slight. It seems to me the more the operation is done the less difficulty there is in finding it. I fail to discover why there is so much difficulty in finding them. They are always present. You can find them outside the ring; you can find them in the canal, if not there, in the abdominal cavity. If you admit that the Alexander operation should be done with the same care as a laparotomy we should not hesitate, if we do not find them outside the ring or in the canal, to open the abdominal cavity and bring the uterus up into something like correct position. It seems to me in pulling on the round ligament and bringing up the broad ligament, you have the best method of correcting the retroversion.

I agree with Dr. Elliot that the pulling up of the ligament in many cases is overdone. The uterus should be brought up to a little more than normal position, and the fundus not pushed down as I have seen it, on the bladder or even caught on the symphysis pubis, so that at menstruation it caused excruciating pain from pinching.

I have been in favor and am still in favor of the Alexander operation as the best operation which we have at present for retroposition. It has its faults. But in spite of that it possesses advantages which carry it to my mind beyond any other operation that is performed for this form of malposition. I have done the operation myself about twenty-five times. In most of these cases I have been fairly well satisfied with the results. In some there has been no practical relief, that is, the uterus has been kept up, but from some other cause the patient does not seem to be much relieved by what has been done, and I find it is in that class of cases which previous to the operation had a marked retroversion with adhesions, that we get the least satisfactory results. Naturally, from the condition, that is to be expected, and when you get such a condition something radical has got to be done to obtain relief.

Dr. Conant then explained and illustrated his method of puckering the ligaments.

Dr. Reynolds: I wish to contribute one case to a point Dr. Conant spoke of, the invariable presence of the round ligaments. I am not an anatomist, and I do not want to dispute the position of an anatomist on a point. Two years ago I had a case in which a retroflexed uterus was associated with prolapsed ovaries. After examination under ether I decided to open the abdomen rather than do an Alexander, for the sake of diagnosis of some obscure condition being the cause of the pain which was most intense. I attempted to do Polk's operation of bringing together the two round ligaments. I could not find them. Dr. Haven assisted me and we both hunted carefully and could not find any round ligament large enough to work with. I do not say it was not there anatomically, but it demonstrates to me the fact that for practical purposes the round ligament is not there in some cases.

Dr. J. G. Blake: I think that as one continues to perform the operation, the scope of its usefulness increases. I indorse all that has been said of its value in the class of cases for which it has been done. But there are others to which it is applicable in which very good results follow its performance. In two cases at the City Hospital of complete procedentia, I am inclined to think that a very considerable portion of the relief — which was complete — was the result of Alexander's operation, combined with curetting and dilating so as to diminish the size of the uterus by involution, and closing the perineum. In another class, that is seen largely in the out-patient clinics of the different hospitals, where the perineum has become more or less lax in the case of hard working women who have borne many children, where you have a certain amount of rectocele and crystocele with a slight backward displacement of the uterus, allowing it to sag and associated perhaps with more or less laceration of the cervix, I have of late endeavored to restore the parts, although perhaps no one condition would call for an operation. For instance, if there were even a slight eversion, resulting from laceration of the cervix, with more or less discharge, I have curetted, refreshed the edges, put in a stitch or two to restore the parts to their normal condition, repaired the perineum, and finished by doing the Alexander. By these measures, one relieves a class of cases very puzzling to treat, which have been made worse by the continued wearing of pessaries.

As regards results, I have one of the most satisfactory examples under my care at present, a woman who had suffered for twenty years with all the symptoms resulting from posterior displacement in an aggravated form. Eighteen years ago, she had been for two years under the care of a prominent specialist. I had her for a time afterward, and found that the only thing that would give relief, was the wearing of an instrument now tabooed — the old Simpson's intra-uterine stem pessary. Of course, it was not possible to wear this constantly and it was subsequently discarded. She went on for years and years, receiving many forms of treatment, finally becoming addicted to the use of narcotics and stimulants. She came to me again lately. Much to my surprise, the uterus was moderately movable. Upon the proviso that she would permit me to open the abdomen and perform such operation as I deemed necessary, if I should not succeed in restoring the uterus, I went to work. Under ether, I did succeed in replacing it in position; and ever since she has been quite free from pain. In another hospital case the Alexander operation restored a woman who had been bed-ridden for three years, from what was supposed to be advanced nervous disease, so that she walked out well.

I do not propose to go over any of the ground covered to-night; but I think that aside from these extreme cases, there is an opportunity for combining this with some plastic operation, where we would be able to confer relief which is not accessible to the gynecologist from any other means known to us at present.

Recent Literature.

Lehrbuch der Histologie. By PROF. PHILIPP STÖHR. Fifth revised edition. 8vo. Jena: Gustav Fischer. 1892.

The Microscope and Histology. By PROF. SIMON H. GAGE. Third edition. Part I, 8vo. Ithaca, N. Y.: Andrus & Church. 1892.

The Essentials of Histology. By PROF. E. A. SCHAFER. Third edition. Small 8vo. London and Philadelphia: Lea Brothers & Co. 1892.

Medical Microscopy. By FRANK J. WETHERED. 12mo. Philadelphia: P. Blakiston, Son & Co. 1892.

We have four excellent works to notice, three of which are designed especially for the use of students, while the fourth is intended primarily for the use of the general practitioner.

Stöhr's text-book is issued in a fifth edition and incorporates many of the best recent results, and is still to be regarded as the best elementary work on histology heretofore published. The descriptions are remarkable for their conciseness, clearness and completeness, while the figures, which are numerous, deserve all praise on account of their delicacy and life-like accuracy. The directions for making the preparations have been drawn up with remarkable skill, and will be found equally valuable to the student and the advanced histologist. It is a matter of regret that a manual of so unusual merit has not been translated into English.

Professor Gage's book has waited long upon our desk, for we hoped to receive the continuation. The part issued deals with the microscope and various methods of use in microscopical study for drawing, measuring cover-glasses, etc. We know of no other work so well calculated to give a beginner a clear and sufficient insight into the *principles* involved in microscopical observation and in the proper care of the instrument and specimens. We are surprised only that the author should recommend the gauges manufactured to measure cover-glasses, and not mention the far more convenient "micrometer calliper" used in the arts in this country. The book is printed on one side of the leaves only, thus leaving every other page blank for manuscript additions.

The third edition of Schäfer's Essentials is the result of a very thorough revision. The improvements are many and numerous. The volume is now of a far more convenient size than formerly, and the quality of the illustrations has been bettered greatly by careful printing as well as by the insertion of new and excellent cuts. The book is divided into forty-five lessons. At the beginning of each lesson are given specific directions for making some four or five preparations by means of which the main facts of the lesson may be verified through observation. We think the book would be more perfectly adapted to the use of medical students if a much larger proportion of the descriptions and illustrations were based on preparations from the tissues and organs of the human subject. As a whole the volume deserves cordial recognition, and may be welcomed as being in its improved form, on the whole, the most satisfactory elementary text-book of histology in the English language. It is to be regretted, that among the many discoveries which the author has incorporated in his text, the fundamental investigations of Golgi upon the kidney are not included, especially as Golgi's results may be easily verified, and preparations made by his method (maceration in arsenic acid), are among the most instructive that can be offered to students. One must object, too, to the preparation of Klein's wretched picture of the renal tubules of a dog, because it invariably perplexes and misleads the student by its inaccuracy. It is singular that in regard to microtomes the author should not recommend the best forms, the automatic microtome made by Zimmermann instead of the Cambridge rocking microtome, and the Schieffernecker-Becker pattern instead of the Thoma-Jung. Except in regard to the uterus the descriptions are careful and accurate (that of the uterus is very far from both completeness and accuracy), and they are clear and easily understood even by beginners.

Dr. Wethered's book is far better than we should have anticipated to find any work, which attempted to give in one small volume all the directions which are most important to the general practitioner who wishes to use the microscope himself in his own practice. The merit of such a book must consist in the precision and simplicity of the directions given, and almost equally in the judgment shown in regard to the omissions. In both respects we are glad to say the author has been remarkably successful. We trust the book may be widely circulated among members of the profession, especially such as cannot call readily upon an expert pathologist for a microscopical diagnosis. The book includes general directions for the use of microscope, for carrying out the more important histological methods, such as sectioning and staining, and chapters on the identification of tumors, the examination of urinary deposits, fæces, sputum, vomit, discharges from the genital organs, also on blood, on cutaneous parasites, on foods, and a closing chapter on bacteriological methods. It is well, though not profusely, illustrated with good figures. As an odd blunder in a book so carefully printed, we may note Jolgi's methods for "Golgi's method" (p. 133 and elsewhere).

The microscope has now become an indispensable instrument in medical practice, without which the physician must often work without the knowledge which his patients justly expect him to command. The works we have reviewed, are all calculated to facilitate the acquisition of that ampler security in active practice, over which the microscope alone disposes.

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DISEASES NOT DEPENDENT ON MICRO-ORGANISMS, CELLS AND MICROBES.

IN the first enthusiasm caused by the discovery that there are diseases and diseased conditions due to microbes, a tendency was manifested to ascribe all great morbid changes to parasitic living organisms. Inflammation, that fundamental pathological process, was said to be always initiated by bacteria, and this belief of a few pathologists was favored by the fact that some of the "classic" inflammations, as pneumonia, and peritonitis, were found to be *infectious* inflammations. Gout, rheumatism, atheroma, scorbutic and senile degeneration have barely escaped being included in the ever-widening category of microbe-diseases.

The author of a recent text-book on "Antiseptic Therapeutics,"[1] Dr. Trouessart, says that we are in danger of carrying the microbe pathogeny too far, and of overlooking the part that belongs to the organism. He affirms that it will always be impossible to explain all pathology by microbes, and emphasizes the fact that the living cells themselves have certain functions which may be perverted or destroyed by chemical, atmospheric, and other agents besides micro-organisms, and that simple alterations of nutrition may produce inflammations of which acute gout and acute rheumatism are the type.

The cause of these diseases "is a perversion of the functions of certain cells of our tissues and organs, cells which secrete and excrete matters which are normal or abnormal but in exaggerated proportion." These matters constitute veritable toxines, whose effects are similar to those of the toxines fabricated by the pathogenic micro-organisms.

This comparison ought not to occasion surprise. The natural history of the cell, histological element of all our tissues, shows that it possesses an organization and properties similar to those of the microscopical animal or vegetal cells which live as parasites in the organism, and which are designated under the general name of microbes. Cells whose function is perverted (diseased) become thereby veritable parasites, foreign bodies which the organism hastens to eliminate by the well-known process of inflammation, just as when microbes constitute the offending body; and the general symptoms (hyperthermia, nervous disturbances) are the same in both cases.

The elimination of these toxines, whatever may be their origin, must be effected by the kidney, the intestine or by the skin, and this it is that explains why fever is lighted up whenever the kidney is overtaxed and exhausted or its functions are suspended, as is often the case in inflammations. This explains, too, why diuretics, purgatives, and sudorifics have a favorable and even truly antiseptic action in all inflammations, because they not only remove the toxines secreted by the microbes and by the altered cells, but also the microbes themselves; and the dead or dying cells, true débris of our organs, now serve but to encumber the latter, and form obstructions in the blood-current and particularly in the kidney.

Trouessart further holds that antiseptics act on diseased cells as on microbes, neutralizing or destroying their toxic products and rendering them inoffensive to the economy. If inflammation is sometimes due to causes other than microbes, it must be borne in mind that microbes are always present, ready to add to other morbid agencies at work the mischief which they can effect. The trouble in the organism leaves the door open to parasites which hasten to profit by the occasion; hence complications, always threatening, and which insidiously transform a simple inflammation of little gravity into a microbial inflammation, an infectious disease which may be fatal.

Charrin in a paper published in the *Semaine Médicale* inculcates the same idea. The vital mechanism of the cells is like that of the microbes. These are common properties. Under perverted conditions of nutrition, the former may give rise to baneful products resembling in their effects the toxines secreted by microbes. If the poisons of zymotic diseases produce fever and nervous disturbances, so also does gout, which no one has ever yet classed in the group of infectious diseases. To quote his language: "The principle capable of exciting pyresis, originates in perverted nutrition, in the superabundance of acids or of urates; for in order that there may be a pathological state it is not necessary that some foreign material should take its place among the humors; it is sufficient that elements which are normal should accumulate in excessive quantity."

The waste products of the organism, if not promptly removed by the kidney, are pathological factors of great intensity. They may be compared, in respect to their toxicity, to certain diastases fabricated in our tissues by microbes; in the event of renal insufficiency, the organism will rapidly succumb to their influence. Symptoms of a similar order may supervene in the diabetic without any necessary closure of the emunctories: the living cell gives rise to acetone, to certain acids and ethers which are powerfully toxic.

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[1] Trouessart: La Thérapeutique Antiseptique, Paris, 1892.

The life of the microbe is compared with that of the animal cell. A series of analyses by Arnaud and Charrin[2] have shown that the vital processes of the pyogenic bacillus and the cells are the same. Of 0.933 of nitrogen supplied to this bacillus in a culture flask, 91 per cent. was transformed into ammoniacal compounds resembling urea. From carbon it made carbonic acid, consuming besides a considerable volume of oxygen. Then, conjoined with these ordinary elements of the nutritive mutations, certain specific principles, and, in particular, diastases appeared. Now what are the results of the life of our tissues? There is absorption of oxygen and elimination of urea and of carbonic acid. Certain digestive glands generate diastases. Lastly, when we attempt certain dissociations — rather physical than chemical — do we not meet in the secretions of the human economy, as well as in those of microbes, numerous volatile bodies, bodies soluble, bodies insoluble in alcohol? Do we not find in the case of the human cells as in that of the microbes, organic alkaloids and other special principles, the product of all life, leucomaines and ferments not figured, in small, but appreciable quantity? It is by virtue of these waste products and these toxines that both the microbe and the cell possess properties which are truly pathogenic.

The parallel might be pursued further in the direction of the inquiry provoked by Butschili, whether the bacteria, these monocellular organisms with a granular protoplasm, have a nucleus. Practically, the very fact of a general similarity of constitution and properties will always render the effectual internal antiseptic medication of the microbe-diseases, a difficult if not impossible problem; for we do not possess antiseptic substances sufficiently inoffensive for the globules and cells and sufficiently parasiticide to permit a rigorous fulfilment of the leading indication. It has been observed that patients whose economy is impregnated with such a substance as corrosive sublimate, and who theoretically ought to be especially proof against the attacks of the bacillus of typhoid fever, on the contrary, by the general depression of the organism, become an easy prey to the bacillus.

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THE MEDICAL DEPARTMENTS OF THE REGULAR ARMY AND THE NATIONAL GUARD.

The report of the Surgeon-General of the Army for the fiscal year ending June 30, 1892, has just appeared.

One of the most important matters in the report is the consideration of the Medical Department of the National Guard, which is said to possess "two radical defects; the absence of an organized medical staff in the service of the State, and the absence of a hospital corps for service under that staff. . . . Medical officers are appointed to regiments, without examination as to their fitness for military duty, on the recommendation of the commanding officer of the organization. . . . State medical boards should therefore examine those recommended for positions on the medical staff, and assignments should be made in accordance with expediency in time of peace, location entering chiefly as a factor, and with known ability in view of anticipated responsibilities in time of war."

Now the newly-awakened interest of the officers of the regular army in the State Militia, or, as they wisely choose to call it, the National Guard, is nowhere better shown, so far as we know, than in the medical department; but it may perhaps be modestly suggested that the spirit which is sometimes thought by civilians to be a fatal defect is also shown in the desire to reduce everything to the dead level of uniformity. There is no doubt that the military commander is not fit to be the final judge of the qualifications of a medical officer; but the great evil vanishes if the medical officer nominated by the commander is obliged to pass an examination before a medical board as a prerequisite to a commission. If the examination is known to be severe, no notoriously unworthy man will allow himself to be sent before it. Efficiency being thus guaranteed, there is something to be gained by the attachment of the doctor to his corps. If, in addition, he is made subject to the medical director of his brigade, and recognizes that he may rightfully aspire to succeed to that position, the evil that may arise from his nomination by the colonel of his regiment will be very small. A man commissioned by a medical board and assigned to duty on grounds of expediency and location cannot be much superior to a man suggested for general acceptability, then examined and commissioned and made responsible to the brigade and division surgeon.

There is also another and perhaps the most immediate function of the National Guard to be considered, that is, its duty as a part of the force of the State in the enforcement of State laws, or, in other words, its riot duty. Its fitness for war must not impair its fitness for State duty; and men mutually agreeable and with confidence in each other will work best together in the presence of a mob.

The complaint is further made that "service under the regimental medical officers of the guard is performed by details from the companies." That undoubtedly is not the best method of gaining efficient ambulance service; but the Surgeon-General ought in all fairness to mention the fact that in several States there exist ambulance corps that are specially enlisted and that are doing good work — that is to say, they are studying the work required of the ambulance and hospital corps, and are as efficient, at least in details, as are the other enlisted men of their State in the details of drill. The influence of the regular army in raising the standard of the National Guard work is not enhanced by ignoring the work they have done. To cite a single example of important matters that are overlooked: the legislature of Massachusetts authorized the establishment of an ambulance [illegible]

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[2] [illegible]

1885, and the corps was organized during the succeeding summer. In the report of June, 1886, the Surgeon-General of the Army "respectfully reiterates the necessity for the organization of a hospital corps," and in the report of 1887, he states that the act to organize the hospital corps having been approved, the necessary transfers are being made. When the existence of such a militia corps is ignored, the priority of establishment of one of them assumes an exaggerated importance.

There can be no doubt that a hospital corps will be more effective when enlisted for the purpose and separately drilled. But it ought to be mentioned, when condemning the details from companies of men for service under medical officers, that even in the regular army there are men designated as company bearers who wear a distinctive brassard upon the arm, who are drilled in first aid to the injured, and whose duty it is to fall out on the march or in battle to render first aid to injured comrades and then return to the ranks. If certain States prefer to develop the system of company bearers, they would seem to be not necessarily at variance with the model of the regular army.

There is occasionally heard the complaint that service in the regular army proves irksome to men in the ranks and that desertions are frequent. Is there not danger, in dealing with a force of volunteers, of rendering the service monotonous and uninteresting and thus of discouraging volunteering? It would seem as though the encouragement of certain differences in the forces of different States would bring about rivalry and emulation and thus promote effectiveness more certainly than would the attempt to produce absolute uniformity.

It is dangerous for any man to criticise the ideas of an expert; and yet friendly criticism ought never to be undervalued. Little is ever gained by blindly copying another's work. If only the work of the volunteers is so ordered as to be capable of amalgamating the forces of one State with others, and all with the regulars, should they ever be called upon to work together, minor differences may well be disregarded or even welcomed.

THE PROFESSION AND POLITICS IN NEW YORK SANITATION.

A CONSIDERABLE portion of Dr. Roosa's address before a recent meeting of the New York Academy of Medicine was devoted to the relation of the medical profession to the community at large. One thing for the Academy and the profession in general to obtain, he said, was a more prominent place in public affairs, where hygienic questions are to be considered and other problems affecting the public good are to be weighed. But two hospitals in the city of New York he considered had proper representation from the medical profession in their management. In the Department of Charities and Correction but one physician was allowed upon the Board, and in the Board of Health there were but two commissioners who were physicians, neither of whom, by reason of the existence of a peculiar law, could be its President. The city's coroners were politicians, instead of physicians as they should be, and their deputies, who were medical men, did not receive the compensation due their arduous services. The fault for such a condition of affairs, he believed, lay to a great extent with the profession itself, which should be aroused to asserting its right to what properly comes within its realm.

"In the home," he continued, "the physician is recognized, and in time of epidemic the Board of Health rushes to the doctors for advice. When sickness comes upon them they come whining to be saved from death. The Board of Health is our child, and Willard Parker was its father; but under existing political rule the father would fail to recognize his own child. . . . Every year, at Albany, bills are introduced to sap the good out of laws at present thrown about the profession. The proposed Missionary School of Medicine is a threatening abuse, and I would suggest that a committee should be appointed to watch all legislation."

A propos of Dr. Roosa's remarks a prominent Democratic newspaper recently said editorially, under the caption, "Brother-in Law Quarantine. — The sudden and violent opposition of the Tammany Congressmen to the National Quarantine bill is not unnaturally connected in the public mind with the fact that the Health Officer of this port, Dr. Jenkins, is a brother-in-law of Richard Croker, the ruler of Tammany. It may be that the local quarantine is all that the imagination of a fond brother-in-law can picture it, but if cholera gets a foothold in New York, the country will not believe it. A big death-rate that could be traced to the laxity or ignorance of a Tammany quarantine might deprive it of all the jobs on which its followers live, and if the cholera swept through the country and broke up the World's Fair, the responsibility would be one which even 'the organization' might hesitate to incur."

MEDICAL NOTES.

STRANDED EMIGRANTS. — The authorities of Hamburg, Bremen and other ports have complained to the German government that they are burdened with many destitute families who expected to come to the United States, but are not taken by the steamship companies on account of the quarantine regulations of this country.

INFLUENZA. — Reports have been received of a recurrence of the epidemic of influenza in Southern Russia during the past month, and to a less extent as far north as Moscow. In England also several cases were reported in different places, but as yet the death-rate has not been sensibly affected.

DEATHS FROM CHOLERA IN GERMANY. — It is now officially stated that the number of persons who died of cholera in Germany during the recent epidemic was 8,510, of whom 7,611 died in the City and State of Hamburg.

THE QUARANTINE BILL. — The bill which has recently passed the Federal Senate would by no means give the United States Government entire command over quarantine affairs. It divides the authority of these affairs between the Treasury Department and State and local authorities. The Secretary of the Treasury is authorized to make rules and regulations to be complied with at foreign ports by vessels coming to this country. Medical officers may be detailed to act with consuls in enforcing these regulations. The President shall have power to prohibit, in whole or in part, the introduction of persons or property from such ports as he shall designate, if in his opinion there is danger of the importation of an epidemic disease. The surgeon-general of the Marine-Hospital Service is to examine the quarantine regulations of all State and municipal boards of health, and may supplement them if he considers them insufficient, or take charge of them if the authorities of the State shall surrender them temporarily to the United States authority. The bill cannot be considered as establishing a national quarantine; the execution of the law and of quarantine regulations in New York, for instance, will still depend mainly upon the local health officers and be out of the control of the National Government. It is a makeshift, and a rather poor one. The House, after much discussion, passed another bill differing from the one passed by the Senate. It now remains to be seen whether either branch will pass the bill which has already passed the other branch, or whether an entirely new bill, or none at all is passed.

NEW ENGLAND.

DEATHS IN BOSTON DURING 1892. — The total number of deaths reported in Boston during the past year was 11,236, an increase of 665 over 1891. Allowing for the estimated increase in population, the death-rate for the past year is 23.92 as against 23.02 for 1891. For some reason the number of deaths by violence increased from 472 to 519. There were 414 from diphtheria, and 262 from scarlet fever, as against 232 and 64 respectively in 1891.

CREMATING GARBAGE. — A trial was made last week of a new furnace for cremating garbage, which has been built by the city of Boston in the yards on Albany Street. This furnace, which is a small one, is 25 feet long and 10 feet high, and can burn about four tons of garbage an hour, using half a barrel of crude petroleum. The petroleum is turned to a gas by hot-air and steam, and a temperature is obtained of from 1,500° to 3,000° F. At present garbage is sold if possible, and the rest dumped in the outer harbor.

SUPPLEMENTARY NURSES. — The Massachusetts Emergency and Hygiene Association has undertaken the instruction of women to fit them to be attendants on invalids, convalescents and patients with chronic diseases, where the services of a fully trained nurse are not essential, or to supplement the work of a trained nurse in the care of persons requiring attendance. The course consists of lectures, lessons and examinations; and these women, after receiving certificates, are to be registered at 19 Boylston Place, in a separate list from that of the regular nurses. During the first year of service they are considered as being on probation.

NEW YORK.

TYPHUS FEVER. — A number of new typhus fever cases have been reported during the past week, but the disease still continues to decrease. The official record from November 30th to January 20th was 144 cases, 44 deaths, 21 discharges, 94 patients in the North Brother Island hospital, and 43 "suspects" in the quarantine camp there. On January 18th the first case occurred among the lodgers in police station-houses, and it occasioned renewed efforts on the part of the Health and Police Departments to prevent a further spread of the disease. One of the three new cases reported on January 20th was in a docket clerk employed in the County Court-house, where over two hundred employees work and which is visited daily by at least a thousand people.

DISINFECTION AND QUARANTINE. — At a meeting of the Section on Public Health of the Academy of Medicine, held January 18th, Dr. George M. Sternberg, U. S. A., read a paper on "Disinfection at Quarantine, especially against Cholera." In it he expressed the opinion that cholera can be prevented from entering this country without interrupting commerce or causing any great delay to steamships. Steam under pressure, he thought, was the only means of disinfecting rags in bulk. The disinfection of general merchandise and mails he considered unnecessary. On letters proper the cholera spirillum lived for only twenty-three hours, and therefore, even if a letter was infected at starting, the germs would be dead long before it could arrive here from Europe.

NEW YORK COUNTY MEDICAL ASSOCIATION. — At the annual meeting of the New York County Medical Association, held January 16th, the following officers were elected for the ensuing year: President, Dr. S. B. W. McLeod; Vice-President, Dr. Benjamin F. Vosburgh; Recording Secretary, Dr. P. Brynberg Porter; Corresponding and Statistical Secretary, Dr. A. D. Ruggles; Treasurer, Dr. John H. Hinton. The report of the statistical secretary showed that during the year 1892 the membership of the association was increased by the election of 202 new members, and that, notwithstanding some losses by death, resignation and removal, there are now upon its roll 871 active members.

SATURDAY AND SUNDAY COLLECTION. — On January 19th the reported contributions to the Hospital Saturday and Sunday Collection Fund amounted to $45,209. Of this amount, $3,730 was from the Woman's Auxiliary branch of the Hospital Association.

IMMIGRATION. — Dr. George Nash, who recently went to Hamburg at the invitation of the Hamburg-American Packet Company, made his first cable report to Health Officer Jenkins on January 17th, [illegible] that he was carefully inspecting all immigrants bound for New York. The steamer *Bohemia*, which sailed on that date, was the first vessel examined by him.

BEQUEST TO THE BROOKLYN HOSPITAL. — By the will of the late Mr. A. A. Low, of Brooklyn, the father of Seth Low, president of Columbia College, $10,000 is left to the Brooklyn Hospital.

SUIT TO RECOVER A TAPE-WORM. — A novel suit has been brought by one Peter Kleinmauer, a Rochester pedler, against a "tape-worm doctor." Last summer Peter was successfully treated for tape-worm, and the doctor sent in a bill which seemed exorbitant. He has since learned that the latter is making money by exhibiting the worm in a New York museum, and he has now sued to recover the exhibit. If any profit is to be made out of the cause of his late misery, he says, he wants it himself.

THE ACADEMY OF MEDICINE. — At the general meeting of the Academy of Medicine, held January 19th, the retiring president, Dr. Alfred L. Loomis, delivered his valedictory and President-elect Dr. D. B. St. John Roosa, his inaugural address. The former stated that the Academy was out of debt and owned property valued at over $500,000. He suggested that more attention should in future be paid to the social interests of the members.

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Miscellany.

THE HARVARD PSYCHOLOGICAL LABORATORY.

DR. HUGO MÜNSTERBERG describes the new laboratory for psychological research in Harvard College in the last number of the *Harvard Graduate's Magazine.* Dane Hall, which was for many years the law school building, has been fitted up with apparatus and may now be considered the best equipped laboratory exclusively devoted to psychology in the world. The author attempts to describe to the great body of graduates why psychology should need a laboratory, or instruments, or experiments. This question, he says, has been asked him many times during the two months in which he has been in America, in fact there are only two questions which he has to answer more frequently; one, how the climate of New England pleases him, and the other, whether they play foot-ball in Germany. There is a popular idea that experimental psychology treats either of spiritualistic questions or devotes its time to vivisection, but neither of these form a part of the work of the laboratory. There are three instructors and an average of fifty students who devote their time to the study of the physiology of the sense organs, of the nerves, and of the brain. The most imposing section is for the psychology of the senses, especially the eye and ear. There is a large collection of tuning-forks, resonators and musical instruments, also different optical contrivances and complicated touch and temperature apparatus. There is a very fine collection of instruments for the time measurements of psychological acts from the simplest impulses to the most complicated processes of judgment. Another section includes all apparatus which serves exclusively for the investigations of higher mental processes, such as the perception of space and time, memory and attention, association and formation of judgment, or for the study of æsthetic feeling. The situation of the laboratory is not all that could be desired, as electric cars and hand-organs sometimes seriously interfere with the work in hand.

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POLITICAL INSANITY.

IN the new edition of his book on forensic psychopathology Professor Von Krafft-Ebing has added a new chapter on "political insanity," from which the following is taken:[1] "In history and in our own time one comes upon large numbers of people who, discontented with social arrangements, feel called upon to better the world. There are innumerable such pseudo-geniuses in society, both in the harmless province of important inventions and proposals for the public good which prove in the light of criticism to be mere vain desires or Utopias. The clinical marks of these abnormally constituted persons are infinitely various. In many the mental endowment is weak and their intellectual productions bear the stamp of crazy eccentricity, which clearly distinguishes them from those of genius. Many such remain all their lives in the stage of abnormal world-menders and pothouse politicians, but from the suggestions of others or the influence of excited times they are apt to lose the remnant of their discretion. Then they feel impelled to convert their ideas into action. They appear in the rôle of tribunes of the people, leaders of rebellions, founders of sects or political parties and plunge themselves and others into misfortune."

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A NEW AGENT IN THE TREATMENT OF EPILEPSY.

ON December 26th Dr. Paul Gibier, of the Pasteur Institute, read a paper before the Medical Society of the County of New York on "A New Agent in the Treatment of Epilepsy," in which he sets forth the injections of "nervine," the extract prepared from the testes of the sheep. In introducing the subject, he said that an impression had got abroad that patients treated for the bite of a mad dog had been cured of epilepsy by the anti-rabic injection. He did not think the authorities of the Pasteur Institute in Paris were responsible for this idea; and his own experience led him to believe that the Pasteur treatment would produce but temporary relief, if any at all, in cases of epilepsy. As to the Brown-Sequard treatment, he was of the opinion that it was of more value than was at first thought. The use of "nervine" he tried first with good results upon a young Frenchman belonging to an epileptic family. After mentioning several other cases, two of them in consultation with Dr. C. L. Dana, in which this treatment was followed by marked improvement, Dr. Gibier went on to say:

"I am inclined to recognize a reliable principle in the theory of Brown-Sequard, and I consider that his action of suggestion explains little of the effect of injections in epilepsy. I have substituted other substances without the knowledge of the patients, but I was obliged to return to the former fluid in consequence of the reappearance of the paroxysmal phenomena. While I do not that epilepsy can be cured in all cases by the nervous transfusion. I am inclined to believe that it may improve the condition of the afflicted even when used without any other treatment. It may help us in relieving the patients from the inconveniences of bromide. It will certainly add to the benefit desirable from the other therapeutic agents. In a future paper I will give the demonstrations of the powerful actions of the injections made with the extract of fresh organs, and especially of the fluid extracted from the gray substance in nervous diseases other than epilepsy. I am of the opinion that we are approaching a new field in therapeutics generally, which promises to be fecund in its results."

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[1] Lancet, December 31st.

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CONGRESS OF CRIMINAL ANTHROPOLOGY.

At the meeting of the Third International Congress, held in Brussels during last August, the tendency of all the leading speakers was to look upon crime as the result of psychical and social rather than physical peculiarities.[1] It has been alleged that habitual criminals have a lower average cerebral capacity than others, that their foreheads are retreating and their brains developed posteriorly, that their lower jaws are strongly pronounced and their ears frequently deformed, etc.; but Dr. Tarnovski, of St. Petersburg, and Dr. Naecke, from very wide observations denied any special physical peculiarity in criminals, either male or female. It is true that physical abnormalities are more frequent in the criminal class, but there is no constant relation between any one of them and crime. Many criminals have an inherited tendency to some form of mental alienation; while many others owe their character to purely personal and social influences of a deleterious character.

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THERAPEUTIC NOTES.

Treatment of Typhoid Fever with Thallin. — Schmid[2] has treated twenty cases with thallin with good results. The sulphate in a one per cent. watery solution was given at intervals of from two to three hours, the dose at first being two grains, and increased until the temperature reached the normal point. The largest amount given in twenty-four hours was 124 grains. The author believes that this drug is as useful as cold baths, especially in the height of the disease, and has noticed no bad results from it.

Pioktanin in Diphtheria. — Taube advises painting the diphtheritic membrane with a ten per cent. solution of pioktanin. The gagging following the application is useful in distributing the drug, and forcing it deep into the tonsils. The throat is first washed with a solution of bicarbonate of soda to remove the mucus. At first this application is used three times a day, later once a day.

Subcutaneous Injections of Kidney Extract. — The methods of therapeutics in which extracts of the organs of animals are injected for the relief of symptoms arising from diseases of the same organ in man has been extended by Dieulafoy,[3] who reports a case in which glycerine-saline extract of the cortical portion of the fresh kidneys, first of guinea-pigs and then of oxen, was injected in a patient presenting well-marked uræmia symptoms. The extract was prepared according to the method of Brown-Sequard; and after sterilization by filtering, was injected hypodermically, three times a day, with temporary benefit, the coma passing off and the kidneys again becoming active. The patient, however, relapsed and died three days later.

The Treatment of the Morphine Habit by Codeine. — In an [illegible] paper in the *New York Medical Journal* of January 7th, the author describes graphically the mental condition of the habitual morphine taker, the fascination of the drug, and the mental slavery which it entails. In a certain case he obtained such benefit from the use of sulphate of codeine that he looks upon this alkaloid, properly used, as a possible means of salvation for many cases. There is not nearly so much difficulty in reducing the daily amount of morphine to a small quantity as there is in entirely stopping that small quantity. This is the time in which by substituting codeine a large amount of suffering may be prevented. The codeine was given for two weeks and then entirely stopped without great difficulty. It was given subcutaneously in doses of from one to two grains every three hours according to the urgency of the symptoms, and the interval was gradually lengthened.

RECORD OF MORTALITY

For the Week ending Saturday, January 14, 18[illegible].

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	851	[illegible]	[illegible]	[illegible]	1.20	7.32	1.80
Chicago	[illegible]	—	—	—	—	—	—	—
Philadelphia	1,092,168		—		—	—	—	—
Brooklyn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.96	9.68	3.36
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.48	[illegible]
Baltimore	[illegible]			—	—	—		—
Cincinnati	[illegible]	[illegible]	[illegible]	—	[illegible]	3.80	.95	—
Cleveland	[illegible]	[illegible]	29	11.25	16.25	[illegible]	5.00	[illegible]
Pittsburg	[illegible]	—	—	—	—	—	—	—
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.20	[illegible]
Washington	230,360	92	27	5.45	17.44	1.09	2.18	—
Nashville	[illegible]	—	—	—	—	—		
Charleston	56,048	—	—	—	—	—	—	
Portland	40,000	11	[illegible]	[illegible]	[illegible]	—	—	—
Worcester	92,313	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.16	4.16
Lowell	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.54	2.27	—
Fall River	[illegible]	—	—	—	—	—	—	—
Cambridge	74,644	31	[illegible]	[illegible]	[illegible]	—	3.23	9.69
Lynn	[illegible]	[illegible]		[illegible]	[illegible]	4.16	8.32	—
Springfield	47,052	17	[illegible]	[illegible]	[illegible]	5.88	5.88	—
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	[illegible]	26	[illegible]	[illegible]	[illegible]	—	7.70	—
Holyoke	40,099	12		[illegible]	[illegible]	—	[illegible]	[illegible]
Brockton	32,783	10		[illegible]				10.00
Salem	31,495	[illegible]	[illegible]	—	[illegible]	—		—
Haverhill	[illegible]	10	[illegible]	—	[illegible]	—		
Chelsea	[illegible]	[illegible]	1	—	—	—	—	—
Malden	[illegible]			—	—	—	—	—
Newton	[illegible]	[illegible]	3	7.69	23.07	—	—	7.69
Taunton	[illegible]		[illegible]	—	[illegible]	—	—	—
Gloucester	[illegible]	8	[illegible]	—	[illegible]	—	12.50	—
Fitchburg	25,444	15	[illegible]	—	[illegible]	—	—	—
Waltham	[illegible]	11	6	—	27.27	—	—	—
Quincy	[illegible]	1	1	—	—	—	—	—
Pittsfield	18,294	[illegible]	[illegible]	[illegible]	12.50	—	—	25.00
Northampton	15,684		[illegible]	[illegible]		—	20.00	—
Everett	[illegible]	[illegible]		—	25.00	—	—	—
Newburyport	14,031			[illegible]	—	—	—	—
[illegible]	13,561		1	—	—	—	—	—

Deaths reported 2,201; under five years of age 451; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 311, acute lung diseases [illegible], consumption [illegible], diphtheria and croup 126, scarlet-fever 51, diarrhœal diseases 29, typhus fever 23, whooping-cough 20, typhoid fever 17, measles 14, erysipelas 12, malarial fever 6, cerebro-spinal meningitis 5, small-pox 2.

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[1] Science, November [illegible]

[2] Correspondenz-Blatt, September [illegible]

[3] [illegible] Méd. des Hôp., October [illegible]

From typhus fever New York 23. From whooping-cough New York 11, Brooklyn 5, Boston, Washington, Portland and Cambridge 1 each. From typhoid fever New York 5, Milwaukee 3, Brooklyn, Boston, Cincinnati, Cleveland, Lowell, Springfield, Everett, Newburyport and Hyde Park 1 each. From measles New York 12, Brooklyn 2. From erysipelas New York 5, Boston 3, Brooklyn 2, Cleveland and Washington 1 each. From malarial fever New York 3, Brooklyn 2, Holyoke 1. From cerebrospinal meningitis Brooklyn, Milwaukee, Lynn, Quincy and Pittsfield 1 each. From small-pox New York and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending January 7th, the death-rate was 29.2. Deaths reported 5,775: acute diseases of the respiratory organs (London) 953, measles 134, whooping-cough 107, diphtheria 65, scarlet fever 64, diarrhœa 32, fever 25, small-pox (Oldham 2, Liverpool and Halifax 1 each) 4.

The death-rates ranged from 18.2 in Croydon to 40.5 in Salford; Birmingham 31.2, Bradford 28.5, Hull 25.0, Leeds 34.7, Leicester 26.6, Liverpool 30.7, London 30.4, Newcastle-on-Tyne 26.5, Nottingham 22.0, Portsmouth 22.4, Sunderland 22.1.

METEOROLOGICAL RECORD,

For the week ending January 14, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
S... 8	[illegible]	14	[illegible]	[illegible]	[illegible]	68	76	N.W.	N.W.	[illegible]	5	F.	F.	
M.. 9	[illegible]	[illegible]	30	6	[illegible]	[illegible]	[illegible]	S.W.	S.E.	6	6	F.	N.	0.16
T ..10	29.19	[illegible]	28	7	[illegible]	71	[illegible]	W.	W.	8	24	F.	C.	0.26
W ..11	29.74	4	1	1	[illegible]	[illegible]	74	W.	W.	15	17	C.	C.	
T ..12	[illegible]	7	14	0	[illegible]	[illegible]	76	W.	N.	[illegible]	9	N.	O.	
F ..13	[illegible]	[illegible]	16	[illegible]	[illegible]	[illegible]	57	N.W.	N.W.	8	10	N.	C.	
S ..14	30.02	14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.W.	7	[illegible]	C.	C.	
☞	29.65	12	[illegible]	1	[illegible]	[illegible]	69							0.06

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 13, 1893, TO JANUARY 19, 1893.

First-Lieut. Thomas U. Raymond, assistant surgeon, is relieved from further duty at Vancouver Barracks, Washington, and will report in person to the commanding officer, Fort Canby, Washington, for duty at that station, relieving **Captain Edward C. Carter**, assistant surgeon, who, on being thus relieved, will proceed to Vancouver Barracks, and report in person to the commanding officer of that post for duty there.

Captain Guy L. Edie, assistant surgeon, U. S. A., is relieved from duty at Fort Neobrara, Neb., and will repair to New York City, N. Y., and report in person to the attending surgeon in that city for duty in his office.

Leave of absence for four months is granted **Captain Jefferson D. Poindexter**, assistant surgeon, U. S. A.

The leave of absence granted **First-Lieut. Samuel R. Dunlop**, assistant surgeon, U. S. A., is still further extended to include January 31, 1893.

The resignation of **First-Lieut. Samuel R. Dunlop**, assistant surgeon, U. S. A., has been accepted by the President, to take effect January 31, 1893.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 21, 1893.

George Rothganger, assistant surgeon, to the Navy Yard, Mare Island, Cal.

P. M. Rixey, surgeon, ordered to the U. S. S. "Dolphin," February 6, 1893.

J. D. Gatewood, passed assistant surgeon, detached from the U. S. S. "Dolphin" and granted two months' leave from February 6, 1893.

H. N. T. Harris, passed assistant surgeon, to special duty in the Bureau of Medicine and Surgery.

XI INTERNATIONAL MEDICAL CONGRESS, ROME, 1893.

The Presidency of the provisional Committee of the XI International Congress of Medicine, which will be inaugurated in Rome, on the 24 of September, 1893, has been asked during the last time by many pharmacians if they are admitted to have a part in the works of the Congress.

We have been now informed by the President that, in consonance with the art. 3 and 17 of the General Regulation, all pharmacians may be inscribed as members of the Congress and that there exist also a special section directed by a Committee composed by the most distinguished Professors of Pharmacology.

SOCIETY NOTICES.

Boston Society of Medical Sciences. — A regular meeting of the Society will be held at the Harvard Medical School on Tuesday, January 31, 1893, at 8 p. m.

Dr. Wm. T. Councilman will make a communication on "The Modern Theories of Inflammation."

Members of the profession cordially invited.

Otis K. Newell, *Secretary*.

Surgical Section of the Suffolk District Medical Society. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, February 1, 1893, at 8 o'clock.

Dr. Nicholas Senn, of Chicago, President of the American Surgical Association, will be present.

The following communications will be made: Dr. Frederick L. Jack will show "Two Cases of Removal of the Stapes"; Dr. Arthur T. Cabot, "Cases of Removal of the Rectum for Malignant Disease, by Kraske's Method;" Dr. Nicholas Senn, "Bloodless Amputation at the Hip-Joint, by a New Method"; Dr. George H. Monks will report a "Case of Removal of the Right Half of the Larynx for Carcinoma," and will show the patient.

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

Norfolk District Medical Society. — A meeting for Scientific Improvement will be held at the Norfolk House, Roxbury, Tuesday, January 31, 1893, at 7.45 p. m.

Communications: "Notes on General Paresis," Joel Seaverns, M.D.

"A *Résumé* of Some Cases of Labor," M. V. Pierce, M.D.

Coffee at 9.30.

James C. D. Pigeon, M.D., *Secretary*.

Medical Society of the State of New York. — The eighty-seventh annual meeting will be held in the City Hall, at Albany, February 7th, 8th and 9th, commencing at 9.15 a. m., on Tuesday and ending at 1 p. m., on Thursday.

Lewis S. Pilcher, Brooklyn, *President*.

F. C. Curtis, Albany, *Secretary*.

Fifth District Branch of the New York State Medical Association. — The ninth annual meeting will be held in Brooklyn on Tuesday, May 23, 1893. All Fellows desiring to read papers will please notify the Secretary.

E. H. Squibb, M D., *Secretary*, P. O. Box 760, Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Gynecological Society. Vol. 17. For the Year 1892.

Phthisis in Relation to Life Assurance. By Thos. Glover Lyon, M.A., M.D. 1892.

Alcoholism and its Treatment. By J. E. Usher, M D. New York: G. P. Putnam's Sons. 1892.

Report of the Directors of the Boston Training-School for Nurses, attached to the Massachusetts General Hospital. 1892.

Thirty-ninth Annual Report of the Trustees of the State Almshouse at Tewksbury, for the Year Ending September 30, 1892.

Contributions from the Surgical Service of St. Mary's Hospital for Children, New York. By Charles T. Poore, M.D. Reprints. 1892.

The Anatomy and Surgical Treatment of Hernia. By Henry O. Marcy, A.M., M.D., LL.D., late President of the American Medical Association, etc. New York: D. Appleton & Co. 1892.

Disease in Children; A Manual for Students and Practitioners. By James Carmichael, M.D., F.R.C.P., Physician, Royal Hospital for Sick Children, etc., Edinburgh. New York: D. Appleton & Co. 1892.

Lecture.

LECTURES ON SURGERY.[1]

[illegible], M.D.,

[illegible]

I.

GENERAL CONSIDERATIONS.

We are [illegible] speak of some of the general con[illegible] in surgery, not by any means that this is your first instruction in that branch, but because as the beginning of a systematic course it seems proper to review the general subject. One might say that by the brilliancy of modern surgery, by its triumphs and by its boldness there was danger of being led away from the first and soundest principles of conservatism, which should make one prefer to avoid an operation rather than to do it, if that were equally beneficial to the patient. Now there is a great charm about surgery, because it is visible and tangible and demonstrable, and also because we know at once when we have done right, [illegible] done wrong, — a thing that we do not always know in medicine. The difficulties of diagnosis in medical practice and the doubts about the effect of drugs, make the practice of medicine full of uncertainties. Surgery is to some degree uncertain but not nearly as much as medicine. We know at once when we have done wrong, for instance, when we have attacked a tumor which had better have been left alone or mistaken a fracture for a dislocation; we are conscious at once of the wrong we have done, and perhaps can correct it the next time. Our mistakes in medicine are more apt to be concealed, and we cannot learn as much from them, in consequence. I think there is no doubt that medicine requires a higher grade of intellect and more judgment, than the practice of surgery. Formerly it occupied a much more advanced plane than now; but latterly surgery has been so bold and patient and successful, and has made truly such enormous advances, that it is displacing medicine a good deal in certain departments. This is particularly true, I think, in certain specialties, like gynecology where now it is all surgery and no medicine, while formerly there was a good deal of medical, local and mechanical treatment. But surgery really is a part of medicine, and it does not demand so varied a culture to make one successful in it; and surgical diagnosis is, and should be, a great deal easier than medical diagnosis. The French give to it the name of "external pathology," pathology that can be seen, and appreciated by the touch; and although certain regions, like the abdomen and scrotum, are very obscure as to their contents when diseased, yet in many cases external pathology is very easily read and recognized. It is one of the earliest things that the student sees. He sees the displacement of a fracture, the deformity of a dislocation. He sees unnatural outlines, he feels the outlines of a tumor; neither of which can he do in medicine. This, then, is probably one of the great charms of surgery, its tangibility, and its certainty, when we succeed. We feel sure, when we have done right, that we have done a great deal of good; but equally sure, when we have done wrong, that we have made a very grave mistake.

One is tempted to think that surgery means operation. It does not necessarily mean that; and although the operative part of surgery is brilliant, it is not the best part, nor does it require the highest attributes of mind. Surgical pathology is a matter of much finer grade than surgical operations. A man with a good knowledge of surgical pathology and good judgment is more valuable to his patient than one who can amputate dexterously, because that is to a certain degree a mechanical art combined with anatomical knowledge. Not that I would depreciate in the slightest degree the importance of anatomical knowledge or dexterity, only they are not by any means all of surgery or the best part: for the knowledge of surgical pathology, patience, judgment, conservatism, are the best part of surgery.

Latterly (always, in fact, since the time of M. Louis, who first introduced the numerical method), latterly, and in all times, one has been led to rely upon statistics as showing the exact result which should be expected in a surgical disease or a surgical operation. Now statistics are fallacious. They cannot disclose to us all the peculiarities of an individual case. They are good as an average, but they do not apply to the individual. By that I mean to say that in no given case can you say: This patient is about to have such an operation done on him. There are seventy-five chances that he will recover, and twenty-five that he will die, exactly. That cannot be so accurately formulated as that. One can say safely: In the majority of such cases so many recover, and so many die. What this individual will do, he has got to prove for himself. And the reason of this uncertainty is that we have by no means mastered all the phenomena and the problems of life, all the peculiarities of the individual, all the changes in the person's constitution, all those thousand influences of various circumstances, some of which we shall allude to as bearing on surgery, in the course of this lecture. You cannot say with accuracy what a man's chances are.

That brings us now naturally to the point,

WHAT IS THE OBJECT OF SURGERY?

It can have but two objects: one is to relieve suffering, and other is to prolong life. If it can accomplish either of these objects, it succeeds. If it does not seek to accomplish one of these objects, it is on a false aim; if it does not accomplish them, it fails. It may strike one perhaps, at first, somewhat with surprise that such an idea should be enunciated as that surgery might not seek always to accomplish one of these objects; and yet scientific ardor may push aside that humanity which ought to be the great moving factor in all surgical judgment. I think this is more apt to be the case among the races which are not Anglo-Saxon than those which are. I think the Anglo-Saxon mind has, for some reason, a more naturally humane tendency than the Latin mind or the German mind; and that humanity always has been the great consideration of the English school and of the Irish school and of the Scotch school, and I trust it always will be of ours. To relieve suffering or to prolong life: well, that again naturally divides operations into several classes, for they come up with more or less urgency before the surgeon according to the condition that the patient happens to be in. So we say that such an operation is an *operation of necessity*, and of another, that operation is one of *expediency*; and still of a third, if that is done at all, it can only be done as a forlorn hope and as a *last chance*.

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[1] [illegible]

The operation of necessity may cover such grounds as a bleeding vessel or a strangulated hernia or an appendicitis with an abscess and stoppage of the bowels — cases of that class. No one can hesitate as to the propriety of interfering and doing the best he can; and under those circumstances no one should wait, the case being urgent, for complex or minute surgical machinery; for you must remember that before the days of modern appliances, and far back in simple country life, that a great many desperate operations were done, and a great many lives saved with the simplest tools and with the rudest surroundings; so that, given a case of necessity, we must go ahead. We cannot do otherwise.

On the other hand, the operation of expediency is a far different matter, and there comes in weighing of chances, pro and con, which no man can definitely settle; and that brings us again to the fallacy of statistics. Here is where statistics come in. You say such a person has a tumor of the breast. That tumor, so far as we can make out from her age and its peculiarities and the probabilities, is malignant, probably cancer, probably the epithelial form of cancer in the breast. Its natural history is to run about three and half to four years, and then terminate life. That is its outside limit, as a rule. If left to itself it will gradually necrose the tissues of the breast and infiltrate all the neighboring parts, break down the breast into a sore that will become very offensive to the patient and friends; it will involve the arm, cause swelling and pain and pressure on the veins, and gradually, probably, it will invade internal organs through the lymphatics, and in three to four years destroy life. On the other hand, if this diagnosis is true, and this case is operated on and the disease removed (all that we can see), the chances are that life will be prolonged, that there will be an immunity of some months to one and a half to two years of reasonable health before the disease comes back, and that if it does come back, as it almost always does, that it may come in a locality not quite so distressing, that the patient may die of cancer of the liver or of the lungs, or some other internal part; that she may not have the deformity and distress of an ulceration, and, at any rate, that she has a year or two of peaceable life. Besides this you must say to yourself: The patient is entitled to this operation, if she wants it, on the ground of the moral effect it will have on her. If you do not do anything she will be very much discouraged and perhaps seek measures not so good as the poor ones you can offer. Here, then, comes in the question of expediency pro and con, pro and con; and the diagnosis once being made, the rest must be balanced, for the truth is that statistics cannot give you accurate facts. You can say, the natural history is so and so, it will probably go so long, probably recur in about such a time, in about such a way; but not necessarily so in this given case because there is infinite variety in the disease and in the individual.

Then there is the operation which is done as a last chance. That is a very distressing and serious problem indeed. A good many poor people come to the surgeon and wish to be executed, killed, put out of the way, and say: "I am suffering so much that if I can have some ether I don't care whether I wake up or not. It is an easy way to go, and you can do the operation; and if there is a chance of my coming through, I will take that chance; and if it goes the other way, I shall be satisfied." That is quite a common thing to have people say who have reached a certain period of life, or a certain degree of mental tension from pain. Pain is the great destroyer of happiness and peace and fortitude; and after a while it breaks people, and they want to get rid of it at any cost. Opiates relieve for a while, but it recurs; and patients, for instance, with cancer of the pylorus, or many other cases I might allude to, are in that state that they had rather die than live as they are. Now the surgeon has to ask himself: Is there a last chance? Is this forlorn hope likely to lead to anything, or surely going to lead to death? If the latter, he is not justified in operating. If there is a chance, and the patient clearly understands it, I think myself he is entitled to have the benefit of that slight chance if he wants to.

This brings us to another very important part of the subject, that in operations of necessity and in operations of expediency and in operations which are merely forlorn hopes, in an ascending scale of prominence and gravity, comes the question whether or not any operation should ever be done *without the consent or knowledge of the patient*, or, if a minor, the patient's parents or guardians or friends. No such restraints, I imagine, hold people back on certain parts of the continent of Europe. I think they go, on and do things if they think best. The law protects them. The hospital patient is very properly subjected to certain rules when he comes there, and such things as complaints and suits for malpractice are practically unknown, or very much less frequent than with us; but fortunately or unfortunately, — I am hardly prepared to say which; in the point of humanity fortunately, and in the point of the poor doctor unfortunately, — with us the accountability to which one is held for every act performed surgically is very strict, and we have to be careful to protect ourselves; not only to protect our good name, but also our pocket, in threatened suits. Hence the very great importance of getting consent for things which are necessary. I say the importance of this consent is in an ascending scale in those three classes of cases: necessity the least, expediency in the middle degree, and forlorn hope of the last importance. In an operation of necessity, one can conceive the case, for instance, in which the patient is either drunk or unconscious from an injury, and in which no one would hesitate to take the risk of opening his windpipe, tying one of his arteries, of trephining his head — you must do it or he will die in a little while, — especially the first two. That is a risk you have to take, and it is well in such a case, if possible, to have some other surgeon with you in order that the responsibility may be divided, and it may be said that a consultation has been held on the case. But in an operation of expediency or where there is room to wait, it is right and safe always to wait for the consent of the parties concerned. Now you will see, when you go around about the hospitals, a great many cases that turn out badly because the doctor's opinion was not taken and his advice was not followed early in the case. Especially is this true of compound fractures and of amputations and of other cases, of similar classes, where the patient holds back, refuses treatment until secondary and perhaps inflammatory changes have come on, and does not get so good a result; or even dies in consequence of this unfortunate delay. The patient who consents readily to operation, and if this is done early, in the judgment of the surgeon, has usually the best success. But we are so situated here in these American communities that we must be very careful to get full consent for everything which can be shown to be expedient. There is a large class of cases that are going to become medico-legal cases any way, no matter whether we do anything or do not do anything; if patient dies or lives there is going to be either an inquest or a suit for accident. Such a case, for instance, in a very marked degree, may be a case of gun-shot wound of the bowels. We see it; recognize its desperate condition; know that if there is any chance at all, it consists in doing something the first two or three hours: after that the chance of recovery is very small. We know that if anything can be done by opening the abdomen, it will be by immediately opening it in order to arrest the bleeding of vessels, check extravasation, wash out the cavity and avert possibly the onset of peritonitis, which is a very rapid disease. On the other hand, the operation is a very fatal one. Recoveries have been scanty. Its pathology, its practice, its results, are all new; and we must be very careful in cases of this class that we have strict authority for going ahead, and doing what we think is right, in cases which are going to involve necessarily criminal proceedings.

I will pass from this part of the subject, which is not quite so agreeable, to what concerns and interests us most with regard to surgical cases.

I said that statistics were fallacious, that each case had got to be considered by and for itself. There are a great many circumstances which govern our judgment in considering a case, or a patient, a good subject for operation or a fair subject for operation or a very poor subject. The condition at the time, of course, is one of the most important factors; for instance, the severity of the accident, the amount of blood lost, the degree of shock to the nervous system, — this perhaps is the most important factor of all. It is hard to estimate, sometimes. Patients sometimes look pretty well, who are apt to collapse under ether, and to die after the first few incisions are made. This is especially true of cases of abdominal surgery of an acute inflammatory nature, such as abscess about the appendix and cæcum; or of localized peritonitis, or of irritations set up by foreign bodies, or of volvulus or intussusception, — all those conditions which are acute. Their history is the history of a few days, sometimes of a few hours. After two or three days, the diagnosis having been fairly made, the patient and friends brought to the consent of doing something by the patient's desperate condition, and the surgeon being ready, he tries *to estimate what the patient can stand*, how long it will be safe to keep open the abdominal cavity; and in this he is sometimes deceived. These patients appear pretty well during the first half-hour of ether; and then they collapse all at once, and frequently die on the table with sudden failure of the pulse, and filling up of the lungs, and failure of respiration. On the other hand, take the shock from the crushing of a limb from steam power or any other power, and you have immediate and intense shock. There you can estimate the situation better. You see how badly the patient is off, that he has all the symptoms of profound shock. You see at once that until he reacts and rallies to a certain degree, that he cannot bear anything more, either in the way of ether, or operation; and you wait until some signs of rallying take place before you proceed to operate. The patient's condition at the time, then, in acute cases influenced by rapid disease or influenced by accidents, is an extremely important factor in surgical judgment, about when to interfere, how much to interfere, how long to interfere. The latter, I think, is the most important of all; for I believe really in these modern days of antiseptics and anæsthesia we are tempted sometimes to prolong operations to such a degree that the patient sinks in the second hour who might have rallied in the first, by being kept too long in that collapsed condition.

The General Constitution of the Patient. — That is of the highest importance. Patients differ enormously. Some will live through almost anything; some succumb at the slightest blow. Some patients have what Travers used to call "an irritable constitution." He cites this illustration: One man goes out hunting, gets a slight blow on the shin. Another gets a little blow on the shin in the street. One heals instantly; the other passes into a low state of fever, and is sick a week or so with cellulitis, etc. So far as one can see, those two patients may look about alike when the accident occurs. An irritable constitution is one easily upset — perhaps you may use that word — unbalanced, not having staying power, endurance, and thrown off its true level by even slight accidents. This, I think, is more true of some races than others. I think that the Irish are an especially mercurial people, and very subject to constitutional irritation. They may recover well from operations, but operations affect them quite seriously. On the other hand, the Oriental is well known to be absolutely impassive under surgical shock, and to make wonderful recoveries after surgical injuries and surgical operations. If we have had the advantage of knowing the patient before, we can estimate what his constitution is going to do; and this, I think, is exactly what the common and much-abused saying means that such a doctor "knows the constitution of the family"; in other words, he has seen them through thick and thin for fifteen or twenty years, and under given circumstances he can predict better than any outsider possibly could what such a one will do, if accident or disease happens. We cannot estimate it fully. We can estimate it to a certain degree.

We come to the next consideration, which we can estimate, if we are careful, and that is the effect on patients who are about to undergo operations, of any form of organic disease of parts which are not about to be operated on. Take amputation of the leg, for instance, has the patient any disease of the viscera which would render an operation dangerous?

The Kidneys. — First of all, I should put the kidneys. If he has got Bright's disease, he will have his risks from an amputation enormously increased. That risk may not be enough to deter us from operating, certainly not in a case of necessity. The patient with Bright's disease, who has got a leg crushed, must have the leg taken off, and take the chances. But the woman who has Bright's disease and some tumor or little growth not troubling her very much had perhaps better be left alone. But the other condition of the kidneys, even more fatal and almost prohibitory to operative interference, is the saccharine diabetes which leads to gangrene, and leads to coma, fatal coma, serous brain, effusion in the brain under ether and after the shock of an operation. You will bear in mind that in many of the cases of gangrene you may be called upon to see in elderly or middle-aged persons, if you examine, you will find a saccharine condition of the urine. That contraindicates interference, and explains partly the cause of the gangrene in the patient.

Organic Disease of the Lungs. — Organic disease of the lungs is not quite so important. A good many people will get well if the lungs are diseased when operated on. Of course, I would not imply that an operation can be judiciously done in the acute affections of the lungs, like an active pneumonia or an acute pleurisy, anything of that kind; but in phthisis a great many operations are done, and the patients do very well; and bronchitis more so, and so on to with other chronic affections.

Organic Disease of the Liver. — Any organic disease of the liver, on the other hand, is an almost positive indication not to interfere. You are well aware that affections of the liver are apt to be accompanied with a hæmorrhagic tendency, and that that condition is very liable to crop out and annoy you in the case of any surgical operation done where the patient is really suffering from hepatic disease.

The Heart. — The heart is important in two ways: in the first place, whether the patient can safely take ether; in the second place, if the operation is on one of the extremities, whether he can nourish and repair the site of the wound after an operation is done. Usually he can. Heart-disease is not a very marked contraindication; and usual y the patient with heart-disease can take ether provided it is given with caution, and a knowledge is had beforehand of the condition of the heart that you have got to meet with. So I should say that the heart and lungs were the least obstacles, the kidneys the greatest, and the liver the next, perhaps, to surgical interference.

Now another very important function, one that has as much bearing perhaps as any one possibly can upon the result of surgical operation, is the *power of digestion*, alimentation, nutrition of the patient, in other words, their habit of digestion, whether they have a good stomach, a fair condition of the bowels, so that the gastric digestion and the intestinal digestion are habitually carried on with a fair degree of perfectness. If they are, that patient will survive almost any surgical operation. All depends and falls back, in the long struggle for life after a severe and prostrating operation, upon the digestive powers; and if those are good, you may hope certainly for the best results, and and if those are bad, you have very little chance in contending with a severe operation.

The State of the Arteries. — It goes without saying that atheromatous arteries are the worst possible things for surgical interference. They cannot dilate and yield to the inflammatory processes, respond to the nervous stimulus of the part after it is wounded, cannot supply the vital fluid; and sloughing and gangrene take place in the atheromatous patient.

There are a good many functional disturbances I wish to speak of, that should delay an operation. In other words, they are disturbances that often can be corrected by care and previous treatment; and you will notice that the difference sometimes in certain classes of cases or patients in a series of surgical cases is as to whether the patients have been seen and prepared for it by a previous course of treatment, or whether they have been taken at once from every-day life, hurried on to the table, and in the excitement and fevered condition of every-day life operated on, at once.

Anæmia. — One of the most important functional disturbances is anæmia, bloodlessness, poor weak blood, imperfect manufacture of red cells, going back of course to the lymphatics again and to the last stages of digestion. The anæmic patient will die sometimes from shock, or from a very slight secondary hæmorrhage after an operation. Things which would be trivial to the person in fair health are sometimes fatal to the extremely anæmic person; and that has to be very carefully borne in mind; and, if possible, you should wait and build up the condition before you attempt an operation. I admit that this is sometimes impossible. For example, an anæmic person constantly losing blood from internal hæmorrhoids may be losing strength faster than you can possibly give it by delay and giving iron, tonics and food; but if there is no rapid waste going on, it is safe to wait a fortnight, and get the patient into a better condition, before you proceed to interfere.

Menstruation. — Menstruation is a poor time to operate. It wakes up a great many nervous sympathies and excitements; leads to congestion of the breasts — certainly a poor time to operate on the breast; leads to congestion of the pelvic organs — certainly a poor time to operate on the rectum, or parts in that neighborhood.

Pregnancy. — Pregnancy is rather an open question. It used to be said, "You must not operate in pregnancy at all." Now a great many severe operations are done in the pregnant state. Every one will admit if you can avoid an operation in the pregnant state, do so. If you are driven to it, with how much hope may you look forward to a good result and to avoiding abortion? Statistics and papers written recently rather tend to show that the danger of miscarriage and the danger of death in operating in pregnancy have been overrated, and patients will go through a great many things and still continue to carry the child, to preserve the life of the child and recover. Never operate if you can avoid it, but you may be driven to it by the contemporaneous presence of a pregnant uterus and rapidly growing cyst in the abdominal cavity. Both cannot go on together. One has got to be taken away before the other can fulfil its function. Probably the reason why we have less risk to contend with in pregnancy now than formerly is in the use of antiseptics. The pregnant condition has always been recognized as one of plethora, and one very prone to inflammations. If then antiseptics were not used, peritonitis was very apt to be excited by surgical interference in the pregnant condition. In the treatment of the present day, antiseptics being used, the chances of sepsis are very much diminished, and the chances of operating during the pregnant state very much improved. Probably that is the explanation of it.

Certain constitutional conditions, for instance, typhoid fever, are very fatal in operations. Most patients who are obliged to be operated on in the typhoid state die even from slight operation. We can, of course, only conceive of a limited class of cases that must absolutely demand operation. I will not allude to the chance of doing anything in the abdominal cavity when perforation has taken place from ulceration of the ilium in the typhoid state, because that is too doubtful to talk much about at the present time. I will allude to such cases as I have seen occur, as strangulated hernia in typhoid fever, the patient getting out of bed in a state of delirium and forcing down the hernia, and having all the symptoms of strangulation while in the third or fourth week of typhoid fever; or an accident, that the patient may be subjected to in the typhoid state; those cases may absolutely require an operation. You must do it. The patient will probably die, but there is nothing else to be done.

Hectic Fever. — That is a poor condition, but yet it is one in which the patient will endure an immense amount. It is a well-known fact that pathological amputations, those that are done for disease, for chronic disease of the joints and bones, long-continued cold abscesses, things of that kind, those operations called secondary and pathological operations, have a larger percentage of recovery than those which are done primarily after the receipt of an injury when the leg is clean and whole and the constitution fresh. This remarkable condition of things has not yet been wholly altered by the introduction of antiseptics. The balance, I think, is not so positive as it used to be, but still rather inclines to the pathological side; and the patient who has been sick in bed four or five months or a year with a diseased knee, subject to hectic, exhausted by suppuration, stands a much better chance of recovery than the patient who has just had a limb crushed; so that hectic is not a contraindication to interference. Patients who have been through the hectic stage will stand a great deal usually in the way of operative interference.

Alcoholism. — That is one of the worst things we have to contend with. It is, of course, as we will see later, of two forms: one, the man who is constantly indulging in violent debauches; and the other, the man drinking steadily every day without ever getting intoxicated. In the first case the man passes on into acute delirium tremens. In the second case, having been an habitual drinker, without excess, so-called, he probably has for years deranged his powers of endosmosis and exosmosis to an irremediable degree. The delicate membranes of the brain, of the liver, of the mesentery become changed by the prolonged use of alcohol, damaged, thickened. Absorption, or endosmosis and exosmosis, that incessant flow of nutritive and waste currents, becomes impeded. The veins become dilated. He deposits fat all over the surface. His skin becomes diseased also; all his organic functions are torpid; and proportionately he does badly after a surgical operation. We never should choose the acutely alcoholic stage for an operation, if it can be avoided; but unfortunately the same debauch that causes the alcoholism causes the accident that calls for interference. But it is not a desirable condition in which to interfere at all, inasmuch as delirium tremens is the most common result.

Age. — This is very important. Infancy is a good time for operations. Childhood, if you will limit that time from, say, five years old to puberty, is the very best time for operations. Children will recover from most extreme mutilations and accidents, repair great surfaces, grow cicatrices where the adult cannot do it, survive lacerations and bleedings and mutilations which the adult cannot do. The power to resist injury, the power to repair is cotemporaneous with the period of growth and decreases in proportion to its decline. During the time of growth the child and the young person are certainly keeping up the balance and making an immense addition every day. Let them be hurt: their growth will be checked a little while, but this great force is thrown to repair. Growth once done, reparative power grows less; and grows less and less throughout life, until in old age it becomes, as we know, extremely feeble. Infancy to a certain degree, childhood to a very marked degree, adolescence still to great degree, middle age to less degree, and old age to a feeble degree, respond to the great strain thrown upon the system by a surgical operation or an accident.

The processes of change and repair and the course of shock vary also very much at different ages. In the old person shock is very slow in coming on, and it is very slow in going off. It may not show itself much for some hours; when it comes, it persists three or four days. The old person will lie in a feeble state three or four days in a condition that would kill a younger one, and slowly rise out of it and recover. The prognosis is not in old persons to be compared to the prognosis in the person who is thirty-five or forty. In the old person shock is profound but slow, and may be rallied from in a condition in which we should not expect it to be in a younger person. In exact proportion to youth is the rapidity of shock and of reaction and of the inflammatory processes. In the baby the circulation and nervous forces are as active as they are in the insect you see flitting about with incessant fluttering of wings in the hot summer day: breathing, pulse and everything are rapid, and the changes are proportionately quick. This applies just as much to the diseases of children as it does to the surgery of children. A sick baby or sick child is going through its stages of shock, inflammation, and its reactions, its recovery or its death, and is going through the stages of its acute disease, in a few hours, instead of a few days.

What shall be done to prepare a patient for operation? Of course, attend to the digestive system. Give such a cathartic, if necessary, that it will act upon the whole alimentary canal, liver and other parts included, of which the best probably is the compound cathartic pill of the United States Pharmacopœia, which contains a small percentage of calomel and a good many drastic drugs. Clear out the alimentary canal, get the stomach into a fair state. Give iron and tonics, if necessary. Mental effect is very great. Here it is sometimes that the offices of the church have great effect on the patient, and they should always be estimated at their true worth, I think, in quieting apprehension and in adding to fortitude and making the patient willing and perhaps even happy in the prospect of an operation. I have seen the effect very marked indeed. If the patient desires anything of that kind, it should be encouraged, not only from motives of humanity and religion, but from scientific reasons also.

Habit. — That is a great factor. Get the patient used to things before you begin. I think it is sometimes of great value to get the patient to go to the hospital, if the operation is one of expediency, and lay off two or three days before the thing is done. He gets accustomed to the air, the room, the bed, gets acquainted with the nurses. We all know if we change our habitation or move away a little distance for a few hours into a new set of surroundings, that the effect on mind and body is quite marked even in a state of health, and the digestion and the sleep, etc., are very often a little deranged even by the slightest changes. That is especially true in the feeble nervous condition of the patient who is sick or is going to have an operation; and it is of great value sometimes to give a patient the habit of a place and familiarity with the nurses and the surgeon before the operation is done.

Absolute rest, also, sometimes in connection with this — or habitude, as I call it — is invaluable. This is especially true sometimes of operations about the pelvis and rectum; and I think it is true, perhaps not to the same degree it used to be, of operations about the joints. For instance, if you are going to do an operation which will require the limb to be done up in a stiff bandage afterwards, the irksomeness of the confinement will be great to the patient if he has not been accustomed to it, and I have sometimes thought that great gain has been got in the condition of the nervous system before operations on joints by putting the patient to bed and applying a splint for a week or so until he gets thoroughly used to that sort of condition, then after the operation if a bandage is put on he gets back to his habitual state, it is nothing new, and he doesn't fret and twist about and ache as he would otherwise do. We see this also in all surgical accidents, such as broken bones which do not require any operation. The patient with a broken thigh, put on his back, his head tipped down, his back aches furiously about two or three days, and after that he is perfectly comfortable. It is habit. Such a condition is important to establish in a patient before a severe surgical operation.

Modern surgery, I think we all know, has made its great gain by the introduction of anæsthesia first, and by the introduction of asepsis in these latter years. Nothing can be greater than the benefit conferred by anæsthesia, but the benefit conferred by asepsis also has perhaps been equally great, and it is, it seems to me, fully as great a discovery as the other. The surgeon is emboldened now perhaps a little too much. He is tempted to look in and see what is the matter by an incision, when in old times he would have contented himself in palpating the abdomen and trying to balance the probabilities in his mind as to what there might be beneath. I have no doubt that the gain in surgery by asepsis has been very great; and yet I have sometimes been led to think that surgical operations are a little overdone on that account, some done that need not be done; that the impunity to the surgeon given by asepsis is the cause of what I would call his rashness.

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Original Articles.

EXTRA-UTERINE PREGNANCY.[1]

BY W. F. WHITNEY, M.D.

I HAVE prepared a sketch of extra-uterine pregnancy chiefly from an anatomical point of view, leaving its clinical features to other readers.

From remote times it has been know that the fœtus was found in the abdomen outside of its proper place. The first well-reported authentic case is from a Spanish-Arabian physician of the Middle Ages, who described a woman with an umbilical abscess, from which fœtal bones were discharged. The older anatomists looked upon such cases as curiosities of nature; and it was not until De Graaf and Boerhaave had established the functions and structure of the ovary that a clear understanding was had of the possibilities that might occur. And the first rational grouping of the cases made by a German physician has stood with but little alteration to the present day. He divided them accordingly into ovarian, tubal or abdominal. To these, various subdivisions have been added, where more than one of these parts have been implicated in the growth of the fœtus or its membranes; but, as can be readily seen, these are of secondary importance.

Schroeder makes the statement that spermatozoa have been found in the pelvis of man and animals, thus proving that it is possible for the ovum to be fecundated either in the ovary or abdominal cavity. And this fact is important to bear in mind when reading the statements of those who claim that all pregnancies outside of the uterus are tubal and later reach the abdominal cavity.

Of the three chief divisions the ovarian may be regarded as the rarest. That is where the ovum is developed within the ovary itself. The most convincing case is that of a woman, murdered by her husband, in whose ovary was a cavity in which a distinct embryo was found. Several others not quite so conclusive are recorded. In the plate from Cruvelhier here shown is seen a mummified fœtus clearly attached to the ovary. And in the illustration from the ***Archiv. f. Gynæcol.***, the large mass lying to the left of the uterus is the fœtus still enclosed in its membranes, a section through which is shown below.

The points which are to be borne in mind in the anatomical diagnosis of ovarian pregnancy are: (1) the presence of both tubes without an ovum in them, (2) the utero-ovarian ligament in its proper relation, and (3) ovarian structure in the sac of the fœtus. In most cases this last condition is unfulfilled, as the remnant of ovary is entirely destroyed beyond recognition by the growth of the fœtus. In my own experience I have not as yet met with a case, unless one to be reported by Dr. Worcester, proves to be such on careful examination.

In the abdominal form, the early stages which have been found in the ovary and tube are extremely rare, while there are numerous cases where a quite mature fœtus, in a more or less changed condition, has been removed from the abdominal cavity. Several such specimens have been shown at meetings of this Society. And such facts have been taken as the proof for the assertion that it is the abdominal form alone which can reach maturity. The plates which are shown illustrate what is supposed to be the microscopic appearances in a very early case, and demonstrate how the decidual cells are formed from the connective-tissue cells of the lymph spaces of the peritoneum.

The membranes in the cases of true abdominal pregnancy are usually formed by bands from the peritoneum or from adhesions to the neighboring organs or intestines. In these sacs muscular fibres have been found which are supposed to have come from the subserosa in some way.

The tubal form is the commonest, and, from the fact of its usually rupturing within the first three months, is of the greatest clinical interest. The development of the ovum in the tube presents two points of marked difference from that which takes place in the uterus. First, there is no decidua reflexa formed over the ovum; and, second, the villi of the chorion do not dip down into maternal sinuses. So that the manner in which the nutrition is carried on, is still very puzzling.

Tubal pregnancy first called attention to the migration of the ovum, from the fact of a corpus luteum being found in the ovary of the opposite side. This has since been proved experimentally on animals, as well as the fact of the passage of the ovum through the uterus into the opposite tube.

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[1] The opening of a discussion on Extra-uterine Pregnancy in the Boston Obstetrical Society, November 12, 1892.

There are points of interest in the changes which the fœtus undergoes in the abdominal cavity that may be in place to mention here. One of these is the so-called lithopædion or stony fœtus. This is one that has been carried a long time and still preserves its external features, like a mummy, while all its tissues are infiltrated with lime. The specimen from the Warren Museum here shown was carried twenty-nine years. The longest recorded case is somewhat over fifty years.

In other cases the fœtus is quite quickly destroyed after death, and only the macerated bones are found. These are often voided spontaneously with the external opening of an abscess, as in the earliest recorded case, already mentioned.

How these two distinct processes could be brought about was shown by the experiments of Leopold, who introduced the embryos of one rabbit into the abdominal cavity of another; and he concludes that, in order for the fœtus to be mummified, it must be enclosed in a sac of proper membranes, and excite very little inflammation. If this is not the case, the soft parts are quickly destroyed and a skeleton is the result.

There remains only to call attention to the changes which take place in the uterus itself. It is usually stated that it is somewhat enlarged and a decidua is formed within it. Some of these specimens which are shown from the museum agree with this, especially the cases of interstitial pregnancy. But others give little evidence in the uterus of the pregnancy which you see has taken place in the tube.

There remains only one other condition to mention, and that is where the fœtus is found within the uterine walls. How it gets there is not as yet fully understood; but it is supposed to be in some way connected with a development of the ovum in Gärtner's canal, which has a connection with the Fallopian tube.

In closing, it may be said that the cases of extra-peritoneal pregnancy are those where the fœtus has been first formed in the tube or abdomen and through rupture has found its way into the layers of the broad ligament or beneath the peritoneum.

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EXTRA-UTERINE PREGNANCY.[1]

BY EDWARD REYNOLDS, M.D.

At the first meeting of the Committee appointed by this Society to report upon the present condition of medical opinion with regard to the subject of extra-uterine pregnancy, it was decided that the subject should be sub-divided among ourselves in such a way that I should have the honor of presenting to you a review of the recent literature of the subject, and of the opinions of those who have made themselves best known in connection with the questions of its pathology, the classification of its varieties, the possibilities of an early diagnosis, and the therapeutic responsibilities which that must entail.

To the great gratification of the Committee, Dr. Wm. F. Whitney has, however, been kind enough to agree to open this discussion by the exhibition of pathological specimens, and a review of the pathological points which his large experience has led him to think important.

I feel that I must preface my own share of this work by reminding you that the subject has so recently come into prominence that many of the most important points are still under discussion; and by stating that in the midst of the uncertainties which still beset it, it is impossible to do anything more with many of the questions involved than to present them in a shape for discussion, to quote the dicta of different authorities, and finally to postulate briefly the few points which seem to have become permanently settled.

The still unsettled state of opinion with regard to the frequency of extra-uterine gestation makes its difficult to reach any satisfactory conclusion upon this point; and the difference of opinion which obtains has been the cause of considerable and, unfortunately, somewhat acrimonious discussion. I believe that this alleged difference in frequency is due partly to a more extended interest in the early diagnosis of the affection in some localities than in others, and partly to a more active habit of reporting all cases in the first-named class of cities. There is probably no city in this country, and perhaps none in the world, in which so many instances have been reported in proportion to the population, as in Philadelphia; few, if any, cities of the first class (in a medical sense) in which so few cases have been reported, as in Boston. But I believe that we shall find this evening that the difference between the number of cases which have been observed here, and those which have been seen in Philadelphia even, is no more than would be explained by the smaller size of our city, when taken in connection with the fact that those men here who have had opportunities for observing such cases have not usually reported them, and that the interest of the general profession in the early diagnosis is therefore but partially awakened. If this explanation be true, it is certainly to be hoped that this discussion to-night may result in the detection and cure of a large number of future cases, which otherwise would have passed on to incurable disease or death.

Dr. H. F. Formad, the coroner's physician of Philadelphia, had seen upon the post-mortem table in 1890, more than thirty cases in which death was due to an undiagnosed ectopic pregnancy, all collected within the three or four preceding years; and there may have been, and no doubt were, in previous years, equally large numbers which failed of recognition in Philadelphia.

If the gynecologists of this vicinity are ready to admit that they, in common with other practitioners, must in the past have seen many cases of unrecognized tubal pregnancy, is it not likely that the pathologists must be prepared to make the same admission? I think we shall find our operators are prepared to state that they are constantly seeing a larger proportion of such cases, and I hope that our pathologists will be able to make the same report.

But the undiagnosed cases which are revealed by a post-mortem examination, form, in all probability, but a comparatively small proportion of all unrecognized instances of this affection. It is probable that there is a large percentage in which the patient survives the first and most imminent dangers of the disease, only to pass on into invalidism from chronic pelvic trouble, and finally dies, or is cured by the removal of diseased appendages, at a time when her pelvic organs have passed into a stage of inflammatory trouble (or even of chronic or acute pelvic abscess,) in which even a pathologist must necessarily fail to detect any traces of tubal trouble.

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[1] [illegible]

In making this statement, I am well aware that I trench upon one of the uncertainties of which I spoke in my opening sentences; and I am prepared to find a strong and active difference of opinion upon the subject. I must therefore beg leave to quote the statements of more experienced men which have led me to make it.

Dr. Johnstone, of Cincinnati, in arguing this question, says of such a patient: "She is subject to all the recurrent evils of pelvic disease, and the only way to cure her is to clean them all out, the same as with any other pelvic inflammation, and before her powers are exhausted"; and reports three cases, in which he thinks that one death and two cases of serious prolonged disease were due to conservatively treated extra-uterine pregnancies. Again, he says, in speaking of the destruction of the fœtus by electricity: "Furthermore, when we have diagnosed it correctly, and with safety to the mother destroyed both fœtus and placenta, we have done little more for the future of the mother than if we had found her with a broad ligament cyst, and done nothing more than tap it. We have not only left her to the dangers of suppuration of the present pregnancy, but to the risks of a repetition of the evil in the future."

Dr. Baldy, of Philadelphia, reports a number of cases of his own and others, in which subsequent trouble had followed an arrested extra-uterine fœtation, and says: "The claim that after the death of the fœtus, the trouble is past, would seem to be disproved by these cases, amounting to about eight per cent. of the whole number of women treated (cases collected), and supposed to be cases of ectopic gestation."

Thompson records a case where death of the fœtus occurred between the second and fourth months. Later, the fœtal bones were passed by the bladder.

Goelet records a case suffering from supposed pelvic hæmatocele; a vaginal incision was made upon the side of the uterus, and a fœtus of about the third month, in a state of decomposition, was removed.

Tuttle records three similar cases; Hanks, four; and the literature of the subject teems with similar instances.

In addition to these reports of cases of arrested ectopic pregnancy which are becoming frequent in literture, it seems difficult to believe, *a priori*, that such masses as we have all seen removed from the abdominal cavity in cases where operation has been undertaken before rupture, can be so completely absorbed as to leave the tube in anything but a dangerous condition. And when we remember that the diseased tubes — in which only such pregnancies occur — so constantly retain a latent power of infection for a prolonged period of years, it seems highly probable that the contact of their secretions with the hæmatocele produced by an intra-ligamentous rupture of that portion of the tube which is the seat of tubal pregnancy, must in a large proportion of cases result in the formation of a chronic pelvic abscess, even in cases in which the bones of the fœtus are still capable of absorption.

It is, perhaps, as yet too soon to even estimate the frequency or infrequency of this condition; but it is certain that there is a growing disposition to assign a constantly increasing importance in the etiology of chronic pelvic disease to unrecognized and arrested tubal pregnancy.

A question of even more practical interest than the natural history of untreated cases is the possibility of obtaining an assured diagnosis of the condition. This subject can only be treated by dividing all cases into classes, in accordance with the stage to which they have advanced; that is, we must consider separately the diagnosis before rupture, immediately after rupture, and in those cases in which the accident is not recognized until long after rupture has occurred. With this last class belong the alleged instances of primary abdominal pregnancy.

Diagnosis before rupture. It is probable that it is the rarest of all things for the physician to see a case of ectopic gestation before any rupture has occurred. That is, the symptom which leads the patient to consult her physician is in almost all cases the pain which accompanies or immediately precedes the giving way of the walls of the tube. It must be added, however, that there is a large class of cases in which the initial rupture is incomplete, and the resulting hæmorrhage is confined within a gestation sac; and it is probable that this class of cases form the bulk of those that are spoken of as having been recognized before rupture. Some such cases may often escape recognition, from the fact that the hæmorrhage, if it occurs sufficiently early, may possible destroy the vitality of the ovum, and permit its absorption. But we have seen that there is reason to suspect that even when this result occurs it is not necessarily the most fortunate for the patient. A diagnosis which is made at this time may certainly, from a clinical standpoint, be classified as a diagnosis before rupture.

In another class of cases, the pathological state is not even suspected until after the complete rupture of the walls of the tube. This may occur in the initial attack of pain, or after several unrecognized attacks. It may then be so situated that the resulting hæmorrhage is confined between the layers of the broad ligament, or may result in a free escape of blood into the peritoneal cavity.

In the first case, the hæmorrhage may be so small that the case is classified clinically with those diagnosed before rupture, and is only distinguished as an incomplete rupture after its removal and by the pathologist. It may be so large as to cause collapse, and the formation of an hæmatocele of extreme size.

When the rupture is intra-peritoneal, it may lacerate vessels of such size as to cause promptly fatal hæmorrhage; or may so far avoid the larger vessels as to cause no more hæmorrhage than is capable of spontaneous arrest, and thus lead to the formation of a secondary abdominal pregnancy.

The question immediately before us now is the possibility of obtaining a diagnosis in each of these events.

Diagnosis before rupture. Before any rupture has occurred, a diagnosis is very rare, because the only patients who are likely to be seen in this stage are the very few who happen to become the victims of extra-uterine pregnancy at a period when they are under treatment for some pelvic trouble. The establishment of such a diagnosis rests upon the presence of a rapidly enlarging hypersensitive tubal swelling, in connection with the rational signs of early pregnancy.

After an incomplete rupture has occurred, the appearance of the characteristic paroxysmal colicky abdominal pains usually results in a visit to the physician, and then the question of the possibility of a diagnosis assumes a more practical aspect.

Before entering upon the question of this possibility it may be well to again enumerate the signs upon which if made, it must rest. As a rule, the ordinary signs of pregnancy are present, namely, mammary changes, nausea, vaginal discoloration, and disturbances of the rectal and vesical function; but, if we remember the estimate which is usually placed upon their value during the first three months of normal pregnancy, we shall feel that their absence is not conclusive evidence here.

An ectopic pregnancy has frequently been preceded by a period of sterility, following the birth of a child, or more often a miscarriage; but many exceptions to this rule are noted. Menstruation is apt to be profuse and irregular; and in some cases an undue frequency follows an absence of one or two periods. It may, however, be wholly regular, or entirely absent. The patient may or may not consider herself pregnant. On vaginal examination, the cervix is usually found somewhat softened, and the uterus somewhat enlarged, while in the appendages on one side or the other a tense and painful tumor is found.

Ballottement can rarely be obtained. If fragments of decidua have been found in the menstrual blood, and pronounced such by a microscopist, they would go far towards establishing a diagnosis; but this has rarely been accomplished.

At first sight, it would seem that so extensive a collection of symptoms as this would afford conclusive evidence of the existence of ectopic pregnancy. When it is remembered how difficult is the diagnosis of early normal pregnancy, how misleading are its signs and symptoms, how frequently any new growth or inflammatory condition in the broad ligament is attended by sharp pain and marked heaviness, and that there is no one symptom which is absolutely characteristic of extra-uterine pregnancy, it becomes evident that the problem is a complicated one.

This is further proved by an appeal to experience, and to the reported cases. Upon the one hand, we find a set of men of unquestioned authority who declare themselves able to diagnose the presence or absence of early ectopic gestation with fair certainty in the great majority of cases. Opposed to them are a perhaps larger number of men, whose opinion should have equal weight, who claim that such a diagnosis is impossible.

Arthur W. Johnston says, in referring to pain as the most prominent of the early symptoms: "I know that nearly every one of those colicky pains means a giving way of some part of the tube. With these pains once begun, the patient comes to see her doctor, and then almost anybody can suspect the condition; but no one can be certain until the abdomen is opened."

Baldy states his position in three propositions: "(1) In a certain proportion of cases of extra-uterine pregnancy in the early stages, the diagnosis is easy and unmistakable. (2) In a certain (quite large) proportion of cases, sufficient symptoms are present more than to warrant a diagnosis of extra-uterine pregnancy, such a pregnancy not being present. (3) In a certain other proportion of cases, the symptoms, until rupture has occurred, are entirely wanting, or of such dubious character as in no wise to warrant such a diagnosis." He quotes cases seen by Joseph Price, Penrose, Hirst, Coe, Johnstone, and himself, in support of his position. Gill Wylie and Vanderveer report similar cases. Thomas, with all his well-known diagnostic ability, puts himself on record upon the side of those who believe in the frequency of such mistakes in the hands of the best men. Mann says: "T[illegible] and therefore can be, correctly diagnosed before rupture; but this does not alter the fact that in a considerable proportion of cases, rupture takes place before the existence of pregnancy is even suspected, and that the early diagnosis before signs of tubal rupture is rare."

Kelly says: "There is yet a class of cases where we get some of the symptoms, but there remains a doubt, big or little, according as more or less of the major signs are present. Then there are other cases in which none of the symptoms are present, but the disease is found out by an accidental examination, or a sudden death." He is, however, inclined to believe that the diagnosis can usually be made.

Upon the other hand, Skene says: "Complications render diagnosis more difficult, it is true; but in an uncomplicated case of ectopic gestation, I hold that, with due care in noting the history of the case and its peculiar characteristics and the physical signs, the diagnosis can be made as positively as anything else — as pyosalpinx or ovarian cyst, for example. There may be a shadow of doubt in the minds of the best diagnosticians; but is not that so in any diagnosis?"

Wilson says, in the same discussion: "I agree with every word he (Dr. Skene) uttered, and his views are exactly my views on this subject."

Jaggard says: "The diagnosis of uncomplicated extra-uterine pregnancy is easy." And many more authorities could be quoted upon one or the other side.

I believe that the key to so extraordinary a disagreement among men equally familiar with the subject, is to be found, as is so frequently the case in such disagreements, in the fact that they are using the same words with somewhat different meanings. In studying out their various papers at length, it has seemed to me that without exception, all agree that the establishment of a diagnosis, in the sense of an ability to say, "This is ectopic pregnancy, and any new growth of the ovary, or a hydro- or pyo-salpinx, can be positively excluded," is seldom easy, and frequently impossible. But that, upon the other hand, all are equally agreed that the establishment of a diagnosis, in the sense of saying, "This is probably ectopic pregnancy, and at all events is an acute enlargement in one of the uterine appendages; it is rapidly growing larger, and therefore needs immediate treatment, and this the more certainly, since it may be an ectopic pregnancy in danger of rupture," is invariably possible, whenever the symptoms have brought the case under observation sufficiently early. Such is, at all events, the result of my own experience and that of the other members of your Committee.

Diagnosis immediately after rupture, with or without the formation of an hæmatocele. — When a physician of to-day is called to a case in which the classical symptoms of concealed hæmorrhage have followed an attack of abdominal pain in a woman who may have been exposed to impregnation, the suspicion of a ruptured tubal pregnancy should be the first thing which occurs to his mind: and he should either act himself without a moment's loss of time, or with equal speed find some one else who is capable of either excluding extra-uterine pregnancy, or of taking the responsibility of its treatment.

When the condition of collapse following paroxysmal pain is accompanied by a history of the presence of the rational and physical [illegible] and an abdominal examination reveals a well-developed hæmatocele, there can be no question that the diagnosis is for practical purposes established; since even if it is, as Dr. Whitney has told us, possible that such a case may be in reality a chronic salpingitis, with hæmorrhage into the interior of the tube, the practical requirements of the case remain the same, and the differential diagnosis can only be made by the microscope.

When in the same condition even so much as a moderate enlargement of one tube, and an ill-defined bogginess in Douglas's fossa is found, the diagnosis is sufficiently well established to warrant interference.

When the history is suggestive, and the patient presents the appearance of concealed hæmorrhage of serious extent, the probabilities are so much in favor of an intra-peritoneal rupture of an extra-uterine pregnancy, that the patient should not be allowed to die without an exploratory incision, unless some other adequate explanation of her condition can be found.

The diagnosis of a pregnancy which has outlasted a rupture and become abdominal is not ordinarily an urgent matter, and is made by the recognition of fœtal parts on bimanual palpation.

Treatment. — In the period before rupture has occurred, the progress of medical science had three years ago discarded all other methods and restricted the question to the choice between electricity and cœliotomy. To-day, a few authorities of eminence recommend electricity as still to be considered in cases in which the diagnosis is unusually clear, when the presence of pus in the pelvis can be absolutely excluded, and when the case has certainly not advanced beyond the twelfth week. The great majority even of those who advocated its use in former years are, however, to-day agreed in pronouncing that it is more dangerous than cœliotomy, in view of the difficulty of eliminating mistakes in diagnosis; that it is less efficient; and that at the best it can do no more than avert the immediate dangers of the condition: to leave the woman still exposed to a risk of pelvic abscess, chronic tubal disease, and repetitions of the ectopic pregnancy.

Immediate cœliotomy, so soon as the diagnosis is established, is then, in the judgment of your Committee, the only treatment which should be considered before rupture of the tube.

After rupture, the treatment must depend upon the situation of the tear, and of the subsequent hæmorrhage. If the rupture has been intra-peritoneal, so large a proportion of cases bleed to death in the first hæmorrhage that there can be little doubt of the wisdom of an immediate emergency operation and the control of hæmorrhage without the loss of a moment's time, by compressing the vessels of the broad ligament at the cornu of the uterus so soon as the abdomen is opened.

When the rupture is intra-ligamentous and the hæmorrhage is confined between the layers of the broad ligament, much must be left to the judgment of the surgeon in the individual case. Few women actually bleed to death under these conditions; but if the tumor is, at the time when the diagnosis is made, so small that it can be readily removed, and is increasing in size, an immediate operation is probably less dangerous than the risks of further hæmorrhage, in combination with those of suppuration of the tumor, or of a subsequent cœliotomy. A hurried operation, with the patient in collapse, and the relations of the organs obscured, owing to the distention of the broad ligament with a large amount of blood, may be so extremely difficult as to confuse the most expert, and it may even be advantageous to defer its performance until the recovery of the patient from the primary collapse.

If this course is chosen, the time for the subsequent interference should depend upon the progress of the case, and the rapidity with which the patient rallies. Some operators will prefer to remove the diseased appendages, with the effused blood, while it is still fresh and before there is any chance of its decomposition. The apparently more conservative course of awaiting the resorption of the hæmatocele, and a secondary cœliotomy for the removal of the offending tube, if its subsequent condition renders this necessary, will commend itself to many men.

To recapitulate, your committee believes:

(1) That the present status of medical opinion on this subject is that ectopic pregnancies are almost always, if not invariably, tubal in their origin.

(2) That the diagnosis before rupture is dependent upon the existence of a greater or less number of the following symptoms and signs: Exposure of the patient to impregnation; a period of sterility, preceded by previous child-birth or miscarriage; the omission of one or more menstrual periods, followed by irregular over-frequent and usually profuse menstruation; the discharge of decidual membrane, which when present is pathognomonic, but is seldom found; the existence of intermittent, irregular, colicky pain in the abdomen; the usual rational signs of early pregnancy in the breasts and elsewhere; slight enlargement and softening of the uterus as a whole, and the presence of a tense and sensitive tumor upon one side or behind the uterus.

(3) That a diagnosis of this condition after rupture is to be based upon the existence of so much of the foregoing history as can be obtained, in connection with one or more attacks of severe paroxysmal, colicky pains, succeeded by sharp collapse, and the symptoms of concealed hæmorrhage.

(4) That a diagnosis before any rupture is rare, and that the establishment of a diagnosis before incomplete rupture occurs is beset with so many difficulties that an exact statement of the pelvic conditions, such as would be made by a pathologist upon a post-mortem examination, is usually impossible, without opening the abdomen. On the other hand, that the diagnosis of a condition which is so probably extra-uterine pregnancy, and so certainly dangerous to the patient, as to demand at least an exploratory incision, can readily be made.

(5) That the diagnosis after rupture is usually easy, and that this condition is so serious that a mere suspicion of it should be sufficient reason for grave anxiety.

(6) That before rupture, cœliotomy is always the best treatment; electricity being less efficient and more dangerous, and ultimately less curative.

(7) That after rupture, immediate cœliotomy is indicated, except where the hæmorrhage is confined within the broad ligament, and the patient is already so far collapsed that a primary operation may result fatally. When the hæmorrhage is confined within the broad ligament, is still so small that the patient is in good condition, and is increasing, an immediate operation is to be recommended

Finally, that the apparent infrequency of this accident in Massachusetts, as compared with other localities, is probably due to the failure of those who have seen cases to give them adequate publicity, and the consequent apathy of the general profession of this vicinity, under whose care the great majority of such cases must primarily come.

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THE DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.

BY GEORGE HAVEN, M.D.

The differential diagnosis of any intra pelvic or abdominal tumor is so uncertain and so disappointing, even when undertaken by men of large experience in abdominal work, that the statements made by certain men, notably Hanks and Kelly, regarding the ease of diagnosing cases of extra-uterine pregnancy is simply astounding. Hanks states that a diagnosis can be made in from ninety to ninety-five per cent. of all cases; and Kelly thinks that by following certain rules, a diagnosis can be made without great difficulty.

On the other hand, Dr. Joseph Price, Dr. H. C. Coe, Dr. A. W. Johnson, Dr. Tuttle, Dr. Thomas and Dr. Gill Wylie, consider the diagnosis during the early months of extreme difficulty.

The subject of diagnosis can best be considered by dividing the cases into three groups: first, cases where one is called upon to make a diagnosis during the first four months of pregnancy; second, cases from the fourth month to term; and, third, cases where rupture occurs.

The symptoms which suggest ectopic gestation can be given under fifteen headings:

(1) The absence of menstruation, or a flow coming on at irregular intervals, and of uncertain duration.

(2) Pain of a severe and spasmodic character, which may be permanent at first, than absent for some weeks, to return later with renewed vigor.

(3) Vaginal discoloration — a symptom of some importance, yet often noticed in cases where some other form of pelvic tumor is present.

(4) General signs of pregnancy, such as nausea, enlarged and tender breasts, increase in size of the papillæ, darkened aureolæ, milk in the breasts, ballottement, the presence of a tumor, irregular menstruation, and possibly gait.

(5) The history of having had a child or miscarriage. This is important, as cases occurring in nuliparous women are rare.

(6) Expulsion of decidua. This symptom is of great importance, although in the majority of cases we are not fortunate enough to have it present; or, if present, the clot and shreds of tissue are thrown away before a microscopic examination can be made.

(7) Increase in size of the uterus, with the fundus either pushed forward or to the right or left side.

(8) Elongated, soft and patulous cervix.

(9) The appendages on one side containing a thin walled and tender cyst. The fact, however, that a tumor is felt upon both sides should have no bearing upon the diagnosis, as one of the tumors may be due to extra-uterine pregnancy, and the other to some other form of tubal, ovarian or pelvic trouble.

(10) Pulsation of vessels in neighborhood of cyst.

(11) The rapid increase in the size of the tumor.

(12) Presence of fœtal heart sounds.

(13) Presence of placental bruit.

(14) Feeling the small parts of the child, either through the vagina or rectum, or by combined manipulation.

In the first group, namely, cases presenting themselves between the first and fourth months of pregnancy, all the symptoms enumerated may be present save those given under headings 12, 13 and 14.

Group 2 may present all the symptoms enumerated, and cases presenting themselves after the fourth month are much easier to diagnose, from the fact that symptoms 12, 13 and 14 may be present. In other words, that we may hear fœtal heart sounds, that we may get the placental bruit, and that it is possible to feel the small parts of the child through the vagina or rectum.

Rupture may occur in two ways: first, into the folds of the broad ligament, or, second, into the abdominal cavity.

If in the folds of the broad ligament, there will be a sudden onset of pain, with symptoms of more or less profound shock, and a distinct increase of the size of the tumor, due to the hæmatocele which is formed. If in the latter and more serious way; namely, into the abdominal cavity, — there will be pain, nausea, a feeling of impending danger, restlessness, rapid and thready pulse, suffocation, thirst, blanching of the lips and finger-nails, and disappearance of the tumor.

These symptoms will, of course, be more or less pronounced according to the size of the vessel or vessels ruptured. An absolute diagnosis can never be made, unless the decidua has been expelled, or the fœtal heart heard, save by opening the abdomen.

The principal things to be avoided are: first, mistaking a pregnancy in one horn of a bi-cornate uterus for the extra-uterine variety; and I believe that here it would be out of the question to speak with any degree of certainty, unless the condition had been observed before impregnation.

It is hardly possible to mistake an hæmatocele for an extra-uterine pregnancy, as in the vast majority of cases the hæmatocele is secondary to the pregnancy, and will have been preceded by the symptoms of rupture already described. There are, however, a few cases of hæmatocele where the blood tumor is added to from time to time and slowly, and it is well to bear this fact in mind.

A displaced uterus during the early months of pregnancy, complicated by fibro-myoma or cystoma, and a fibroid or tense multilocular ovarian cyst with bosces. can be mistaken for the small parts of the child. I have operated upon two cases, one an ovarian cyst, and the other par-ovarian, where all the symptoms of ectopic gestation were present, and where Dr. Edward Reynolds and myself thought it best for the patients to resort to operation.

In cases presenting all the symptoms of extra-uterine pregnancy, I believe that it is always best to assume the worst until the contrary is proved; and that waiting is the worst of all policies. I personally do not understand how a physician can, after a probable diagnosis has been made, be content to wait for a noticeable increase in the size of the tumor, or for more alarming symptoms. I believe that the right policy for him to pursue is to operate.

In cases presenting all the symptoms — or a sufficient number of them to warrant a presumptive diagnosis — I believe that many cases of unoperated tubal pregnancies, even if not causing the death of the patient, may cause her life-long suffering, in the shape of pelvic inflammation or pelvic abscess.

A few words regarding the technique of the operation.

The patient should have her bowels freely opened. She should then have a hot, full bath; the pubes should be shaved; the abdomen scrubbed with soap and water; a soft-soap poultice applied for two hours, to be followed by a corrosive poultice, which remains in position until the time of operating.

All instruments should be washed in soap and water, then rinsed off in warm water, wrapped in a towel, and placed — together with silk, or any other form of ligature which is preferred, the towels for the operation, the sheets, aprons and sponges (which should be made of gauze) — for twenty minutes in an Arnold sterilizer. When the instruments, ligatures, etc., are taken from the sterilizer, they should be placed upon a table, covered with a thick sterilized towel. The sponges should be placed in a pail containing hot boiled water. The operator and his assistant can best sterilize their hands by washing, first with soap, then soaking them in a saturated solution of permanganate of potash, until they are stained a dark mahogany color. They are then placed in a saturated solution of oxalic acid, or in a solution of peroxide of hydrogen, until the staining is removed.

The patient is then placed upon the table, preferable in the Trendelenberg position. This position has made abdominal operations much easier, as it allows all the viscera to descend toward the diaphragm, and at the same time the tumor advances as far as possible towards the opening into the abdomen. The field of operation is surrounded by sterilized towels, and an incision made through the abodominal wall. If there has been a hæmorrhage, it will be known by the blue color which the peritoneum presents.

The other steps of the operation are the same as those pursued in removing any abdominal tumor through the abdominal wall. The incision will vary, of course, with the size of the tumor, and I think should be about four inches in length to begin with. If much blood has escaped into the peritoneal cavity, it is well to irrigate the cavity with boiled water, at a temperature of about 100° F.

In case of severe hæmorrhage, it is well to bear in mind that a salt solution injected into the rectum will often cause the pulse to become stronger and less rapid, and will in favorable cases very soon supply the heart with the necessary amount of fluid to work upon.

Plunging a small needle directly into the femoral artery and injecting warm water, by means of a fountain syringe, has certain advocates in Germany. I do not know of this method ever having been pursued here, but can see no reason why it should not be.

I have operated, during the last three years, upon three cases where all the classical symptoms of ectopic gestation were present. One was a true case of tubul pregnancy. The other two were, as I have already stated, one ovarian, the other par-ovarian; and I think that the difficulty of a correct diagnosis in cases of ectropic gestation cannot be too strongly insisted upon.

"WHO makes the kittens, Jackie?"

"Why, God makes them, Ethel. He doesn't make them as He does babies, one by one, but He just says, 'Let there be kittens,' and there are kittens." — *Life.*

Clinical Department.

CASES OF EXTRA-UTERINE PREGNANCY.

BY A. WORCESTER, M.D., WALTHAM, MASS.

(Concluded from No. 4, page 85.)

CASE V. *Supposed Tubal Pregnancy. Rupture, operation, recovery.*

MRS. E. O., twenty-five years old, married five years. Three years ago she aborted at third month and was sick for a long time afterwards with "inflammation of ovaries, and uterine retroversion." She has never been well and strong since then, but she has always menstruated regularly, the last period occurring May 28, 1892. She was very well through the month of June.

July 7th, she was suddenly seized with a severe pain in lower abdomen, which lasted a few hours.

July 11th, I examined her at my office. The uterus was in fairly good position but fixed. The right tube was enlarged and exquisitely tender. The next night she was wakened with excruciating pain in the right groin and abdomen, which was only partially relieved by one-third of a grain of morphia hypodermically. Following this attack there was a slight discharge of dark blood from the vagina.

Similar attacks occurred July 16th and 19th, each accompanied by vomiting. During this time the mass in the right pelvis was enlarging, and could be felt extending into the iliac fossa, and also in front of the uterus. The tube was exquisitely tender, and, for fear of rupturing a sac, thorough examination of it was deferred until the patient was on the operating-table.

Dr. H. A. Wood saw her with me in consultation, and assented to the diagnosis of tubal pregnancy. She was moved to the hospital with the greatest care on July 22d, and after thorough preparation was operated upon the next day. On the way to the operating-room she screamed out that she had felt something "give way." An incision of three inches was made in the median line. Blood escaped on opening the abdominal cavity. In front of the uterus was a mass of clotted blood easily broken into and evacuated. A thick, firm band extended from the tumor into the iliac fossa, which proved to be the appendix vermiformis. This was ligatured and amputated. The right ovary and the ruptured tube were also removed after ligature with the Staffordshire knot. The stump was cauterized. After thorough sponging out, and placing a glass drainage-tube in Douglas's fossa, surrounded with a gauze packing, the wound was partially closed with silkworm-gut sutures. She recovered well from the anæsthesia. There was no vomiting. The next day there was considerable serous discharge. After several doses of magnes. sulphat. she had loose alvine discharges. On the third day the gauze packing was removed. There were no complications, her recovery was rapid. She was sitting up at the end of a fortnight. At the end of the third week she was walking about easily and returned to her home. Since then she has become a very strong and healthy woman.

CASE VI. *Supposed Tubal Pregnancy. Rupture, operation, recovery.*

Mrs. C., a slight, delicate woman, thirty years old. Two years ago her only child was born by aid of forceps. She was very ill afterwards, and for a long time. She has since menstruated regularly till August

4th, 1892, when she flowed less than usual. On passing her expected period in September, she believed herself to be pregnant. She thought her stomach larger. There was morning nausea.

On September 11th, she was suddenly seized with a terrible cutting pain in the rectal region. Her abdomen was afterwards tender. The pain never wholly left and was aggravated by defecation.

On September 15th, after another severe attack of pain, she fainted. Drs. Carroll and Baker, of Newton, to whom I am indebted for this history, found her in this condition. Her face was pale and anxious; pulse thin, 120; abdomen tender; pain located behind pubic arch and the right of median line; Douglas's fossa full, bulging with a mass that extended to right and pushed the uterus forward and to the left. This mass was exquisitely tender to the touch. The diagnosis was made by Drs. Baker and Carroll, of tubal pregnancy. Operation was advised and declined.

I first saw the patient the evening of October 2d. Her temperature was then 101.6°, pulse 110. Her belly was somewhat distended, and was tender to pressure, especially in the right iliac region, extending into the loin and to the median line. There was dulness on percussion over this region. The uterus was in normal position, somewhat fixed. There was a soft, fluctuating mass in Douglas's fossa, which extended up into the right iliac fossa.

The next day she was moved to the Waltham Hospital, and after thorough preparation was operated upon. Incision four inches, in median line. On incising the darkened peritoneum, dark blood escaped freely. The omentum was much discolored; the coils of intestine were soggy. About a pint of blood and clots was scooped out of Douglas's fossa. The mass extending into the right iliac fossa was with difficulty torn from its base. This mass comprised the ovary and the enlarged and ruptured tube. The base was a ridge-like fold, seeming like a second broad ligament, only extending diagonally from the uterus up into the iliac fossa. There was profuse bleeding from this ridge, which was controlled by a row of sutures. A deep stitch into the uterus was also necessary to control the hæmorrhage from the friable stump of the tube. The abdominal cavity was thoroughly washed out with boiled water. Guaze packing and a glass drainage-tube were used. She recovered well from the anæsthesia.

The next day the dressings were soaked. The packing was removed on the second day, the drainage-tube on the sixth day. The abundant serous discharge became purulent. Her fever, though less than before the operation, did not entirely disappear till the third week. Four weeks after the operation the sinus was almost closed; she was able to sit up, and her strength and health were fast returning.

Case VII. *Supposed Ovarian Pregnancy. Operation, recovery.*

I saw this case in consultation with Dr. H. A. Wood, and as his assistant. I am indebted to him for the history and for his kindly allowing me to report the case.

Mrs. S., thirty-one years old, had had three children, the youngest six years ago, and since this confinement she had had more or less pelvic pain all the time, and every few months severe attacks. Three years ago she miscarried. Her last menstruation in December, 1890, was more painful and more profuse than usual, and following it there came the most violent attack of pain she had ever experienced. Dr. H. A. Wood was then called. He found her unable to walk without great pain in the pelvis; she could not even raise her left leg without it. There was an exquisitely tender mass in the left pelvis, which could be distinctly outlined through the abdominal walls. The uterus was pushed by it to the right. In the posterior cul-de-sac the mass seemed boggy. Under hot douches and fomentations she became easier, but the mass grew larger. She began to flow scantily, and, by some days too early. Her temperature was at this time about 99.5°, her pulse 100. The patient was then brought to the Waltham Hospital and carefully prepared for operation, which was performed by Dr. Wood, January 18, 1891. On incising the abdominal wall in the median line there presented a globular tumor attached to the fundus of the uterus. Slight examination of it by the finger caused the appearance of dark blood, and in the Douglas fossa was found a mass of friable blood-clots. The tumor proved to be an ovarian cyst, the size of a small cocoa-nut. After aspirating and pulling up the sac, the enlarged tube was also brought up from the mass of blood-clots and amputated. The tube was occluded at a point one inch from the uterus; the outer portion, for three to four inches in length, was dilated, and contained a firm blood-clot, adherent to the tube, two inches long and of a finger's size. The fimbriated extremity was embedded in a firm fibrous mass, the size of a hen's egg, which during removal was torn open. The right tube and ovary were also removed. The tube and parovarium were much congested and lay in the mass of blood-clots. The tube was pervious to the probe, but the canal, half an inch from the uterus, was very small. The right ovary was normal, and contained a corpus luteum the size of a pea. The left ovary was wholly cystic, no ovarian stroma being recognizable by the naked eye.

After thorough douching with hot boiled water the abdomen was closed, except for a drainage-tube left in the Douglas fossa. The patient recovered well from the considerable shock of the operation. She was fed by the rectum for several days. On the fourth day her bowels were cleared by Rochelle salts, and her temperature, which had kept at about 100°, became normal. On the twelfth day the stitches were removed. There was not a drop of pus from first to last. On the eighteenth day she was sitting up; on the twenty-fourth day she was walking about; and on the twenty-sixth day she went home well; and so she has since remained.

COMMENTS.

It will be noticed in this case that the ovum either before or after its impregnation must have crossed the abdomen.

The parts removed from the last three patients were submitted to Dr. W. F. Whitney, who reports that his examination does not afford the absolute evidence needed to make certain that the rupture of the tubes was due to conception.

In only two of these seven cases, therefore, am I able to state positively that the trouble was due to ectopic gestation. I believe that this was the cause in all. And whether or not this is true, certainly so far as it can be made without the microscope, my diagnosis will hardly be questioned. In the cases where a ruptured Fallopian tube was found to be the cause of the intra-abdominal hæmorrhage there certainly is little doubt. It seems, therefore, proper to consider these cases as cases of ectopic gestation, at least for the purpose of studying the symptoms and physical signs which would again demand the treatment employed in six cases, and which I shall always regret not having been allowed to employ in the first case of this series.

It will be noticed that in each of the cases, with the possible exception of Case IV, the patients had previously conceived, and that the fœtation had been intrauterine. But in only two of the cases had the maternal function been normal; and in one of these there is a history of a difficult labor and of a resulting long illness. In four of the seven cases there is a distinct history of previous pelvic inflammation.

In all of the cases the menstrual function, excepting of course during previous pregnancies, had been regular; and in all the cases there was an interruption of this function accompanying the troubles now under consideration.

Six patients thought themselves to be pregnant, and three of the six experienced the usual discomforts of beginning pregnancy.

Two of the patients were under treatment for pelvic trouble before suffering any severe pain; but in all there occurred, sooner or later, a sudden seizure of terrific pain. This, in one patient, came in the eleventh week after her last regular menstruation; in one, in the ninth week; in four, in the sixth week; and in one patient the severest pain immediately followed a regular menstruation. In five cases a slight discharge of blood from the uterus accompanied or followed this attack of pain. In four cases this was several times repeated. In one case this pain was located in the umbilical region; in one case it was in the rectal region; in three cases it was in the right or left inguinal region.

In all the cases there was especial pelvic tenderness; and in four cases there was exquisite tenderness in the affected tube. In three cases the enlargement of the tube was noticed before its rupture.

More valuable perhaps than could be any statistical study of so few cases will be the conclusions I have myself derived therefrom.

In the first place, then, I conclude that ectopic gestation is not uncommon hereabouts. Second, it is not a difficult matter to make the diagnosis, at least so far as the patient is concerned, although the microscopists may need a long time for the study of the parts removed before establishing that diagnosis. Third, the proper treatment is the prompt removal of the afflicted tube or ovary, thus both anticipating Nature's usual method of slowly sloughing these parts away, and also avoiding the occasional fatal hæmorrhage. Fourth, this surgical treatment, which is frequently most urgently demanded, is not beyond the ability of the general practitioner, at least of such as will take the pains to prepare themselves for the emergency surgery of the abdomen.

SEMMELWEIS. — An international memorial to Semmelweis, who first insisted upon the infectious character of puerperal fever, but whose views were considered visionary until after his death, is to be erected at Buda-Pest.

A CASE OF EXTRA-UTERINE PREGNANCY.[1]

BY CHARLES E. PRIOR, M.D., MALDEN, MASS.

A. A. F., married nine years; first husband died of tuberculosis. One year after marriage miscarried at six months, and was sick six or seven weeks with pelvic inflammation, the symptoms being referred chiefly to the left side of the pelvis. Five years previous to this she had some pelvic inflammatory trouble located in the same place. Menstruation has occurred on the average about once in six or seven weeks. Menorrhagia and leucorrhœa most of the time. Menstrual pain chiefly in the region of the left ovary, and usually severe.

October 18, 1891, she applied for relief from epistaxis of about three weeks' duration. Last regular menstruation occurred about the end of June. She then went six weeks, as usual, up to the middle of August, when a show of blood appeared for a day or two, then ceased for a like period and began again. In this way she went on up to the end of September, when the epistaxis began. She had pain, but no more or less than was usual at her menstrual period; and, as she considered this only a prolonged menstruation, she sought no relief until annoyed by the constant bleeding from the nose. She had no nausea, or any other symptom indicating pregnancy.

Examination showed the left tube enlarged and tender, and the seat of the pain referred to previously. There was much cervical leucorrhœa, but no blood at the time of this examination. The uterus was slightly enlarged and in normal position.

Saline laxatives checked the epistaxis, and by unloading the pelvic circulation somewhat relieved her pain. She had no local treatment beyond the use of the hot vaginal douche.

After a week of this she began to flow again, and was put to bed with an increase of the pain in the left ovarian area, and moderate rise of temperature (99.5° to 100°). Diagnosis was chronic tubal disease, either gonorrhœal or tubercular, with hæmorrhage from the affected tube.

November 1st, seen in consultation with Dr. Elliot. She was then flowing most of the time. About the left tube and ovary was an indefinite, boggy swelling; extending well up behind the uterus and over to the other side. The outlines of the right ovary were obscurely felt. As the symptoms did not seem sufficiently urgent to warrant operation, it was deferred from time to time until November 25th, when cœliotomy was performed by Dr. Elliot.

The patient made a good recovery.

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Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY CHARLES M. GREEN, M.D., BOSTON.

PNEUMONIA DURING PREGNANCY.

FLATTÉ wrote his "Thèse de Paris"[1] on this subject in 1892, basing his paper on the examination of 234 cases.

Pneumonia occurring in pregnancy is a very serious affection. The mortality reaches 31%, and the danger is, moreover, greater according as the pregnancy is more advanced. In the first six months the mortality is 23.4%, but rises in the last three months to nearly 40%. The aggravation of pneumonia in pregnancy is due to the blood changes, to the modifications of the circulation, to the [frequent] expulsion of the fœtus, and above all to the over-taxing of the heart.

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[1] Abstract in Revue des Sciences Medicales, July, 1892.

[1] Read, by invitation, before the Obstetrical Society, Nov. 12, 1892.

Pneumonia is a frequent cause of interruption of pregnancy (55.4%): this accident is the more to be apprehended the more advanced the pregnancy. Abortion is observed in 14.7% of cases, while premature labor occurs in 63.9%. While death rarely occurs in the first months before the expulsion of the fœtus, (4.2%), it much oftener occurs in the last months before delivery (35%). The interruption of pregnancy is due to the high temperature, to the accumulation of carbonic acid in the maternal blood, and to the death of the fœtus.

The prognosis is more grave for the infant than for the mother; since fœtal death is inevitable before viability, and in the last months occurs in 39.7% of cases, and after birth the new-born is not exempt from all risk. It seems proved that in some cases multiple foci of the pneumococcus, especially in the lung, have developed in the new-born, whether the microbe may have traversed the placenta or may have passed in the milk.

Artificial delivery and every active interference in cases of pneumonia in pregnancy are absolutely contra-indicated. [This generally accepted statement does not, however, mean that spontaneous abortion and premature labor should not be assisted, if necessary.]

MACERATION IN A LIVING FŒTUS.

It has been generally supposed that intra-uterine maceration of the fœtus is always a post-mortem change; but the following observation by Schuhl[2] shows that maceration may occur in the living fœtus. A woman of twenty-three, pregnant for the fourth time, was delivered in the eighth month of a living fœtus, which succumbed, however, some minutes after its birth. The fœtus measured eighteen inches; the abdomen was enlarged; there was no œdema. The feet and hands were completely stripped of their epidermis. The epidermis was likewise wanting on the lower half of the right leg, on the lower third of the left leg, on some parts of the forearm, of the penis, of the abdomen, and of the left cheek. The skin on the edge of some of the denudations of the abdomen was of a deep red color; in the other denuded parts, the skin was pale red.

INDUCTION OF PREMATURE LABOR BY INTRA-UTERINE INJECTIONS OF GLYCERINE.

The experience of Pelzer[3] in the induction of premature labor by intra-uterine injections of glycerine, (he has reported five cases, of which four were successful), has led Edgar[4] (New York) to employ the measure in two cases which he reports in detail. One was a case of pelvic contraction in the thirty-eighth week, and the other a case of low placental attachment at the eighth and one-half month, with recurrent hæmorrhages.

The method employed was as follows: Under careful asepsis the anterior cervical lip was brought down nearly to the vulva with vulsella forceps, a braided silk catheter introduced for from eight to twelve inches between the membranes and the uterine wall, and half an ounce of sterilized glycerine was then slowly injected, and the catheter withdrawn; the woman was left in the dorsal position with her hips raised by pillows.

In Case I, the injection was made at 11.30 A. M., strong uterine contractions set in at 2 P. M., and the third stage was completed at 8.05 P. M. The child lived, and the mother made a normal convalescence.

In Case II, the half-ounce of glycerine was injected at 11 25 A. M., and, on the withdrawal of the catheter, the smallest sized Barnes's dilator was placed in the cervix and injected with creoline solution. At 11.55 A. M., thirty minutes later, good contractions were present, and at 1.30 P. M. the Barnes's bag was expelled and was replaced by one of the largest size. At 3 P. M. this bag was expelled, and at 3.30 P. M., as the head had not engaged, one ounce of glycerine was injected high up. At 9 P. M. the first stage was completed, and the child was born in twenty minutes. The convalescence was normal. Pelzer used from an ounce and three-quarters to four ounces of glycerine, and employed the injection to stimulate already existing contractions, finding that feeble pains were strengthened by the procedure. The glycerine was not found to escape from the uterus on the withdrawal of the catheter; but the pelvis was in each case elevated with pillows.

The chemical affinity of the glycerine for water resulted in a great serous discharge from the uterus; but whether this chemical property of the glycerine, or its action as a foreign body in the uterine cavity, or the mechanical separation of the membranes, or all three of these factors, determines the onset of labor must be determined by further investigations.

[In Edgar's second case, it is fair to suppose that the Barnes's bags had some influence in the induction of labor; but the proposed method is an interesting one, and deserves further trial. Of course, great care must be taken to avoid the introduction of air within the uterus. — Rep.]

DYSTOCIA FROM SHORT OR COILED FUNIS, AND ITS TREATMENT BY POSTURE.

King[5] (Washington) again calls attention to the absolute or relative shortness of the funis as a cause of dystocia, and quotes a number of cases illustrating the various consequences that may ensue from this complication, to both mother and child, apart from the lingering labor.

As far as the child is concerned these consequences may embrace asphyxia, if the cord is coiled about the neck or trunk with sufficient tightness to interfere with the funis circulation, and irreparable hæmorrhage, if the cord is ruptured at the umbilicus: intestinal hernia may also occur in this last mentioned accident. The mother may not only suffer the prolonged pain of ineffectual labor, but may also experience a more or less serious hæmorrhage from premature detachment of the placenta, and many even incur the perils of inversion of the uterus.

The symptoms of this tolerably frequent, but often unrecognized, complication of labor are inexplicable delay when the pains are strong and apparently sufficient to overcome the present resistance, and marked recession of the head in the intervals between the pains. The parturient, also, sometimes appears to suffer undue pain, and occasionally the seat of placental attachment is felt to be depressed during the uterine contractions.

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[2] Revue Méd. de l'Est, [illegible], Revue de [illegible] Méd., July, 1892.

[3] Archiv für Gynäkologie, Band xlii, Heft [illegible].

[4] New York Medical Record, Nov. [illegible], 1892.

[5] American Journal of Obstetrics, [illegible]

The treatment of these cases of dystocia, to which King wishes to call especial attention, is the treatment *by posture*, meaning by this the change of the woman's position from recumbent to the sitting, kneeling, or squatting posture; or, again, to a position midway between sitting and the dorsal decubitus. This method of treatment is not new, but was successfully practised by Denman more than a century ago: that it has fallen into comparative oblivion King attributes to the present more ready use of forceps. It is easy to see, however, that the injudicious use of forceps in these cases, may do irreparable damage to mother and child, and conservative obstetrics would seem to demand that, in the event of the occurrence of delayed labor from short or coiled cord, more intelligent treatment should be applied that the exhibition of increased *vis a fronte* which may result in inversion of the uterus or rupture of the cord at the umbilicus.

King's views on this subject were commented on in these reports four years ago, and his reasons quoted for advocating the postural methods above alluded to. Suffice it to say that there is good reason for believing that with the parturient placed in one of the postures mentioned, the uterus and its contents are carried by the force of gravity as low as possible into the pelvis, and the canal thereby somewhat shortened, perhaps enough shortened to permit the birth of the head by natural efforts: the cord can thus be easily reached and severed.

[King does not in this paper deal with cases in which postural treatment is unavailing, as it must be when the funic shortening is considerable; but the reporter cannot forbear to point out that in such cases the use of forceps is in his opinion contraindicated. Rather, the suspected cause of dystocia should be carefully verified by the introduction of the hand and the examination of the length and disposition of the cord: coils may thus perhaps be removed; but if such a procedure is impossible, or if the cord is absolutely short, the funis should be severed by the fingers and delivery immediately accomplished. By these means the mother should suffer no harm, and the child would run less risk from undue hæmorrhage before the cord could be secured than would be incurred either from long delay or from the injudicious use of forceps.]

THE REVIVAL OF SYMPHYSIOTOMY.

At the annual meeting of the American Gynæcological Society in September, 1892, Dr. R. P. Harris, of Philadelphia, read a paper on "The Remarkable Results of Antiseptic Symphysiotomy": an abstract of this valuable contribution to obstetric literature appeared in the JOURNAL of October 20, 1892. At the time, symphysiotomy had never been performed in this country.

Ten days after Dr. Harris's paper was read, on September 30th, the first symphysiotomy in this country was performed by Jewett, of Brooklyn; and three days later the operation was again performed by Hirst in Philadelphia. Dr. Hirst reports both these cases, and several recent European cases in a paper read before the Philadelphia County Medical Society in October, 1892.[6]

Jewett's Case. — A native American primipara, after nine hours' labor, presented the occiput at the pelvic outlet, where it was firmly held by approximation of the tuberosities of the ischium which reduced the transverse diameter of the inferior strait to three inches. When the case was seen by Dr. Jewett, nine hours later, the forceps had been vigorously used in vain; he therefore performed symphysiotomy, eleven and one-half hours after the impaction of the head at the outlet. Delivery was effected by suprapubic pressure and by shelling the head out with the fingers in the rectum. The woman is now in good condition; but the child died twenty-four hours after birth from undue compression of the skull during its long impaction.

Hirst's Case. — A German primipara, aged nineteen, fell in labor October first. Next day the pains became very vigorous, and when seen by Hirst, October third, the contraction-ring was high, and the child's head was freely movable above the brim. The membranes were unruptured and the child alive. The pelvic measurements were normal in the transverse; but the *conjugata vera* was only 7¾ cm., or 3.1 in. Hirst believed that the choice of operation lay between Cæsarean section, craniotomy and symphysiotomy. [He does not mention in his report whether internal podalic version was considered; but it is reasonable to conclude that that operation was considered, and ruled out, either on account of the high contraction-ring or of the estimated size of the child. — REP.] Symphysiotomy was decided upon and performed, and the child delivered with forceps in one hour and four minutes from the time the operation was begun; the delay was intentional, owing to rigidity of the cervix. The fœtal head measurements were: B. T., 3 in.; B. P., 3.6; O. F., 4.8; O. M., 5.4: circumference, 13.6. Mother and child did well.

Hirst clearly describes the technique of the operation, essentially as Harris had done, and believes that the position of symphysiotomy is now established beyond a doubt. It is applicable, he states, in pelves with a conjugate over 6.7 cm., or 2.68 in., and should almost entirely displace the Cæsarean operation for a relative indication. It is a much simpler, an easier, and a safer operation. This opinion is shared by Leopold, whose brilliant success with the Sänger operation entitles his views of a rival operation to respect.

It has long been objected to the operation of symphysiotomy that a sufficient separation of the pubic symphysis to give an adequate increase to the contracted conjugate would injure the sacro-iliac articulations. It is now found, however, that the pubic bones may gape seven centimetres (2.8 in) without injury to these articulations or to the bladder, and the conjugate is thereby increased from five-tenths to six-tenths of an inch. "The symphysis unites surprisingly soon with careful asepsis, and three weeks after the operation the patient can walk as firmly and as well as ever."

Hirst quotes two successful cases by Leopold,[7] one by Freund,[8] and one by Porak.[9]

Since the preparation of Hirst's paper, other cases of symphysiotomy have been reported from time to time, although we have heard of but one other case as yet in this country. Von Velits[10] reports a case from the Pressburg clinic. The patient had twice been delivered by craniotomy: the pelvis was of the generally contracted, flat, rachitic variety; and the true conjugate measured three inches. Pubiotomy was decided upon, and was performed as previously described, except that Von Velits, following a suggestion of Leopold, that it may not always be necessary to separate the entire symphysis in minor degrees of pelvic contraction, cut through only the upper three-fourths of the articulation: the symphysis now separated from two-fifths to three-fifths of an inch. With two assistants exerting counter-pressure on the trochanters an attempt was made to deliver the child by pressure over the uterus; but as this method was unsuccessful, and as the fœtal heart was failing, the forceps was applied and an asphyxiated (but subsequently resuscitated) child was easily delivered. After one easy traction, however, the remaining fourth of the symphysis, previously uncut, separated with an audible snap, and the entire articulation then separated to the extent of one and three-fifths inches. The patient subsequently had a small stitch abscess; but the symphysis united well and the woman left her bed on the twenty-second day and was discharged well, with her child, on the twenty-sixth day after the operation.

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[6] Philadelphia Medical News, October 15, 1892.

[7] Centralblatt für Gynäkologie, 1892, No. 30.

[8] Annales de Gynecologie, September, 1892.

[9] Centralblatt fur Gynakologie, 1892, No. 40.

[10] Loc. cit., 1892, No. 44.

Zweifel[11] (Leipzig) also reports a case in a woman who had had seven spontaneous labors: all the children had been lost except one which had been delivered at eight months. The pelvis was a flat rachitic, the *conjugata vera* being 3.4 in.: the child was above medium size. In the light of previous experience with version and forceps, it was thought proper to deliver by either Cæsarean section or symphysiotomy, and the latter was chosen. The ossa pubis were entirely separated, and during the extraction with forceps the bones gaped asunder to the extent of 2.6 in. Throughout the operation there was a good deal of venous hæmorrhage which was subsequently controlled with great difficulty and only after the use of stitches. During the extraction Zweifel felt that the sacro-iliac articulations were in the greatest danger of fracture.

The child, though born alive, died of pneumonia on the fourth day. The mother made a good convalescence and in three weeks had recovered her normal power of locomotion, and the pubes was found to have firmly united.

Torngren[12] (Helsingfors) reports two cases, both with generally contracted pelvis, and a disastrous obstetric history. The first patient died within twenty-four hours; but the autopsy revealed a fatty heart and chronic nephritis, so that death was not attributable to the operation. The child was saved. The second case was in every respect successful, and mother and child were discharged well one month from the day of operation. In this case the ligamentum arcuatum was not cut through in the hope of preserving its integrity; but after the extraction of the child it was found to have been ruptured, and a considerable hæmorrhage occurred which was only controlled when the pubic articulation was brought together and the tissues in front of the symphysis united with sutures.

Caruso[13] reports two cases. In the first the child was lost from coiling of the funis [abdominal section would probably have saved this child.—Rep.]; but the mother made a good recovery, and on the twentieth day experienced no difficulty in locomotion. The second case was successful both for mother and child, and on the thirtieth day there was a firm union of the symphysis and complete ability to walk.

Caruso presents a table of twenty-two symphysiotomies performed by the Neapolitan [illegible] and others, and concludes therefrom:

(1) That since the adoption of modern aseptic methods not a single mother has been lost by this operation, and that of the children only two have perished.

(2) That the puerperium has been in most cases fever free and uninterrupted, the wound healing by first intention except in one case, and in one other where there was suppuration from two stitch sinuses. In two cases, however, there were vesico-vaginal fistulæ, and in one an urethro-vaginal fistula.

(3) That subsequent disturbances were observed in no case: that there was no pain, no disturbance of the bladder, and no difficulty in walking. Five women were operated on for the second time with successful results as regards health.

(4) That symphysiotomy is indicated, when the child is alive, in contracted pelves having a *conjugata vera* of from 2.68 to 3.24 in. That the operation does not conflict with Cæsarean section, which latter operation is indicated in pelves with shorter conjugates. That the operation conflicts chiefly with craniotomy in respect to indication. That in pelves measuring more than 3.24 in. in the conjugate, the high forceps [Why not podalic version? — Rep.] is to be tried, failing which, symphysiotomy.

[Such is an abstract of the literature from those who are advocates of this resurrected operation, that has come to our notice. The failures are yet to be heard from. The record, as regards successful result is a brilliant one; but with the greatest respect for the advocates of this operation we are bound to consider the wisdom of its performance as still *sub judice*. In spite of the evidence thus far presented, we are not yet convinced that in pelves below three inches in the conjugate the Sänger Cæsarean section is not the preferable operation both for the mother and child in cases not seen sufficiently early for the induction of premature labor. In spite of evidence thus far offered, and after a recent careful observation of the pubic section on the cadaver, we can but believe that symphysiotomy is an operation requiring greater skill for its successful performance than the abdominal section. Further, that the possibilities of irreparable injury to the bladder, urethra or clitoris are too great to be ignored; all of which dangers are absent in the Cæsarean operation. In the latter operation the dangers are known and to a great extent avoidable; in the former, it seems impossible that in some cases accidents will not occur, which, while not costing the patient her life, may entail discomforts and invalidism through a lifetime. Fœtal life, too, seems to us more secure by the abdominal delivery. We can, therefore, but bespeak a prudent conservatism in weighing the merits of this apparently brilliant operation. — Rep.]

The following is a good example of the kind of medical joke which appears in the daily press:

Patient. — "As we have known each other so long, doctor, I do not intend to insult you by paying your bill. But I have left you a handsome legacy in my will."

Physician. — "Very kind of you, I am sure. Allow me to look at that prescription again; there is a slight alteration I should like to make in it."

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[11] [illegible]

[12] [illegible]

[13] [illegible]

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR meeting, November 12, 1892, DR. J. G. BLAKE in the chair.

The evening was devoted to the consideration of

EXTRA-UTERINE PREGNANCY.

DRS. W. F. WHITNEY, EDWARD REYNOLDS and GEORGE HAVEN, read the opening papers.[1] and DRS. HOMANS, MAKECHNIE and others reported cases.[2]

DR. E. H. STEVENS saw the case reported by Dr. Makechnie in the afternoon, and the interesting feature was the condition of the pelvis. The woman was in a good deal of pain. She had had morphine. On examination there was a mass which filled the right side of Douglas's cul-de-sac pressing down into the vagina. This was very tender. In passing the hand over the abdomen a tense, elastic tumor could be felt, filling the lower part of the abdominal cavity. From the history the doctor gave me it seemed to me it must be due to hæmorrhage into the abdominal cavity; and acting on this supposition, I advised an operation and operated as soon as we could get things together. The woman's condition was certainly very alarming and growing more so, and it seemed as if she must die when she went back to bed. When the abdominal cavity was opened a clot of blood presented; and fearing there was still bleeding going on, I passed my hand down and got hold of the uterus and broad ligament, and clamped before anything was done to clean out the clots. This certainly proved a wise thing to have done, because as we got down into the region of the uterus we found fresh blood welling-up, showing that bleeding was still going on. The clots that were taken out and saved pretty nearly filled a tin wash-basin. The woman had a temperature of 102.5° before operation. I think there must have been an inflammatory condition before the operation was done.

DR. C. E. PRIOR also reported a case.

DR. ELLIOT: In examining the pelvis, and from the history of the case, there seemed to me to be a tubo-ovarian cyst on each side; and both Dr. Prior and myself thought it was a hæmato-salpinx bleeding down through the uterus. Extra-uterine pregnancy was suggested, but not thought probable. At the operation all the organs were found glued together, and the tubes were dug out. There seemed to be at first an ordinary tubo-ovarian cyst. While the operation was going on that was what I supposed we had to do with. In taking out the left side it was noticed, as I freed the adhesions and pulled out this tubo-ovarian cyst, that three or four arteries spurted from the cyst, and that is very unusual. On looking the specimen over, Dr. Whitney discovered a beautiful case of tubal pregnancy which had been operated on, but not diagnosticated. He has some very beautiful microscopical sections of the fœtus.

In regard to this subject in general, I have seen in consultation within the last two years or so four cases. I have been able to make the diagnosis in all the cases except the one just mentioned. That is the only one I have operated on. In the last few months I have seen several cases of a certain type that illustrate the difficulties of making the diagnosis and one of the sources of error. Gerriet, of New York, has stated that it is possible for pregnancy of the tube to slip into the uterus and become uterine pregnancy. I saw a case in my office where there was undoubtedly pregnancy present with a uterus enlarged and soft and a tumor on one corner bulging out, about the size of an orange, and with the ordinary symptoms of extra-uterine pregnancy. The irregular flowing, etc., were perfectly typical. In this case I told the doctor I suspected extra-uterine pregnancy. The case was seen by Dr. Richardson a few weeks later, and this lump I speak of had entirely disappeared. He found a fœtus in the uterus. My diagnosis had not been positive, but my suspicions had been strong enough to tell the doctor I thought it was possibly extra uterine pregnancy; but it was not a case of extra-uterine pregnancy, or if it was, it was a case where the fœtus is in the tube and slips into the uterus. This afternoon I have been called to one of the larger cities of Massachusetts to see a case like it. The doctor had found a case which he supposed to be extra-uterine pregnancy, and had put a curette into the uterus and found it empty; and bimanually he found the uterus enlarged and this same lump on one side. I examined the case without ether and confirmed his diagnosis. Under ether, however, I thought I would put in the curette; and in putting it in, I went into a large cavity which seemed to be an enlarged uterine cavity much too large for an extra-uterine pregnancy. I dilated the cervix with difficulty, and went in with forceps and pulled out pieces of a fœtus; and in the meantime this lump on the side of the uterus went down, so that either the uterus humps itself up on one side or the tube is able to empty itself, to account for this same condition in both cases.

Another case was one on which I operated for ovarian tumor three or four years ago. She was anxious to have a child. I left the other ovary which was somewhat diseased. I never take out both unless they are seriously diseased. This patient was very anxious to have children and came to me over and over again. Finally, I dilated the cervix; and this was immediately followed by pregnancy, and as the uterus enlarged the other ovary enlarged. It lay right beside the uterus, so in that case I was very much alarmed and wrote the doctor that I suspected extra-uterine pregnancy; and all the symptoms, the cessation of menstruation with irregular flow were present, but it is not a case of extra-uterine pregnancy. The uterus is now symmetrical and going on to full term; so that there are very serious difficulties in certain cases in the way of making the diagnosis I think.

DR. VICKERY: I saw a case of early extra-uterine pregnancy in June of this year. I wrote out a careful history of it, which I gave to Dr. Richardson thinking that he was to report the case. However, I can give the substance of it. This woman had a baby when about seventeen. She was twenty-five, and had not been pregnant in the interval. About a year before last June, I saw her with a double pyosalpinx; and I thought she would come to operation, but she got better; and she sent for me in June to see if she was not pregnant. I found the womb and tubes in a great deal better shape than before, so that I told her I could not tell whether she was pregnant or not, but it was more possible for her to be pregnant than ever before, that is, she was more nearly normal. The 28th of June, when she was about five weeks along, she had severe pain and collapse, but rallied very quickly. The trouble about making the diagnosis was that there always had been masses on each side of her womb, and that she fainted at any provocation; for instance, always when she had coitus, according to both her own statement and her husband's. The day before, she had suffered from indigestion. She got over the immediate collapse a few moments after I had injected morphine or nitro-glycerine, I forget which. She got better so fast I thought it was only colic and her idiosyncrasy about fainting; but in a few days there was a noticeable change in the size of one broad ligament. I induced her to go into a hospital, and Dr. Strong saw her. She passed some decidual membranes so as to confirm the diagnosis; and the morning she was going to be operated on her husband interfered, and she left that hospital and went home. She was next taken to the Massachusetts General Hospital, and Dr. Richardson operated on her.

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[1] See pages 106, 107 and 111 of the Journal.

[2] To appear in an early number of the Journal.

Dr. M. H. Richardson: This subject interests me from the standpoint of the general surgeon; and the part of it which is of the greatest importance to me, is in the diagnosis of these conditions or in the recognition of those abdominal conditions which require immediate operation. The only question in the most of my cases that has arisen, has been whether or not to open the abdomen; and the exact diagnosis in many cases has not been made; in other words, it is generally one of those formidable emergencies to which we are occasionally called, where we must decide whether or not to do something. I have seen thirteen cases in which the question of extra-uterine pregnancy or of abdominal hæmorrhage has arisen. I will speak of Dr. Vickery's case first, although that was the sixth or seventh case I had operated upon. That case did not differ from several others where there was existing a tumor in the region of the uterus. I think in Dr. Vickery's case there was a well-grounded diagnosis of extra-uterine pregnancy from the history. This was confirmed by the operation, although I think nothing characteristic was found at the time of the operation. It was a class of cases of which I have had quite a number, where there was a large hæmorrhage into the broad ligament. The operation consisted in the drainage of this cavity by abdominal section, in the washing out and clearing out of all clots in the tumor, which was about the size of a child's head. The operations, of which I have had four of this kind, were all successful, and although not as quickly successful nor as brilliant as this shown here this evening, where the fœtus has been removed bodily, yet the recovery in all the cases has been gratifying. That is a question the Society I dare say will not care to discuss as to the method of treating these tumors, whether to wash out and drain both ways or try the enucleation of the whole mass. I dare say that is not within the scope of the present discussion. The first case of extra-uterine pregnancy I reported some years ago, where no diagnosis was made, and where I removed, at the eleventh month, a fœtus at full term. This patient recovered after supra-pubic and vaginal drainage in accordance with Dr. Elliot's suggestion. The second case was most alarming on account of hæmorrhage. The abdomen was full of blood, and death was averted by prompt interference and removal of a fœtus of some weeks' duration. The third was Dr. Vickery's. I had another case this summer precisely like it, where I think there was no doubt of extra-uterine pregnancy, treated in the same way. One previous case was the same. In all these cases there was abdominal hæmorrhage and I made the diagnosis of extravasation of blood into the abdomen which was verified at the operation; at the moment the peritoneum was exposed it having the dark color quite characteristic of abdominal extravasation.

The fifth was a most interesting case, inasmuch as there existed all the symptoms of extra-uterine pregnancy; and yet I was not able to determine at the operation that there was a real fœtus. In this case there was hæmorrhage into one broad ligament, treated in the same way I treated Dr. Vickery's case. There was a second hæmorrhage soon after, and then a third. In none of these cases was a fœtus removed. I dare say it was not extra-uterine pregnancy.

The next case was one of the most dreadful and the only fatal one I have had. The wife of an intimate friend of mine was taken with sudden pain and faintness. She had the idiosyncrasy of fainting, and had had this many times before; and the husband was deceived, and thought nothing of it for two or three hours. It was one of those most alarming cases where the patient was in a state of shock and collapse, so that in three hours the physicians who lived just across the street were called in, and she had no pulse at all; and they were waiting, I think very properly, by her side until there should be some flicker of a pulse to work upon. I saw her at eleven, and she died a few moments later. That, no doubt, was hæmorrhage into the abdominal cavity. It was one of the most important of this class of cases where operation to be successful must be done immediately.

The next case was a similar one.

Another case I operated on a few days ago, where the diagnosis was made by experienced and skilled physicians of extra-uterine fœtation in August, and confirmed last week. I doubted the diagnosis, and went into the abdomen and found an ovarian tumor with twisted pedicle. I mention that as a case of mistaken diagnosis.

Then two cases which I have recorded as mistaken diagnosis. One was referred to by Dr. Elliot, where he found a tumor at one horn of the uterus. I was asked to see this woman on the following day after Dr. Elliot's visit. I dilated the os and found a fœtus there; but I cannot give any information about the condition of the horn of the uterus at that time.

Another case I saw in consultation with Dr. Chadwick, in which he made the diagnosis of extra-uterine pregnancy, and where as a precaution we examined the uterus before performing laparotomy and found a fœtus. I mention these three cases in my experience of twelve, to show that there was a difficulty in diagnosis among men of the greatest skill in diagnosis. I am not referring to myself, but to Drs. Chadwick and Elliot, for whose opinion I have the highest respect.

Another case Dr. Swift will remember, in which he made the diagnosis of extra-uterine pregnancy, and where I was called to open the abdomen. The woman recovered fully without operation.

The twelfth case I saw in consultation with Dr. Berlin, who made a correct diagnosis and operated and removed a fœtus, which was shown to be a fœtus by the pathologists. The case made a good recovery.

In all the cases hæmorrhage and pain were the important symptoms. I think in none of the cases that recovered was there any question of the necessity of abdominal section. Whatever may be the question of diagnosis where you get the cases early, we all must admit that the majority of them come to the surgeon at the time when the damage has been done, and we have to face then the question of opening the abdomen. In the light of my experience with nine cases on which I have operated and all of which have recovered, I am strongly of the opinion that in all cases of pain with any sign of hæmorrhage it is our duty to go in immediately and find the cause.

Dr. Warren: I merely wish to show a specimen. It is a tumor of about two years' standing. The fœtus died at full term, and remained about three months in a semi-macerated condition in the pelvis. There were signs of pregnancy; but the diagnosis was very doubtful, and at the time I operated I was quite uncertain as to the nature of the tumor.

Dr. Worcester then reported a number of cases of extra-uterine pregnancy:

Dr. Elliot: I should like to ask the committee who looked up this subject what conclusion they came to on the subject of hæmatocele. Tait gives the idea that almost all hæmatoceles are extra-uterine pregnancies; and I suppose a great many of them are, but I have seen a number of tubes with blood in them and hæmatoceles which seemed to me were not really extra-uterine pregnancies.

Dr. Reynolds: I should like to say to Dr. Elliot that the opinion to be derived from literature, from the most recent literature, is just that which he has given us, and that each of the men whom I have found writing on that subject, has spoken just as Dr. Elliot did, in some scepticism of Mr. Tait's dictum that all hæmatoceles were the result of pregnancy, and his own personal belief that a good many of them were chronic tubal disease with hæmorrhage into them.

Dr. Elliot: I have seen this chronic tube disease with hæmorrhage into the tubes. When this has appeared, there has been discussion usually whether that was extra-uterine pregnancy or not. Personally I see a great many hæmatoceles, and almost all get well without operation. If those are extra-uterine pregnancies, they certainly act in an entirely different way from the other extra-uterine pregnancies which I see.

Dr. Reynolds: I think that the opinion of other men has differed a little from Dr. Elliot's, in that most of them have added that clinically the cases demanded operation for the same reason that they would if ectopic pregnancies ruptured into the broad ligament.

Dr. Homans: I remember one case which if it had not been for Dr. Fitz's careful examination of the tubes I should have thought was probably extra-uterine pregnancy, where I opened the abdomen and removed perhaps a pint or so of clotted blood, and then found both tubes in a state of ulceration in places, apparently. I sent them to Dr. Fitz, and he found no trace of decidua anywhere. I have had four cases of hæmatocele that I did not think were due to ruptured tubal pregnancy. I have had eight cases of hæmatocele, and four were extra-uterine pregnancy, and four not; only one of the four I am sure was not. The other cases were all operated on through the vagina. Two of them projected from the vulva; and all you had to do was to be antiseptic and open the thing, and they got well at once. I did not go into the abdomen, and so did not know.

Dr. Haven: The first case I reported to-night was certainly hæmorrhage into the tube, and discharged later into the uterus, I think.

Dr. Homans: I should like to say one word about the humping of the uterus. I had a case very like that of Dr. Elliot; and I thought it was either interstitial pregnancy, or pregnancy in the tube. She had so much pain and suffering I went to the hospital to operate, and got there just as the fœtus was coming out of the vagina. There was a distinct hump on the right-hand side of the uterus.

Dr. Worcester: How does Dr. Elliot distinguish between hæmatoceles not to be operated on, and possible tubal pregnancy?

Dr. Elliot: The hæmatoceles I have referred to as not operated on are limited collections of blood — limited by peritonitis, I suppose; walled off. You feel them as solid masses, and they almost always do well. They have had their fainting and collapse earlier and are comfortable, and these masses are there which are evidently blood; and they do well if you don't get them septic. The reason I object to operating is that it is so much work to keep them antiseptic. When they have no threatening symptoms I don't do anything. In one case in the country which I did not like to leave without making a positive diagnosis, I aspirated; and it got well fast without being laid open. I never have had a case of free blood in the peritoneal cavity. I have seen cases in consultation and advised operation; but the hæmatoceles I referred to are collections of blood walled off in the pelvis.

Dr. Reynolds: I think that brings up the point I was most anxious to see discussed, the question of diagnosis of ectopic pregnancy in the light of the question, Should this case be operated on at once or not? And I hope that that line will be followed up before we dismiss this subject. My own experience with the subject has been confined mainly to the exclusion of ectopic pregnancy. I have seen three cases which have been demonstrated to be ectopic pregnancy, one of which was of the class Dr. Elliot, Dr. Worcester and several others have spoken of, where the ovum came into the uterus, and I was able to put my finger into the uterus and feel the interstitial sac it came out of. One case I saw at the operation with Dr. Haven. One, Dr. Vickery reported, where the diagnosis seemed, at the first time I saw it, doubtful whether there was any tubal pregnancy; and the second time, a few days later, I thought there was; and she went to the Massachusetts General Hospital, and Dr. Richardson operated. I have several cases — I think five — where my connection with the case has been to see it, and say I did not think that there was interstitial pregnancy and recommend no operation. Now, the question of whether the conditions make ectopic pregnancy so probable that a case which would otherwise be subjected to a week or ten days or months of conservative treatment should be operated on at once, or whether it is one in which ectopic pregnancy can be so far ruled out that you are safe in waiting, is one I want more light on; and I hope other gentlemen will bring it up.

Dr. Elliot: I should like to say that one of Dr. Homans's cases is very remarkable; and that is the one where the placenta of a five or six months' extra-uterine pregnancy was adherent to the pelvic wall, and he packed it with gauze. I saw Schroeder do a case like that at full term, and I have since been very much interested in this class of cases. His case died; and I

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[1] See page 112 of the Journal.

believe the mortality in these cases is something like ninety per cent. Therefore, recovery of that kind of a case is very fortunate. The placenta grows so near the vessels that it is almost impossible to take it off and stop the hæmorrhage; and it is only since the use of gauze packing came in that it could be done at all successfully.

Dr. Homans: I have been taught that none of these extra-uterine pregnancies can grow unless the placenta grows from the mucous membrane. Am I wrong?

Dr. Whitney: I think there seem to be undoubted cases where it must grow from the serous surface. Those are just the class of cases that are wanted very much to fill in, as it were, the cases that are between. The very mature ripe cases, lithopædion, and the very earliest ones with little decidual formation, and perhaps hæmorrhage, we have; but where there has been a real placenta formed, and its relation to the peritoneum, those are the cases that are extremely rare. I can find no records of them that I should call very good ones.

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Recent Literature.

A Manual of Practical Obstetrics. By Edward P. Davis, A.M., M.D., Clinical Lecturer on Obstetrics in the Jefferson Medical College; Professor of Obstetrics in Philadelphia Polyclinic, etc. 12mo, pp. 298, with 140 illustrations, two of which are colored. Philadelphia: P. Blakiston, Son & Co. 1891.

This manual is intended for the use of students, and is based on the teachings of Parvin, Lusk, Schroeder, Winckel, Carl Braun, Galabin, and Dührssen. We confess to a feeling of disappointment in the perusal of the book. While some chapters are admirably written, in others the teaching is too vague and not sufficiently explicit and direct for a student's use. In a student's book we believe that important points should be clearly emphasized, and directions for treatment very explicit. In the chapters on operative work, especially, there is an absence of detail and specific direction, which makes the book seem inadequate to a student's needs. Too little is said about the practice of abdominal palpation for diagnostic purposes, and far too little on the management and mechanism of occipito-posterior positions.

Nor is the manual free from errors. On pages 62 and 63 it is said that "During the later weeks of pregnancy, the intermittent uterine contractions . . . aided by the elasticity of tissues previously distended will generally result in the descent of the presenting part into the cavity of the pelvis in multigravidæ. In prim*a*gravidæ [Why prim*a*gravidæ, unless also prim*a*paræ?] however, at the commencement of labor the head will probably be found at the brim of the pelvis, resting against the upper edge." The two cuts inserted to illustrate these statements correctly show the head within the pelvis in the primigravida, and resting on the girdle of contact at the pelvic brim in the multigravida; so that the author's error was doubtless inadvertent, but none the less perplexing to the student.

Again, on page 109, after correctly defining the first position of the breech as that in which the posterior surface of the sacrum lies opposite to the left ilio-pectineal eminence, the author states that in this position the bis-trochanteric diameter engages in the right oblique diameter of the pelvis; as the right oblique pelvic diameter extends from the right sacro-iliac articulation to the left ilio-pectineal eminence, the author's statement is clearly impossible.

The illustrations of the text, many of which are duly credited to Martin, are excellent; but the references to them are so indiscriminately inserted in the text as to confuse the author's meaning, and perplex the student. Taken as a whole, while the book contains much that is excellent, we cannot consider it a good student's manual.

The Nationalization of Health. By Havelock Ellis. Pp. 244. London: T. Fisher Union. 1892.

The author of this book shows himself to be a worthy disciple of Sir Edwin Chadwick, and while he follows the same line of exhortation with the worthy champion of Public Health, he has a pungent style of his own. The book will prove valuable to the general as well as to the medical reader.

While the volume deals chiefly with preventive medicine, such questions as the "Hospital of the Future," the administration of the "Metropolitan Hospitals," receive a share of attention. The following extract from the chapter on Typhoid Fever is worthy the attention of every citizen now using as a domestic water-supply the polluted water of the Lower Merrimac, where the typhoid death-rate for the past month of December is more than three times that of Boston. After briefly alluding to many typhoid epidemics, such as that of the Tees Valley, Vienna, Aimens, and other places, he says: "One of the very first essentials for the healthy life of any community, is an abundant supply of pure water; the assertion sounds like a truism, but it is, unfortunately, a truism which still needs a great deal of repetition. It is difficult to say what requirement of life comes before pure water; the most practically and humanly civilized of the great nations of old understood this, although their knowledge was empirical; the Romans and the Moors understood it. A race that has not yet understood this elementary truth has no true claim to be called civilized. One wonders what our descendants will think of nations which stuffed Regent Street and the Palais Royal with costly and idle luxuries, and drank contentedly the diluted and poisonous excrement of their diseased fellow-creatures."

Golden Rules of Surgical Practice. For the Use of Dressers. By E. Hurry Fenwick, F.R.C.S., Surgeon to and Lecturer on Clinical Surgery at the London Hospital; Surgeon to St. Peter's Hospital for Urinary Disease. Third edition, revised and enlarged. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Lim., and Hirschfeld Bros.

This little book is filled with practical points, and it is to be regretted that men of wide experience do not more often summarize the results of their work. The rules which are given are, many of them, axioms; and to the student and general practitioner we can recommend this diminutive book.

The prize for an essay on homœopathy, offered by Dr. George M. Gould, has been awarded to Dr. William W. Browning, of Brooklyn.

THE BOSTON

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THURSDAY, FEBRUARY 2, 1893.

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RELATIONSHIP OF PLEURISY TO TUBERCULOSIS.

THERE has been of late years a disposition to regard most cases of sero-fibrinous pleurisy as tuberculous. Germain Sée affirms that three-fourths of such pleurisies are tuberculous; with this, Bernutz, Landouzy, Leudet, Kelsch and Vaillard substantially agree. Other authorities, as Blachez, Widal, Dreyfus-Brisac take a less extreme view. They do not dispute that a certain number of pleuritic patients may become tuberculous, but these constitute a minority. They cite numerous instances of persons who have had a return of perfect health, with entire exemption for years from tuberculous troubles, after having recovered from an attack of pleurisy.

These differences of opinions can best be settled by an appeal to rigorous statistics which indicate the subsequent history of all patients treated for pleurisy. There have been four sets of observations of this kind published. We borrow from Netter's masterly review of the subject in the fourth volume of the new *Traité de Médécine.*

The first statistical inquiry, that of Fiedler, pertains to 92 pleuritic patients who were tapped by him at Dresden for a sero-fibrinous effusion. Seventeen of these patients died at the hospital of tuberculosis; eight succumbed to tuberculosis after they left the hospital; 66 left the hospital tuberculous (or suspected to be such) in the highest degree; 21 were in good health after one or two years.

These statistics indicate a proportion of 82 per cent. of pleurisies of tuberculous origin.

The statistics of Bars have to do with pleuritic patients treated at Leeds Infirmary from 1880 to 1884. In 1890 he was able to collect facts completing the history of 62. Of these 62, 32 had died: three at the hospital; one the next day after leaving the hospital; 28 subsequent to leaving, after an interval of six months to five years.

The first four deaths were from pulmonary tuberculosis. As for the causes of death in the other 28 cases, this was as follows:

Confirmed pulmonary phthisis	14
Probable pulmonary phthisis	1
Coxalgia	1
Tuberculous meningitis	1
Acute tuberculosis	1
Pleurisy	3
General dropsy	2
Hydro-pericardium	1
Cause unknown	8

Thus we see that out of 62 cases of pleurisy treated at the Infirmary of Leeds, 22 died during the six following years of some form of tuberculosis.

Ricochon, in thirteen years, treated in his private practice 21 cases of pleurisy (dry pleurisy, or sero-fibrinous pleurisy). These 21 cases all became tuberculous. Eleven had already succumbed to tuberculosis when he made his report, and ten presented certain signs (three, pulmonary tuberculosis; three, tuberculosis of the synovial membranes or tendinous sheaths; one, cold abscess; one tuberculous peritonitis; one was very probably tuberculous; one was not tuberculous, but had had tuberculous children). M. Ricochon's patients all lived in the country.

Bowditch's statistics, published in 1889, give the comparative results in 90 cases of pleurisy treated from 1849 to 1879, and whose subsequent history was traced.

In the first decennial period, 30 patients were treated: 11 were still living and well (one had a cough); two, history imperfectly known (one had been treated for tuberculosis); 12 had died of tuberculous manifestations; five had died of non-tuberculous lesions.

In the second decennial period there were 19 pleuritic patients: seven were living and well; nine had died tuberculous; eight had died of some other affection.

In the last period, there were 41 cases of pleurisy: 24 were living and well; one was living and manifestly tuberculous; nine had died of tuberculous disease; six had succumbed to other diseases.

The proportion of the tuberculous in the subjects of the first period was 43 per cent.; in those of the second period, 47 per cent.; in those of the third period, 24 per cent. It may be that the future history of the subjects of the last decennial will show a still larger proportion of tuberculous manifestations. In the subjects of the first period, four presented the first signs more than ten years after the pleurisy.

It will be seen from the above statistics that the proportion of pleurisies apparently of tuberculous origin is large; and probably future inquiries, if made to cover long periods of time, will show the proportion to be still larger.

The microscopical examinations and the culture tests, according to Netter, have given only negative results. Sero-fibrinous exudations which have been most manifestly linked to tuberculosis have never yet revealed to the microscope or to culture liquids Koch's bacillus. On the other hand, the inoculations of the pleuritic serosity in the peritoneum of guinea-pigs has furnished important data to establish the rôle of tuberculosis in the etiology of pleurisy. Many positive results have been obtained, proving beyond doubt the tuberculous character of the exudation. *Per contra*, a pleurisy manifestly tuberculous may give negative results after inoculation. Netter cites numerous instances in his own experimental investigations. Out of 12 pleurisies notably tuberculosis, seven only gave tuberculosis to the guinea-pig.

Of the inoculations practised with the exudate of fibrinous pleurisy (pleurisy in appearance, *primary*, essential, *a frigore*), there were eight positive results in twenty, or 40 per cent. From this the conclusion follows that 40 per cent. of sero-fibrinous, so-called primary, pleurisies, *at the very least*, are imputable to tuberculosis. Netter emphasizes the words *at least*, since pleurisies notably tuberculous give 41.6 per cent. of failures after inoculation.

One curious and unexpected fact results from these late inquiries. While tuberculosis is the most frequent cause of sero-fibrinous pleurisies, it is much less frequently the cause of purulent pleurisy.

These latter pleurisies have the past few years been much studied. The streptococcus pyogenes is the most common agent in their etiology, though the pneumococcus is a very frequent cause.

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THE CHOLERA BACILLUS IN THE DEAD BODY.

The Imperial Institute of Experimental Medicine at St. Petersburg publishes every two or three months an issue of its "Archives of the Biological Sciences" in the Russian and French languages. It is a very creditable scientific publication, the articles setting forth the result of original laboratory investigations.

In the last number of these Archives (No 4, Tome 1), a paper by M. Rekowski upon the examinations of bodies of cholera victims has special interest to hygienists, with reference to the proper disposal of such bodies.

The examination was undertaken in consequence of the difference of opinions expressed with reference to the presence of the cholera germs in such bodies. Great care was taken in obtaining specimens from different organs for the purpose of culture in Buchner's liquid.

The examinations were confined to 14 bodies, and from these more than 1,000 cultures were made. The general results are summed up in the following table :

	Examinations.	Bacteria in general.	Cholera bacteria.
Brain	14	5 times	3 times
Spinal fluid . . .	14	7 "	4 "
Heart	14	11 "	[illegible] "
Coagula in the heart .	11	7 "	4 "
Liver	14	13 "	7 "
Bile	14	14 "	11 "
Spleen	14	4 "	3 "
Kidneys . . .	14	13 "	7 "
[illegible]	12	5 "	1 "

The author claims, that, in consequence of the care taken, and the extremely short time elapsing between death and autopsy (in some cases one and a half or two hours only), it was impossible that micro-organisms should have been introduced from without. He believes that without the comma bacillus there is no cholera; moreover, that, in order to exercise its pathogenic action, it must find in the human organism a favorable soil for its development, and that the normal, healthy human body does not furnish a congenial soil.

Out of 39 persons who died of cholera, and were examined at the Hospital of St. Peter and St. Paul in 1892, mostly of the pauper class, the following results were found, as to the presence of other diseases :

	Cases.	Per cent.
Nephritis chronica interstitialis . . .	35	90
Dilatatio ventriculi	28	70
Sclerosis renum	18	45
Cirrhosis hepatis	16	40
Gastritis glandularis	15	37
Pleuritis adhesiva	8	20
Atheroma aortae et arteriarum cerebri .	7	17
Endocarditis vegetativa	4	10
Pachymeningitis	3	7.5

In 21 women where autopsies were made, abortion was found to have occurred seven times.

In summing up, this investigator concluded that insufficient nourishment, alcoholism, and, in addition, among females a faulty treatment of abortion and parturition, open the door of the human economy to the entrance of different micro-organisms, which by their simultaneous action increase the pathogenic action of the cholera bacillus.

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APPROPRIATIONS FOR THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE.

In the Sundry Civil Appropriation Bill, as reported by the Committee of Appropriations to the House of Representatives at Washington, D. C., the usual item for printing the next volume of the "Index Catalogue of the Library of the Surgeon-General's Office, U. S. A.," namely, $12,000, was omitted.

The usual appropriation for the purchase of books for the library has been reduced in the Army Appropriation Bill from $10,000 to $6,000.

Last year an even larger reduction of the appropriation for the purchase of books was made in committee, but the full amount, $10,000, which is little enough, was voted by Congress, as we cannot for a moment doubt it will be again this year.

The omission of the usual appropriation for the "Index Catalogue of the Library of the Surgeon-General's Office" from the Sundry Civil Appropriation, as reported, is a new exhibition of a fantastic economy as amazing to the professional citizen at home as are some of the enormous extravagances which are voted by the representatives in Washington apparently with a light heart.

As another specimen of "economy," we notice that some "statesmen" are trying to have the appropriation bill amended so that all the animals in our national zoölogical park, belonging to one of the best scientific branches of the government, must be sold, and the park shut up.

Sixteen thousand dollars can surely be spared from pensions, silver purchases, tariff subsidies in general, etc., for the library of the surgeon-general's office and its catalogue. We recommend our readers to ask this question of their representatives at Washington. It is not a question of politics, but of intelligent policy.

As we go to press we are telegraphed from Washington that the appropriation for printing the next volume of the Index Catalogue has been restored. Perhaps another year these modest but useful appropriations will escape the mistaken zeal of the "reformer."

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MEDICAL NOTES.

Physicians on the Frontier. — Certain Canadian physicians living near the Niagara Bridge have been in the habit of practising on the American side of the river; an effort has now been made to prevent their doing so unless they hold a license from the State of New York.

Tuberculous Milk. — At the annual meeting of the Farmer's Institute in Delaware a short time ago, the subject of the prevalence of tuberculosis in dairy herds was discussed by the members, representatives of the State boards of health of Delaware and Maryland, and by Drs. Pearson and Shakespeare of Philadelphia. Resolutions were passed advising some kind of inspection such as is now required in some of the Northern States.

New Periodicals. — With the first of the year, as usual, several new medical periodicals have made their appearance. The *R. I. Medical Science Monthly*, the first medical paper printed in Rhode Island, is published in Providence, under the editorial management of Dr. J. F. Haller. A monthly paper called *American Climates and Resorts* appears in Chicago. *The Indian Medico-Chirurgical Review*, a new monthly journal, a review of Indian and foreign medicine, is published in Tardeo, Bombay. The *Medical Week*, an edition in English of the well-known French journal *La Semaine Médicale*, appears in Paris. The large number of French weekly medical journals is added to by the appearance of *La Clinique Internationale*, also published in Paris. The *Universal Medical Journal* is the title of what was formerly the *Satellite* enlarged. It is published in connection with Sajous' "Annual of the Universal Medical Sciences." The first monthly issue of *Archivo Italiano di Otologia, Rinologia e Laringologia* appeared in January. It is published under the direction of Professors G. Gradenigo in Torino and E. de Rossi in Rome.

The Study of Cholera in Russia. — The Russian Minister of the Interior called together not long since a congress of physicians from the districts in which cholera had been virulent to consult upon measures to prevent the further spread of the epidemic. At the same time all statistics concerning the epidemic up to the present date were ordered to the central medical department.

The Medical Bulletin. — Under this heading a medical newspaper appeared for the first time on December 24th in Chicago. It is to be published every Saturday, and will contain only medical news, with perhaps a few abstracts from other journals. It will devote special attention to medical matters connected with the World's Fair. A list of all the physicians arriving in the city will be given. Physicians will be helped in finding lodging places, and rooms will be set aside which all physicians are invited to use, where information can be obtained and mail received.

"Lumpy Jaw." — The Chief of the Bureau of Animal Industry has reported to the Secretary of Agriculture the results of experiments and investigations made in Chicago in the treatment of cattle for actinomycosis. According to the report, iodide of potassium is of the greatest use in the treatment of this disease, about sixty-three per cent. of the cattle treated in this way having recovered. Twenty-one healthy cattle were confined in close quarters with diseased cattle for three months without showing any signs of infection. There has been for some time in different Western States much hard feeling between cattle owners and local cattle commissioners, the latter seizing and destroying cattle for "lumpy jaw" in a way considered to be entirely unjustifiable by the former. This report appears, therefore, as an argument in favor of the owners.

The Pathology of the Spinal Cord in Ataxia Incites to a Duel. — As an indication of the degree to which the Paris atmosphere is surcharged with the spirit of duelling, we notice that M. Dejerine, of the Paris Faculty, and his colleague, M. Pierre Marie, were rescued, apparently only by the mediation of sensible friends, from fighting a duel over the form and substance of a polemic upon the part played by the lesions of the posterior roots in the medullary sclerosis of ataxics. The *Progrès Médical* of January 7th published the protocols drawn up by the mutual intelligent friends, followed by the scientific reply of M. Dejerine to the scientific aspersions of M. Marie.

Requirements of the New Jersey Board of Medical Examiners. — Candidates applying for a license after the July, 1893, meeting of the State Board of Medical Examiners to practice medicine in New Jersey, will be examined in the following subjects arranged in sections: materia medica and therapeutics; obstetrics and gynecology; practice of medicine, including diseases of the skin, nose and throat; surgery, including surgical anatomy, and diseases of the eye, ear, and genito-urinary organs; anatomy; physiology; chemistry; histology, pathology and bacteriology; hygiene and medical jurisprudence. The following percentages will be required before a license will be issued: Candidates examined in the first class, that is, graduates of five years or more, shall obtain a total average of eighty per cent.; Candidates examined in the second class, that is, graduates of less than five years, shall obtain a total average of seventy-five per cent., — provided that in no one section shall the percentage be less than thirty-three and one-third per cent., in which case, however, should the total average percentage in all the other sections, be above seventy-five per cent., the candidates may be granted a second examination, immediately, upon that section; Candidates examined in the third class, that is, non-graduates who have taken three full courses of lectures in a reputable medical school, shall obtain a total average of eighty per cent., and candidates taking their preliminary or final examination, shall obtain a total average of eighty per cent., at each examination.

NEW ENGLAND.

Boston Home for Incurables. — By the will of Bishop Brooks, who died on January 23d, this institution receives a bequest of one thousand dollars.

The Massachusetts Association of Boards of Health held its annual meeting in Boston during the past week. A report on the inspection of cows and cow stables in Boston was presented by Dr. S. H. Durgin. A paper on "An Epidemic of Typhoid Fever due to Infected Milk," was read by Prof. W. T. Sedgwick. For the ensuing year Dr. H. P. Walcott was elected Chairman and Dr. L. F. Woodward Secretary.

Purification of the Providence Water-Supply. — The special committee appointed for the purpose, have recommended to the Providence City Government the construction of a system of mechanical gravity filters, capable of filtering 15,000,000 gallons of water a day. The cost of this proposed system will be about $130,000, which will include suitable buildings for carrying on the work.

NEW YORK.

Typhus Fever among Bellevue Hospital Nurses. — Another member of the Mills Training School for Male Nurses attached to Bellevue Hospital has been taken with typhus fever. The other nurse who was attacked by typhus January 5th, died on January 22d.

Police Station Lodging-Rooms. — Dr. Joseph D. Bryant, Medical Commissioner of the Board of Health, has made a report of his investigations of the lodging-rooms in police stations, in which he states that the rooms are overcrowded and rendered unhealthy by the character of the lodgers. He advises that as soon as practicable the rooms be placed under the same rules concerning ventilation and sanitation as are now exacted by the Health Department in ordinary lodging-houses.

Another Faster. — On January 24th Alexander Jacques, the professional faster, completed a fifty days' fast, which, it is claimed, exceeds by five days the longest previously accomplished. During the fifty days he lost 32¼ pounds, his weight at the beginning being 144½ pounds, and at the end, 112¼ pounds. During the last twenty-four hours 2¼ pounds was lost. One curious fact mentioned in connection with the fact is a gain of an inch and a quarter in height, and it is stated that a greater or less increase in height always occurs when he is fasting; the increase being gradually lost again after he begins to eat. During the fifty days' fast he took 88,749 grammes of ordinary Croton water, and 11,720 grammes of Vichy water, and 2,820 grammes of water impregnated with iron from rusting nails. He also smoked a large number of camphorated cigarettes, and took 107 pinches of a secret powder which he claims enables him to abstain from food. During the last three days he was feverish and sleepless, and his general condition was bad.

State Board of Charities. — The annual report of the State Board of Charities, just submitted to the Legislature, shows that during the year ending October 1, 1892, the total expenditures for charitable, correctional and reformatory purposes in the State amounted to $18,228,712, an increase of $623,052 over the previous year. The number of insane in the various asylums and hospitals was 76,807.

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Miscellany.

NEW YORK ACADEMY OF MEDICINE ON FEDERAL QUARANTINE.

The New York Academy of Medicine held an important meeting Tuesday evening January 31st, to listen to the report of its Special Committee on Quarantine appointed September 12th, and to discuss the question of Federal Control of Quarantine.

There seemed to be a very strong and unanimous feeling in favor of the establishment of a National Quarantine absolutely under the control of the Federal Government, and an equally strong and general disapproval of the National Quarantine Bill now before the United States Senate. Dr. R. H. Derby, as Secretary, read the report of the Special Committee, which concluded as follows:

> We wish again to express our conviction that no measure of quarantine supervision which does not include and unite without delay, under one responsible authority the forces which modern science has shown to be most efficient and least harmful in preventing the spread of infectious disease can at this juncture be regarded as satisfactory, safe or wise.
>
> Your committee, finally looking forward, with the gravest apprehensions to the advance of the Asiatic cholera to our shores in the season that is now [illegible] at hand, recommend the New York Academy of Medicine to memorialize Congress to give us the only relief that seems to us possible, namely, a national quarantine that is paramount to all others.
>
> The responsibility at this time that rests upon the medical profession of this great city [illegible]. The health of our citizens and of the inhabitants of our land is not and cannot be adequately protected by existing quarantine facilities. We urge the appointment by the Academy of a committee of its members with power to take such action as they may deem

necessary to secure such legislation as will most effectively protect this city and the country at large from the invasion of cholera.

A. Jacobi, M.D., *Chairman.*
Richard H. Derby, M.D., *Secretary.*
Stephen Smith, M.D., T. M. Prudden, M.D.,
E. G. Janeway, M.D., A. L. Loomis, M.D.,
A. McLane Hamilton, M.D.

On motion of Dr. Thomas the following resolutions were adopted:

Resolved, That the President of the New York Academy of Medicine is hereby directed to appoint a committee of twenty-one, composed of members of this body. to be known as the National Quarantine Committee of the New York Academy of Medicine.

Resolved, That it shall be the duty of this committee to go to Washington at as early a date as possible, and offer to the United States Senate a formal protest in the name of the Academy against the passage of the so-called National Quarantine Bill, now pending before that body.

And it shall be the further duty of the Committee to draft a National Quarantine Bill such as shall place the quarantine of this country unqualifiedly in the hands of the National Government, and which shall in their judgment meet the approval of the medical profession in all the States, and best protect the health of all the country.

The President, Dr. D. B. St. John Roosa, appointed the following committee of twenty-one, his own name being subsequently added:

Drs. Thomas, A. Jacobi, Stephen Smith, T. M. Prudden, Janeway, R. H. Derby, L. A. Sayre, C. C. Lee, Lawrence Johnson, A. H. Smith, Daniel Lewis, C. L. Dana, J. H. Girdner, W. T. Lusk, C. C. Rice, T. M. Markoe, M. Allen Starr, S. B. Ward, C. McBurney, David Webster and E. B. Bronson.

The Secretary was notified to send copies of the committee's report to all the leading medical societies of the country, and to request their co-operation with the Academy of Medicine in efforts to secure a national quarantine.

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LIFE IN THE GARDEN OF EDEN.

At his inaugural address before the Medical Society of Edinburgh, Dr. Lauder Brunton discourses on the correlation of structure, action and thought, illustrating his remarks very largely by the story of the Garden of Eden. With the help of two of Raphael's pictures on the "Fall of Man," he shows how simple and natural the actions of Adam and Eve were as compared with the more intricate problems which the human body of the present day has to undertake. One day Eve went into the garden, saw an apple on the tree, plucked it, ate it, and then went to get another for Adam. In analyzing the muscles and nerves occupied in this simple proceeding it would be seen how beautifully adapted the human body is for just such purposes. Even the motor areas of the brain, as localized by Ferrier, are arranged in the very order required for looking at the apple, stretching out the hand to take it, and bringing it to the mouth, separating the seeds and throwing them away. Going still further, the centres for the movement of the leg necessary to getting another apple for Adam complete the circle of action. Even the spinal nerves appear to be arranged with the same object in view. It would seem that the fall from grace had already been premised in the human structure, since the action of the seventh cervical nerve brings the hand over the pubes, in the way represented by Raphael as done by Eve after she finds that she is naked. But after the expulsion from Eden the simplicity of movement is lost which was possible only in the simple life in the garden.

ATTENUATION OF THE VIRUS OF SYPHILIS.

Acting on the same principle which explains the treatment of pneumonia by the injection of serum from a convalescent case, Pellizarri[1] has applied a similar procedure to syphilis. The specific organism may be supposed to create a chemical substance inimical to its own growth which exists in the blood of a patient who has had syphilis for some time. He at first injected subcutaneously serum obtained from a patient in the tertiary stage into a recent case which showed intolerance of mercury. He has since used this method in several cases, beginning as soon as possible. He does not as yet claim very definite results, but believes that there is a diminution of glandular enlargement and a shortened eruptive stage. The injections were given every two or three days.

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THERAPEUTIC NOTES.

Some of the Therapeutic Work of the Past Year.[2]— Arsenite of copper in anæmia, the use of atropine as a hæmostatic, and the value of camphorated oil in cases of collapse, have received attention. The administration of oxygen in various acute respiratory affections led to numerous communications; it was employed together with strychnine in pneumonia, alone in a severe case of broncho-pneumonia following influenza, and it was also recommended in asthma and in convalescence — massage, electricity, and oxygen being regarded as substitutes for change, exercise, and sea-air. Rectal antiseptic injections in epidemic influenza, and in advanced phthisis with large cavities, have once more received commendation. Phthisis has also been treated with creosote, guaiacol, camphoric acid, and cantharidinates, but increased experience with the last-named has given rise to some anxiety owing to the frequency of consecutive albuminuria. In the treatment of vomiting, hydrochloric acid and strontium bromide have been recommended; chlorobrom has been used for sea-sickness and solanine for painful disorders of the stomach; orexin hydrochlorate has somewhat gained in favor as a stomachic and aid to digestion; salicylate of bismuth has been used in infantile diarrhœa, and lactic acid in many other forms of diarrhœa, having given good results even in phthisis. Much has been written of the value of glycerine in the treatment of hepatic colic, for which, when due to gall-stones, large doses of olive-oil have also been recommended. Thymol has been vaunted as an anthelmintic, but its range of application appears to be very restricted.

Alumnol,[3] is a fine white powder, soluble in cold water, alcohol and glycerine. It is chemically a combination of an aluminium salt with naphthol sulphate. It precipitates albumin, but it differs from other astringents in that the resulting deposit is rapidly dissolved again in an excess of albumin. This property enables alumnol to penetrate into the tissues. It dissolves in purulent secretions, and can therefore be readily used in secreting sinuses and cavities. The antiseptic action and the astringent effect of the substance are very marked. In surgical practice the strong astringent action is useful in suppurating surfaces and secreting cavities, the use of a lotion of one-half to two per cent. as a solution having the best results. In small abscesses and sinuses, cauterization with a ten to twenty per cent. solution leads to rapid cleaning of the parts. Where there is ulceration with flabby granulations, as in chronic ulcers of the leg, a lotion or ointment of three to six per cent. acts well. According to Heinz and Liebrecht, who have introduced it, excellent results having been obtained in gynecology, skin diseases, gonorrhœa (where in a watery solution of one to two per cent. it is almost a specific), suppuration in the ear, and in ophthalmic practice where it is used for its astringent properties.

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[1] Giorn. Ital. del. Mal. Ven. e del. Pel., September.
[2] Lancet.
[3] Berlin. klin. Woch., No. 46, 1892.

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Correspondence.

INSTRUCTION IN GYMNASTICS. A REPLY.

Lawrence Scientific School,
Cambridge, Mass., January 30, 1893.

Mr. Editor: — I should like to enter a protest against your editorial on "The Instruction of Teachers of Gymnastics" in the Journal of January 19th. I fear the impression received by your readers is, that after a careful comparative study of the various schools for the training of teachers of gymnastics, you have reached the conclusion that the Boston Normal School of Gymnastics is the leading school in America.

While the Boston Normal School of Gymnastics is undoubtedly an excellent school for the teaching of Swedish Gymnastics, is it fair to give the impression that it is the best school for the training of teachers of gymnastics in the larger sense? Are you prepared to state authoritatively that the Swedish system stands nearer the ideal system of gymnastics than any other? Has the Swedish System established its right to claim "distinctive principles," except by pure assumption and arguments based on outgrown or fantastic physiology?

In the interests of scientific physical training and true physiology, let physicians reserve their judgment till the Swedes can support their curious statements by adequate experimental investigation. G. W. Fitz, M.D.,
Instructor in Physiology and Hygiene, Harvard University.

[We publish the above letter as we always desire to give a fair hearing for serious comments on any subject treated of in the pages of the Journal, but we fear that the writer's fears have run-away with him. We are not prepared to state what "impression has been received" by the readers of the editorial referred to. Our statement was, "that the Boston Normal School of Gymnastics deserves its reputation as the leading school of *its class* in America," — a statement which was based on the results of its work, and which we see no occasion to alter. We did not praise it because Swedish gymnastics are practised there, nor did we even imply that the good results were especially attributable to the Swedish gymnastics, as such. Daily practice in gymnastic exercises in the school gymnasium is required of all students; but the general management, the didactic instruction, the training in the use of the voice, the library, the appliances for demonstrative purposes and for anthropometrical measurements, all go to give the school the character and reputation which we commend. The school was started with a view to the good it might do, and without thought of the money which it might earn. That has been the plan pursued in its development. That Ling's ideas of physiology were fantastical is not a discovery of Dr. Fitz's, but the physiology taught to-day at the Central Institute in Stockholm is unexceptionable. Any accurate observations on the results of physiology as applied to gymnastics will be a welcome addition to the subject. We shall be ready to praise any good work done in the future in the field of pedagogical gymnastics, whether proceeding from the new course established at the Lawrence Scientific School of Harvard University or from any other source. — Ed.]

METEOROLOGICAL RECORD.

For the week ending January [illegible] in Boston, [illegible] observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. [illegible]	[illegible]	[illegible]	Direction of wind. [illegible]	[illegible]	Velocity of wind. [illegible]	[illegible]	Weather. [illegible]	[illegible]	[illegible]
S...15	[illegible]	14	18	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	10	[illegible]	[illegible]	[illegible]	[illegible]
M..16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T..17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	N.W.	[illegible]	[illegible]	[illegible]	[illegible]	
W..18	[illegible]	12	18	[illegible]	[illegible]	[illegible]	[illegible]	N.	N.W.	[illegible]	[illegible]	[illegible]	[illegible]	
T..19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.	[illegible]	[illegible]	[illegible]	[illegible]	
F..20	[illegible]	[illegible]	[illegible]	11	[illegible]	[illegible]	[illegible]	N.W.	W.	[illegible]	[illegible]	[illegible]	[illegible]	
S..21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	14	[illegible]	7	[illegible]	[illegible]	7							[illegible]

[illegible]

RECORD OF MORTALITY

For the Week ending Saturday, January 21, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.08	2.04
Chicago	1,250,000	[illegible]	[illegible]	18.62	26.79	2.47	8.55	[illegible]
Philadelphia	[illegible]	[illegible]	[illegible]	13.80	21.31	[illegible]	7.51	2.44
Brooklyn	955,333	[illegible]	[illegible]	16.08	25.20	.98	5.76	3.36
St. Louis	[illegible]	[illegible]	[illegible]	—		—	—	—
Boston	[illegible]	[illegible]	49	[illegible]	[illegible]	.86	3.44	2.15
Baltimore	[illegible]							
Cincinnati	[illegible]	131	[illegible]	4.56	29.64	[illegible]	.76	
Cleveland	[illegible]	91	[illegible]	14.30	20.90	[illegible]	[illegible]	2.20
Pittsburg	[illegible]	[illegible]	[illegible]	18.69	16.98	1.78	8.01	5.34
Milwaukee	[illegible]	77	[illegible]	[illegible]	[illegible]	[illegible]	5.16	
Washington	[illegible]	[illegible]	[illegible]	9.02	22.14	.82	2.46	.82
Nashville	87,754	—	—				—	—
Charleston	[illegible]	27	[illegible]	11.11	3.70	3.70	—	—
Portland	[illegible]	10	1		[illegible]	—		—
Worcester	92,313	[illegible]	11	[illegible]	[illegible]			
Lowell	[illegible]	41	10	[illegible]	[illegible]	7.32	4.88	
Fall River	[illegible]	41	19		[illegible]	—		[illegible]
Cambridge	[illegible]	[illegible]	10	14.80	7.40	—	7.40	7.40
Lynn	[illegible]	21	5	[illegible]	[illegible]	—		4.76
Springfield	[illegible]	24	4	12.48	16.66			12.48
Lawrence	45,910	—	—		—			
New Bedford	[illegible]	19	[illegible]		[illegible]	[illegible]	—	
Holyoke	40,099	[illegible]	11	27.77	16.66		16.66	11.11
Brockton	32,783	[illegible]	[illegible]	[illegible]		[illegible]		
Salem	31,495	14	1	[illegible]	[illegible]	7.14	—	—
Haverhill	30,065	12	3	—	16.66	—	—	—
Chelsea	[illegible]	16	[illegible]	—	[illegible]	—	—	—
Malden	27,252	[illegible]	[illegible]	[illegible]	[illegible]	7.69	—	—
Newton	26,498	[illegible]	3	22.22	22.22	—	22.22	—
Taunton	[illegible]	—	—			—		—
Gloucester	26,008	1	[illegible]				—	
Fitchburg	25,444	[illegible]	3	11.11	11.11	—		—
Waltham	[illegible]	[illegible]						—
Quincy	18,669	2	1					
Pittsfield	18,294	—				—	—	—
Northampton	[illegible]	—		—	—	—	—	—
Everett	[illegible]		—	—	—	—	—	—
Newburyport	14,031	10	—	—	—	10.00	—	—
Amesbury	13,561	—	—	—	—	—	—	—

Deaths reported [illegible] infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 488, [illegible] 209, scarlet fever 81, typhoid fever 48, diarrhœal diseases 41, measles 31, whooping-cough 24, erysipelas 19, cerebro-spinal meningitis 14, typhus fever 11, malarial fever 9, small-pox 1.

[illegible] and Salem 1 each. From measles Chicago 14, New York 9, Philadelphia 4, Brooklyn 2, Lowell and Brockton 1 each. From whooping-cough 12, Chicago and Brooklyn 4 each, Philadelphia, Boston, Worcester and Fitchburg 1 each. From rysipelas Brooklyn 7, New York 4, [illegible]

Charleston and Worcester 1 each. From cerebro-spinal meningitis New York 6, Chicago 4, Washington 3, Somerville 1. From typhus fever New York 11. From malarial fever Brooklyn 7, New York and Charleston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending January 14th, the death-rate was 28.3. Deaths reported 5,604: acute diseases of the respiratory organs (London) 984, measles 122, whooping-cough 91, diphtheria 89, scarlet fever 59, fever 33, diarrhœa [illegible], small-pox (Leicester, Manchester and Oldham 2 each, Bolton, Halifax and Bradford 1 each) 9.

The death-rates ranged from 19.5 in Oldham to 36.0 in Bolton; Birmingham 29.7, Bradford 22.8, Bristol 27.8, Croydon 28.7, Hull 24.0, Leeds 30.4, Leicester 27.8, Liverpool 31.5 London 30.3, Manchester [illegible], Newcastle-on-Tyne 20.6, Nottingham 23.4 Sheffield 22.0, Sunderland 22.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 21, 1893, TO JANUARY 27, 1893.

Leave of absence for four months, on surgeon's certificate of disability is granted CAPTAIN FREEMAN V. WALKER, assistant surgeon, U. S. A., on condition that he spend the period of leave as a patient in the Army and Navy General Hospital, Hot Springs, Ark.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 28, 1893.

W. F. ARNOLD, passed assistant surgeon, detached from U. S. Training-ship "Richmond" and granted three weeks' leave of absence.

PAN-AMERICAN MEDICAL CONGRESS.

SECTION ON DISEASES OF THE MIND AND NERVOUS SYSTEM.

Every effort is being made to make the meetings of the Section on Diseases of the Mind and Nervous System both scientifically profitable and socially pleasant. Papers of distinguished merit from neurological students and physicians eminent in psychiatry have been promised.

Every physician on this Continent of America, North or South, is hereby cordially solicited and welcomed to join in the meetings of this important Section of the approaching Pan-American Medical Congress, and it is hoped by unity of effort and cordial co-operation to make the Section of Nervous and Mental Diseases second to none in the Congress in fruitful results to Pan-American psychiatry.

Fraternally, C. H. HUGHES, St. Louis, Mo.,
Executive President of the Section.

AMERICAN SURGICAL ASSOCIATION.

PRELIMINARY PROGRAMME FOR THE MEETING TO BE HELD AT BUFFALO, N. Y., MAY 30, 31, AND JUNE 1, 1893.

The following is a list of the subjects which have been selected for special consideration at the next meeting, with the names of the Fellows who have promised to prepare the opening papers upon the several subjects, and of those who are expected to open and take part in the discussions:

President's Address.

(1) "The Modern Treatment of Compound Fractures." By Dr. Nicholas Senn, Chicago. Discussion by Drs. Roswell Park and F. S. Dennis.

(2) "Hypertrophies and Degenerations of Cicatrices and Cicatricial Tissue." By Dr. J. Collins Warren, Boston. Discussion by Drs C. H. Mastin, G. R. Fowler and W. H. Carmalt.

(3) "Surgery of the Gall-bladder." By Dr. M. H. Richardson, Boston. Discussion by Drs. J. Ewing Mears, A. Vander Veer, W. H. Carmalt and Theo. A. McGraw.

(4) "Surgery of the Rectum." By Dr. A. G. Gerster, New York. Discussion by Drs. L. S. Pilcher, H. H. Mudd and L. McLane Tiffany.

(5) "Surgical Treatment of Cervical, Thoracic and Abdominal Aneurism." By Dr. C. B. Nancrede, Ann Arbor. Discussion by

(6) "Surgery of the Prostate." By Dr. J. William White, Philadelphia. Discussion by Drs. Hunter McGuire, T. F. Prewitt, R. F. Weir and F. H. Gerrish.

(7) "Treatment of Carbuncle." By Dr. F. Lange, New York. Discussion by Drs. Robert Abbe, J. B. Roberts and J. S. Wight.

In addition to the above specially selected subjects, the following paper has been offered: "Unreduced Dislocations of the Astragalus," by Dr. Stephen Smith, New York.

Fellows who propose to present volunteer papers are requested to send to either of the undersigned the titles of their proposed papers as soon as possible, in order that they may be properly classified and arranged for the final programme.

Fellows are also requested to notify the Chairman of the Committee whether they will take part in the discussion upon any of the special subjects given in the above list

NICHOLAS SENN, *President.*
J. R. WEIST, *Secretary.*
J. EWING MEARS, *Recorder.*
F. S. DENNIS,
JOHN S. BILLINGS,
Business Committee.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held at 19 Boylston Place, on Monday, February 6, 1893, at 8 o'clock.

Readers: Dr. A. T. Cabot: "A Case of Calculous Pyelitis with Suppression of Urine for Seven Days; Operation; Recovery."

Dr. C. F. Carter: "Obstetric Paralysis with Especial Reference to the Pathology and Etiology."

Discussion by Drs. W. L. Richardson, J. J. Putnam, C. M. Green, G. L. Walton, R. W. Lovett and C. R. Burr.

JOHN C. MUNRO, M.D., *Secretary.*

APPOINTMENT.

DR. DAVID W. CHEEVER, Professor of Surgery in Harvard Medical School, has been elected a foreign associate member of the Society of Surgery, of Paris.

RECENT DEATHS.

HENRY W. BUEL, M.D., of Litchfield, Conn., died January 30th, aged seventy-two years. He graduated from Yale College in 1844, and from the College of Physicians and Surgeons, New York, in 1847. In 1858 he established at Spring Hill a home for nervous invalids. He later served as president of the Connecticut Medical Society.

RICHARD L. HODGDON, M.D., M.M.S.S., Chairman of the Massachusetts Board of Lunacy and Charity, died in Arlington, January 30th, aged sixty-eight years. He graduated from Bowdoin College in 1845, and from the Jefferson Medical College in 1852. He was a member of the American Academy of Medicine and of several medical societies in Boston and vicinity.

JAMES H. WHEELER, M.D., of Dover, N. H., died January 26th, aged sixty-one years. He graduated from the College of Physicians and Surgeons, New York, in 1862, and has been president of the New Hampshire Medical Society, and for several years pension examiner.

BOOKS AND PAMPHLETS RECEIVED.

The Nervous Affections that may Arise from Malaria. By William Browning, M.D. Reprint. 1893.

Annual Report of the Commissioner of Patents for the Year 1891. Washington: Government Printing Office.

The Chronic Disorders of the Digestive Tube. By W. W. Van Valzah, M.D. New York: J. H. Vail & Co. 1893.

Fourteenth Annual Report of the State Board of Lunacy and Charity of Massachusetts. Public Document No. 17. January, 1893.

Syringomyelia. Clinical Lecture Delivered at the Arapahoe County Hospital, Denver, Col. By J. T. Eskridge, M.D. Reprint.

Some Physiological Experiments with Magnets at the Edison Laboratory. By Frederick Peterson, M.D., and A. E. Kennelly. Reprint. 1892.

A Practical Guide for Beginners to the Dissection of the Human Body. By Irving S. Haynes, Ph.B., M.D., Demonstrator of Anatomy, University of the City of New York. New York: E. B. Treat. 1893.

Mineral Springs and Health Resorts of California, with a complete analysis of every important mineral water in the world. By Winslow Anderson, M.D., M.R.C.P., M.R.C.S. San Francisco: The Bancroft Co. 1892.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M.D., F.R.C.P., and G. A. Wright, M.B., F.R.C.S. Second edition. Edited for American Students by William Perry Northrup, M.D. New York and London: Longmans, Green & Co. 1893.

Address.

PHYSIC AND PHYSICIANS AS DEPICTED IN PLATO.[1]

BY WM. OSLER, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore, Md.

Our Historical Club had under consideration last winter the subject of Greek Medicine. After introductory remarks and a description of the Æsculapian temples and worship by Dr. Welch, we proceeded to a systematic study of the Hippocratic writings, taking up in order, as found in them, medicine, hygiene, surgery, and gynæcology. Among much of interest which we gleaned, not the least important was the knowledge that as an art, medicine had made, even before Hippocrates, great progress, as much almost as was possible without a basis in the sciences of anatomy and physiology. Minds inquisitive, acute, and independent had been studying the problems of nature and of man; and several among the pre-Socratic philosophers had been distinguished physicians, notably, Pythagoras, Empedocles, and Democritus. Unfortunately we know but little of their views, or even the subjects in medicine on which they wrote. In the case of Democritus, however, Diogenes Lærtius has preserved a list of his medical writings, which intensifies the regret at the loss of the works of this great man, the title of one of whose essays, "On Those who are Attacked with Cough after Illness" indicates a critical observation of disease, which Daremberg seems unwilling to allow to the pre-Hippocratic philosopher-physicians.

We gathered also that in the golden age of Greece, medicine had, as to-day, a triple relationship, with science, with gymnastics, and with theology. We can imagine an Athenian father of the middle of the fourth century worried about the enfeebled health of one of his growing lads, asking the advice of Hippocrates about a suspicious cough, or sending him to the palæstra of Taureas for a systematic course in gymnastics; or, as Socrates advised, "when human skill was exhausted" asking the assistance of the divine Apollo, through his son, the "hero-physician," Æsculapius, at his temple in Epidaurus or at Athens itself. Could the Greek live over his parental troubles at the end of the nineteenth century he would get a more exact diagnosis and a more rational treatment; he might travel far to find so eminent a "professor" of gymnastics as Miccus for his boy, and in Christian science or faith-healing he would find our bastard substitute for the stately and gracious worship of the Æsculapian temple.[2]

From the Hippocratic writings alone we have a very imperfect knowledge of the state of medicine in the most brilliant period of Grecian history; and many details relating to the character and to the life of physicians are gleaned only from secular authors. So much of the daily life of a civilized community relates to problems of health and disease that the great writers of every age of necessity throw an important side-light, not only on the opinions of the people on these questions, but often on the condition of special knowledge in various branches. Thus, as Dr. Billings has just told us, a considerable literature already illustrates the medical knowledge of Shakespeare, from whose doctors, apothecaries, and mad-folk much may be gathered as to the state of the profession in the latter part of the sixteenth century. So also the satire of Molière, malicious though it be, has preserved for us phases of medical life in the seventeenth century, for which we scan in vain the strictly medical writings of that period; and writers of our own times, like George Eliot, have told for future generations in a character such as Lydgate, the little every-day details of the struggles and aspirations of the profession of this century, of which we find no account whatever in the files of the *Lancet*.

We are fortunate in having had preserved the writings of the two most famous of the Greek philosophers. The great idealist, Plato, whose "contemplation of all time and all existence" was more searching than his predecessors, fuller than any of his disciples; and the great realist, Aristotle, to whose memory every department of knowledge still pays homage, and who has swayed the master-minds of twenty-two centuries. From the writings of both much may be gathered about Greek physic and physicians; and I propose this evening to give you what I have culled from the "Dialogues of Plato." I shall first speak of his physiological and pathological speculations; then I shall refer to the many interesting allusions to, and analogies drawn from, medicine and physicians; and, lastly, I shall try to estimate from the "Dialogues" the social standing of the Greek doctor, and shall speak on other points which bear upon the general condition of the profession. The quotations are made in every instance from Professor Jowett's translation, either the first edition, 1871, or the third, 1892.[3]

I.

To our enlightened minds the anatomy and physiology of Plato are crude and imperfect; as much or even more so than those of Hippocrates. He conceived the elements to be made up of bodies in the form of triangles, the different varieties and combinations of which accounted for the existence of four elementary bodies of Empedocles — fire, earth, water, and air. The differences in the elementary bodies are due to differences in the size and arrangement of the elementary triangles, which, like the atoms of the atomist, are too small to be visible. Marrow had the most perfect of the elementary triangles, and from it bone, flesh, and the other structures of the body were made. "God took such of the primary triangles as were straight and smooth, and were adapted by their perfection to produce fire and water, and air and earth; these, I say, he separated from their kinds, and mingling them in due proportions with one another, made the marrow out of them to be a universal seed of the whole race of mankind; and in this seed he then planted and enclosed the souls, and in the original distribution gave to the marrow as many and various forms as the different kinds of souls were hereafter to receive. That which, like a field, was to receive the divine seed, he made round every way, and called that portion of the marrow, brain, intending that, when an animal was perfected, the vessel containing this substance should be the head; but that which was intended to contain the remaining and mortal part of the soul he distributed into figures at once round and elongated, and he called them all by the name 'marrow'; and to these, as to anchors, fastening the bonds of the whole soul, he proceeded to fashion around them the entire framework of our body, constructing for the marrow, first of all, a complete covering of bone." [4]

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[1] Read at the Johns Hopkins Hospital Historical Club, December [illegible]

[2] For an account of "Æsculapius at Epidaurus and Athens" see [illegible] (MacMillan, [illegible]), a chapter which con[illegible] [illegible] Chapter III of Pater's beautiful story, "Marius the Epicurean," is a description of one of the Roman Æsculapia, and an [illegible] of the method of procedure at the "cure," the ridiculous aspects of which are so graphically described in the "Plutus" of Aristophanes.

[3] The Dialogues of Plato, translated into English by B. Jowett, M.A., Master of Balliol College, Oxford. At the Clarendon press; first edition, 1871; third edition, 1892.

The account of the structure of bone and flesh, and of functions of respiration, digestion, and circulation is unintelligible to our modern notions. Plato knew that the blood was in constant motion; in speaking of inspiration and expiration, and the network of fire which interpenetrates the body, he says: "For when the respiration is going in and out, and the fire, which is fast bound within, follows it, and ever and anon moving to and fro enters the belly and reaches the meat and drink, it dissolves them, and dividing them into small portions, and guiding them through the passages where it goes, pumps them as from a fountain into the channels of the veins, *and makes the stream of the veins flow through the body as through a conduit*." A complete circulation was unknown; but Plato understood fully that the blood was the source of nourishment, — "the liquid itself we call blood, which nourishes the flesh and the whole body, whence all parts are watered and empty spaces filled." In the young, the triangles, or in modern parlance we would say the atoms, are new, and are compared to the keel of a vessel just off the stocks. They are locked firmly together, but form a soft and delicate mass freshly made of marrow and nourished on milk. The process of digestion is described as a struggle between the triangles out of which the meats and drinks are composed, and those of the bodily frame; and as the former are older and weaker the newer triangles of the body cut them up, and in this way the animal grows great, being nourished by a multitude of similar particles. The triangles are in constant fluctuation and change, and in the "Symposium" Socrates makes Diotima say, "A man is called the same, and yet in the short interval which elapses between youth and age, and in which every animal is said to have life and identity, he is undergoing a perpetual process of loss and reparation — hair, flesh, bones, and the whole body are always changing."

The description of senility, euthanasia, and death is worth quoting: "But when the roots of the triangles are loosened by having undergone many conflicts with many things in the course of time, they are no longer able to cut or assimilate the food which enters, but are themselves easily divided by the bodies which come in from without. In this way every animal is overcome and decays, and this affection is called old age. And at last, when the bonds by which the triangles of the marrow are united no longer hold, and are parted by the strain of existence, they in turn loosen the bonds of the soul, and she, obtaining a natural release, flies away with joy. For that which takes place according to nature is pleasant, but that which is contrary to nature is painful. And thus death, if caused by disease or produced by wounds, is painful and violent; but that sort of death which comes with old age and fulfils the debt of nature is the easiest of deaths, and is accompanied with pleasure rather than with pain."

The mode of origin and the nature of disease, as described in the "Timæus," are in keeping with this primitive and imperfect science. The diseases of the body arise when any one of the four elements is out of place, or when the blood, sinews and flesh are produced in a wrong order. Much influence is attributed to the various kinds of bile. The worst of all diseases, he thinks, are those of the spinal marrow, in which the whole course of the body is reversed. Other diseases are produced by disorders of respiration; as by phlegm "when detained within by reason of the air bubbles." This, if mingled with black bile and dispersed about the courses of the head produces epilepsy, attacks of which during sleep, he says, are not so severe, but when it assails those who are awake it is hard to be got rid of, and "being an affection of a sacred part, is most justly called sacred (*morbus sacer*)." Of other disorders, excess of fire causes a continuous fever; of air, quotidian fever; of water, which is a more sluggish element than either fire or air, tertian fever; of earth, the most sluggish element of the four, is only purged away in a four-fold period, that is in a quartan fever.

The psychology of Plato, in contrast to his anatomy and physiology has a strangely modern savor, and the three-fold division of the mind into reason, spirit and appetite, represents very much the mental types recognized by students of the present day. The rational, immortal principle of the soul "the golden cord of reason" dwells in the brain, "and inasmuch as we are a plant not of earthly but of heavenly growth, raises us from earth to our kindred who are in heaven." The mortal soul consists of two parts; the one with which man "loves and hungers and thirsts, and feels the flutterings of any other desire" is placed between the midriff and the boundary of the navel; the other, passion or spirit, is situated in the breast between the midriff and the neck, "in order that it might be under the rule of reason and might join with it in controlling and restraining the desires when they are no longer willing of their own accord to obey the word of command issuing from the citadel."

No more graphic picture of the struggle between the rational and appetitive parts of the soul has ever been given than in the comparison of man to a charioteer driving a pair of winged horses, one of which is noble and of noble breed; the other ignoble and of ignoble breed, so that "the driving of them of necessity gives a great deal of trouble to him."

The comparison of the mind of man to a block of wax, "which is of different sizes in different men; harder, moister and having more or less of purity in one than another, and in some of an intermediate quality," is one of the happiest of Plato's conceptions. This wax tablet is a gift of Memory, the mother of the Muses; "and when we wish to remember anything which we have seen, or heard or thought in our own minds, we hold the wax to the perceptions and thoughts, and in that material receive the impression of them as from the seal of a ring; and that we remember and know what is imprinted as long as the image lasts; but when the image is effaced, or cannot be taken, then we forget and do not know." [5]

Another especially fortunate comparison is that of the mind to an aviary which is gradually occupied by different kinds of birds, which correspond to the varieties of knowledge. When we were children the aviary was empty, and as we grow up we go about 'catching' the various kinds of knowledge.

Plato recognized, in the "Timæus" two kinds of mental disease, to wit, madness and ignorance. He has the notion advocated by advanced psychologists to-day, that much of the prevalent vice is due to an ill disposition of the body, and is involuntary; "for no man is voluntarily bad; but the bad become bad by reason of ill disposition of the body and bad education, things which are hateful to every man, and happen to him against his will." A fuller discussion of the theorem that madness and the want of sense are the same is found in the "Alcibiades." (II) The different kinds of want of sense are very graphically described:

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[4] Timæus.

[5] Theætetus.

> Socrates. In like manner men differ in regard to want of sense. Those who are most out of their wits we call "madmen," while we term those who are less far gone "stupid" or "idiotic," or if we prefer gentle language, describe them as "romantic" or "simple-minded," or again as "innocent," or "inexperienced," or "foolish." You may even find other names if you seek for them, but by all of them lack of sense is intended. They only differ as one art appears to us to differ from another, or one disease from another.

There is a shrewd remark in the "Republic" (VI, 491), "that the most gifted minds, when they are ill-educated, become pre-eminently bad. Do not great crimes and the spirit of pure evil spring out of a fulness of nature ruined by education rather than from any inferiority, whereas weak natures are scarcely capable of any very great good or very great evil."

In the "Phædrus" there is recognized a form of madness which is a divine gift and a source of the chiefest blessings granted to man. Of this there are four kinds — prophecy, inspiration, poetry, and love. That indefinable something which makes the poet as contrasted with the rhymster and which is above and beyond all art, is well characterized in the following sentence: "But he who, having no touch of the Muse's madness in his soul, comes to the door and thinks that he will get into the temple by the help of art — he, I say, and his poetry are admitted. The sane man disappears and is nowhere when he enters into rivalry with a madman."[6] Certain crimes, too, are definitely recognized as manifestations of insanity; in the "Laws" the incurable criminal is thus addressed: "Oh, sir, the impulse which moves you to rob temples is not an ordinary human malady, nor yet the visitation of Heaven, but a madness which is begotten in man from ancient and unexpiated crimes of his race." In the "Laws," too, it is stated that there are many sorts of madness, some arising out of disease, and others originating in an evil and passionate temperament, and are increased by bad education. Respecting the care of the insane it is stated that a madman shall not be at large in the city, but his relations shall keep him at home in any way they can, or if not, certain fines are mentioned.

The greatest aid in the prevention of disease is to preserve the due proportion of mind and body, "for there is no proportion or disproportion more productive of health and disease, and virtue and vice, than that between soul and body." In the double nature of the living being if there is in this compound an impassioned soul more powerful than the body, "that soul, I say, convulses and fills with disorders the whole inner nature of man; and when eager in the pursuit of some sort of learning or study, causes wasting; or again, when teaching or disputing in private or in public and considerations and controversies arise, inflames and dissolves the composite form of man and introduces rheums; and the nature of this phenomenon is not understood by most professors of medicine, who ascribe it to the opposite of the real cause. . . . Body and mind should both be equally exercised to protect against this disproportion, and we should not move the body without the soul or the soul without the body. In this way they will be on their guard against each other, and be healthy and well balanced."[7] He urges the mathematician to practise gymnastics, and the gymnast to cultivate music and philosophy.

The modes of treatment advised are simple, and it is evident that Plato had not much faith in medicines. Professor Jowett's commentary is here worth quoting: "Plato is still the enemy of the purgative treatment of physicians, which, except in extreme cases, no man of sense will ever adopt. For, as he adds, with an insight into the truth, 'every disease is akin to the nature of the living being and is only irritated by stimulants.' He is of opinion that nature should be left to herself, and is inclined to think that physicians are in vain (c. 'Laws,' VI, 761 C, where he says that warm baths would be more beneficial to the limbs of the aged rustic than the prescriptions of a not over-wise doctor). If he seems to be extreme in his condemnation of medicine and to rely too much on diet and exercise, he might appeal to nearly all the best physicians of our own age in support of his opinions who often speak to their patients of the worthlessness of drugs. For we ourselves are sceptical about medicine, and very unwilling to submit to the purgative treatment of physicians. May we not claim for Plato an anticipation of modern ideas as about some questions of astronomy and physics, so also about medicine? As in the 'Charmides' (156, 7) he tells us that the body cannot be cured without the soul, so in the 'Timæus' he strongly asserts the sympathy of soul and body; any defect of either is the occasion of the greatest discord and disproportion in the other. Here, too, may be a presentiment that in the medicine of the future the interdependence of mind and body will be more fully recognized, and that the influence of the one over the other may be exerted in a manner which is not now thought possible."

The effect of the purgative method to which Plato was so opposed is probably referred to in the following passage. "When a man goes of his own accord to a doctor's shop and takes medicine, is he not quite aware that soon and for many days afterwards, he will be in a state of body which he would rather die than accept as a permanent condition of his life?"

It is somewhat remarkable that nowhere in the "Dialogues" is any reference made to the method of healing at the Æsculapian temples. The comments upon physic and physicians are made without allusion to these institutions. Hippocrates and other practitioners at Athens were probably secular Asclepiads, but as Dyer remarks, "in spite of the severance the doctors kept in touch with the worship of Æsculapius, and the priests in his temples did not scorn such secular knowledge as they could gain from lay practitioners."[8]

II.

So much for the general conception of the structure and functions of the body, in order and disorder, as conceived by Plato. Were nothing more to be gleaned, the thoughts on these questions of one of the greatest minds of what was intellectually the most brilliant period of the race, would be of interest, but scattered throughout his writings are innumerable little *obiter dicta*, which indicate a profound knowledge of that side of human nature which turns uppermost when the machinery is out of gear. There are, in addition, many charming analogies drawn from medicine, and many acute suggestions, some of which have a nineteenth-century flavor. The noble pilot and the wise physician who, as Nestor remarks, "is worth many another man," furnish some of the most striking illustrations of the "Dialogues."

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[6] "Not by wisdom do poets write poetry, but by a sort of inspiration and genius." — Apology.

[7] Timæus.

[8] The Gods of Greece.

One of the most admirable definitions of the Art of Medicine I selected as a rubric with which to grace my text-book, "And I said of medicine, that this is an Art which considers the constitution of the patient, and has principles of action and reasons in each case." Or, again, the comprehensive view taken in the statement, "There is one science of medicine which is concerned with the inspection of health equally in all times, present, past and future."

Plato gives a delicious account of the origin of the modern medicine, as contrasted with the art of the guild of Asclepius.[9]

> Well, I said, and to require the help of medicine, not when a wound has to be cured, or on occasion of an epidemic, but just because by indolence and a habit of life such as we have been describing, men fill themselves with waters and winds, as if their bodies were a marsh, compelling the ingenious sons of Asclepius to find more names for disease, such as flatulence and catarrh; is not this, too, a disgrace?
>
> Yes, he said, they do certainly give very strange and new-fangled names to diseases.
>
> Yes, I said, and I do not believe there were any such diseases in the days of Asclepius; and this I infer, from the circumstance that the hero Eurypylus, after he has been wounded in Homer, drinks a posset of Pramnian wine well besprinkled with barley-meal and grated cheese, which are certainly inflammatory, and yet the sons of Asclepius who were at the Trojan war do not blame the damsel who gives him the drink, or rebuke Patroclus, who is treating his case.
>
> Well, he said, that was surely an extraordinary drink to be given to a person in his condition.
>
> Not so extraordinary, I replied, if you bear in mind that in former days, as is commonly said, before the time of Herodicus, the guild of Asclepius did not practise our present system of medicine, which may be said to educate diseases. But Herodicus, being a trainer, and himself of a sickly constitution, by a combination of training and doctoring found out a way of torturing first and chiefly himself, and secondly the rest of the world.
>
> How was that? he said.
>
> By the invention of lingering death; for he had a mortal disease which he perpetually tended, and as recovery was out of the question, he passed his entire life as a valetudinarian; he could do nothing but attend upon himself, and he was in constant torment whenever he departed in anything from his usual regimen, and so dying hard, by the help of science he struggled on to old age.
>
> A rare reward of his skill.

He goes on to say that Asclepius did not instruct his descendants in valetudinarian arts because he knew that in well-ordered states individuals with occupations had no time to be ill. If a carpenter falls sick, he asks the doctor for a "rough and ready cure — an emetic, or a purge, or a cautery, or the knife — these are his remedies." Should any one prescribe for him a course of dietetics and tell him to swathe and swaddle his head, and all that sort of thing, he says, "he sees no good in a life spent in nursing his disease to the neglect of his customary employment; and therefore bidding good-bye to this sort of physician, he resumes his ordinary habits, and either gets well and lives and does his business, or, if his constitution fails, he dies and has no more trouble."

He is more in earnest in another place ("Gorgias") in an account of the relations of the arts of medicine and gymnastics: "The soul and the body being two, have two arts corresponding to them; there is the art of politics attending on the soul; and another art attending on the body, of which I know no specific name, but which may be described as having two divisions, one of which is gymnastic, and the other medicine. And in politics there is a legislative part, which answers to gymnastic, as justice does to medicine; and they run into one another, justice having to do with the same subject as legislation, and medicine with the same subject as gymnastic, yet there is a difference between them. . . . Cookery simulates the disguise of medicine, and pretends to know what food is the best for the body; and if the physician and the cook had to enter into a competition in which children were the judges, or men who had no more sense than children, as to which of them best understands the goodness or badness of food, the physician would be starved to death."

And later in the same dialogue Socrates claims to be the only true politician of his time who speaks, not with any view of pleasing, but for the good of the State, and is unwilling to practise the graces of rhetoric — and so would make a bad figure in a court of justice. He says: "I shall be tried just as a physician would be tried in a court of little boys at the indictment of the cook. What would he reply in such a case, if some one were to accuse him, saying, 'O my boys, many evil things has this man done to you; he is the death of you, especially of the younger ones among you, cutting and burning and starving and suffocating you, until you know not what to do; he gives you the bitterest potions, and compels you to hunger and fast? How unlike the variety of meats and sweets which I procured for you.' What do you suppose that the physician would reply when he found himself in this predicament? For if he told the truth he could only say: 'All this, my boys, I did with a view to health,' and then would there not just be a clamour among such judges? How they would cry out!"

The principle of continuity, of uniformity, so striking in ancient physics was transferred to the body which, like the world, was conceived of as a whole. Several striking passages illustrative of this are to be found. Thus to the question of Socrates, "Do you think that you can know the nature of the soul intelligently without knowing the nature of the whole?" Phædrus replies, "Hippocrates, the Asclepiad, says that this is the only method of procedure by which the nature even of the body can be understood." The importance of treating the whole and not the part is insisted upon. In the case of a patient who comes to them with bad eyes the saying is "that they cannot cure his eyes by themselves, but that if his eyes are to be cured his head must be treated": and then again they say "that to think of curing the head alone and not the rest of the body also is the height of folly."

Charmides had been complaining of a headache, and Critias had asked Socrates to make believe that he could cure him of it. He said that he had a charm, which he had learnt, when serving with the army, of one of the physicians of the Thracian king, Zamolxis. This physician had told Socrates that the cure of the part should not be attempted without treatment of the whole, and also that no attempt should be made to cure the body without the soul, "and, therefore, if the head and body are to be well you must begin by curing the soul; that is the first thing. . . . And he who taught me the cure and the charm added a special direction, 'Let no one,' he said, 'persuade you to cure his head until he has first given you his soul to be cured. For this,' he said, 'is the great error of our day in the treatment of the human body, that physicians separate the soul from the body.'" The charms to which he referred were fair words by which temperance was implanted in the soul.

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[9] Republic, iii.

Though a contemporary, Hippocrates is only once again referred to in the "Dialogues" — where the young Hippocrates, son of Apollodorus, who has come to Protagoras, "that almighty wise man," as Socrates terms him in another place, to learn the science and knowledge of human life, is asked by Socrates, "If you were going to Hippocrates, the Coan, the Asclepiad, and were about to give him your money, and some one said to you, 'As being what, do you give money to your namesake, Hippocrates, O Hippocrates,' what would you answer?" "I should say," he replied, "that I give money to him as a physician." "And what will he make of you?" "A physician," he said — a paragraph which would indicate that Hippocrates was in the habit of taking pupils and teaching them the art of medicine; and in the "Euthydemus," with reference to the education of physicians, Socrates says, "that he would send such to those who profess the art, and to those who demand payment for teaching the art, and profess to teach it to any one who will come and learn."

(*To be continued.*)

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Original Articles.

FRACTURES OF THE SKULL.—CONCLUSIONS DRAWN FROM THREE HUNDRED CASES.[1]

BY J. G. MUMFORD, M.D.

During the past summer I made a study of the records of three hundred cases of fracture of the skull which have been entered at the Massachusetts General Hospital in the last twelve years.

The results of this research are mainly interesting as confirming and accentuating much that has been already written, and perhaps throwing new light on the subject of fractures of the base, and causes of head injuries.

Statistics are proverbially unsatisfactory and misleading. In this study, where the diagnosis was questionable, I have weeded very largely and in drawing some of the more encouraging conclusions I have erred, if at all, in making my totals too low rather than too high.

I shall name some figures which are of general rather than scientific interest. For instance, it is a rather striking fact that out of 300 cases of skull fracture, but nine were in females; due, of course, to woman's lack of exposure and her more sedentary occupation.

The mortality in this list I find considerably higher than is usually estimated; 170 of the patients died, and 130 made a recovery, so far as the immediate records show, the mortality being 56.6%. There were 165 fractures of the vault; and 135 of the base, or base and vault combined.

The difficulty of exact diagnosis in skull fractures is not to be lost sight of, and I have attempted, so far as the reports allow, to record those only where there is no reasonable doubt of the condition.

In considering fractures of the vault the greatest difficulty exists often in cases where the skin is unbroken. For this reason I am convinced that very many times a fracture may exist without positive proof of its presence. Hæmatoma of the scalp is so common after injuries to the head that surgeons are very chary of making the diagnosis of fracture as this condition so often simulates fracture on palpation. This statement is more especially true of the methods of five years and more ago. To-day, very often, and properly, the suspicious area is explored.

On account, perhaps, of this uncertainty in the diagnosis of simple fractures, the proportion of compound fractures in these tables is very large. There are 279 compound fractures and but 21 simple fractures. When we consider that nearly all evident fractures of the base must be compound and that blows on the vault sufficiently violent to break the bone must usually tear the scalp these figures are not surprising.

Most writers ascribe fractures of the skull to blows and falls on the head. This, of course, is true; but I have taken the liberty of adding a distinct class which I will call *railway fractures.* These injuries are far the most serious that we have to meet with in civil life. Indeed, more than one-third of the deaths recorded here are from this cause.

I find that fractures from *blows* on the head are usually recovered from; that after fractures from *falls* on the head about 50% die; and that of the *railway fractures* 74% are fatal. Indeed, when I come to a case of railway fracture in reading over my list, I expect to find the death recorded. By railway fracture I mean only those cases where the momentum of a moving train is the main factor in the injury. To fall from a moving train or to be struck by an overhead bridge when the impact is received on the head seem to be accidents nearly as fatal as being run over. I have records of 90 railway fractures, of which 67 were fatal. Electric-car accidents seem to be nearly as serious, but too few of these are recorded to provide any basis for conclusions.

A very large number of fractures of the vault are complicated by extension to the base, as evidenced from symptoms and autopsies. I saw myself a very frightful example of this style of injury at the hospital some years ago. The patient was a child, the whole anterior third of whose skull was cracked off, as though he had received a blow which the old military writers describe as cleaving to the chin. The brow and upper part of his face could actually be lifted forward. The anterior lobes of the brain were, of course, extensively lacerated, and in this condition he lived about six hours.

This leads me to speak of the length of life in cases of fatal skull fractures. Such an estimate from hospital records is difficult, as doubtless a few quickly fatal cases fail to reach the hospital. To the best of my judgment I conclude that cases of immediate death from head injuries are extremely uncommon; but the opinion of a medical examiner would be more conclusive on this point. The fatal cases recorded lived after the injury anywhere from one hour to six weeks, the average being about two days, though actually the great proportion died in about six hours.

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[1] Read before the Suffolk District Medical Society, December 7, 1892.

I cannot say that the general mortality has materially diminished during the past five years. In the whole list there are but 19 cases reported as dying of sepsis, as shown by autopsy records, 13 of these were prior to the year 1885. Curiously enough one fatal recent case followed two months after an operation for traumatic epilepsy, and was not immediately due to infection at the time of the original injury. Of the nineteen cases, six fractures of the vault were trephined; three were fractures of the base, and were not trephined.

There is little evidence to show that patients frequently die of sepsis in fracture of the base, though this must not be taken as an argument for not using every precaution against infection. In this list are 135 cases of base fracture. Of these a large percentage died, and all but three within a few hours of the time of injury — too short a time for sepsis to have developed — showing how small a share this factor has in the fatality. A certain percentage, to me surprisingly large, recovered without septic symptoms. This may prove nothing or it may prove that the membranes of the brain, like the peritoneum, have high resisting qualities against infection. This conclusion is still more strongly borne out when one considers the great number of compound fractures. Of 149 compound fractures of the vault, 87 recovered, so that here the mortality was but 41%; and when one considers the infinite chance of infection offered, he is inclined to believe the unbroken dura as good a barrier against the invasion of micro-organisms as is absorbent cotton. It is for this reason that extensive compound fractures of the skull are so little harmful when unaccompanied by brain laceration, intra-cranial hæmorrhage or depression of fragments. This immunity from sepsis, and the fact that the bone injuries in themselves are trivial, makes operations on the skull comparatively harmless, and emphasizes the desirability of exploration whenever there is the least serious doubt as to the nature of the lesion. There is no case recorded in this list where an exploration through the sound skin after an accident did harm, though to be sure the operation is necessarily an infrequent one as the great majority of these fractures are compound. The operation of trephining was done 62 times: 28 of the patients died. A mortality of 45%; but the operation was undertaken oftentimes in desperate cases, and, even when the patient did not survive, there was not seldom a temporary alleviation of symptoms.

On the other hand, the advantages of trephining may be most permanent and astonishing. The brain may be extremely compressed by accumulations of blood, and enormous masses of clots are sometimes turned out. When one considers the extreme readiness with which the brain bleeds and the difficulty of primarily checking this hæmorrhage, he will the more realize the advantage and necessity of free drainage. It seems that the most important factor in brain lacerations, — is the subsequent hæmorrhage rather than the direct damage to the brain itself. Every surgeon knows that the brain may be quite extensively handled and explored, and portions of it even removed, with no subsequent ill-effects if the resulting hæmorrhage be properly checked and drained aseptically.

As for the diagnosis of fractures of the vault, these cases give very little light. There is a case of great value reported by Drs. Homans and Walton, of suspected fracture in the *right* parietal region, where a hæmatoma without fracture was proved by exploration. Eleven days later, the patient in the meantime being supposed convalescent, convulsions of the *right* side and other symptoms appeared, pointing to pressure in the *left* tempero-parietal region. Exploration at this point, by the advice of Dr. Walton, demonstrated a subdural clot due unquestionably to contre-coup. The patient made a satisfactory recovery with disappearance of symptoms after the clot and large quantities of lacerated brain tissue had been evacuated.

A comparison of such a case as this with those of genuine fracture simply goes to show that the actual fracture of the bone may be, and usually is, of very great insignificance. A train of symptoms of brain compression may exist with or without fracture and the indication must be for the repair of the localized lesion which unquestionably exists.

That slight hæmorrhage may exist without doing any great amount of harm is perfectly true, but a train of compression symptoms lasting for days must call for and indeed does receive operative relief.

There are certain symptoms in head injuries the value of which seems very uncertain. The state of the pupils has always been considered important; and I must leave it to the neurologists to determine their value. To the surgeon their state when equally contracted or dilated is of questionable importance as regards prognosis; and I am informed by one of our oculists who has been making some study of the condition of the pupils in connection with diseases of the ear, that the pupils vary greatly under apparently similar condition — due probably to some obscure neurotic state, for want of a better explanation. Certainly in cases of skull fracture we see the pupils vary greatly in the same patient and in different patients under similar conditions. The presence of irritation or of pressure from some cause is usually suspected, but the offending factors not infrequently disappear with such marked rapidity as to leave one more in the dark than ever. Unequal and non-reacting pupils, however, have usually a distinct significance, as indicating local trouble, though even here this symptom may be but a temporary one. Unfortunately the incomplete state of many of the records prohibits drawing any satisfactory and exact conclusions for the surgeon's guidance; and I am unable to see that the fact of reaction or non-reaction of the pupils has any especial bearing on the prognosis.

There is a train of symptoms familiar enough to every man of experience, on which one may base an almost positive prognosis: There were 90 cases with coma, stertor, slow pulse and unequal or dilated pupils; 87, or 96%, died. On the three that recovered the trephine was used, when the condition seemed hopeless.

Exactly what these symptoms mean beyond the vague expressions *hæmorrhage*, *pressure* and *paralysis*, it is difficult to say except in individual cases. There is often difficulty at the base which cannot be demonstrated. On the other hand, extensive hæmorrhage may cause such pressure at the vault that all the intracranial conditions are altered, and the base thus indirectly affected.

All of these various symptoms are due to pressure, as a rule; and yet similar conditions may excite different symptoms in different individuals. One of the more unusual symptoms is vomiting, which occurred but 32 times in 300 cases (yet these cases did not differ essentially from many where vomiting did not occur). There are various special paralyses of the cranial nerves recorded, which are often difficult to account for. Often no other evidence of hæmorrhage exists, and we must conclude that the nerves are directly involved in the fracture at the point of exit from the skull.

Always in considering secondary symptoms the element of hysteria or other profound nervous disturbance must not be lost sight of. I have in mind one such case in private practice, and know of others, where the nature of the lesion was for some days masked by prolonged unconsciousness and mental disturbance which later appeared unquestionably to be of hysterical origin. The case was carefully watched by Drs. M. H. Richardson, Walton and myself with a view to operative interference.

There is one variety of fracture of the vault where the diagnosis is usually certain and the method of procedure unquestionable. I refer to gun-shot wounds and fracture from the blow of a sharp-pointed instrument. Here is a fracture which is unquestionably compound; which causes a depression of the inner table; which may have penetrated the dura; which may have lacerated the brain; and which may have caused hæmorrhage. The indication here with very rare exceptions is for immediate exploration in any case; if for nothing else for the sake of elevation and drainage. Seeking for the bullet with Fluhrer's aluminium gravity probe, I have not personal knowledge of; but it is said to be a successful procedure frequently.

My list of cases shows nine gun-shot wounds. Seven of these died. Of these fatal cases three were trephined (the bullet not found), and died of sepsis in from two to six weeks. The remaining four were not trephined, and died from the result of the primary hæmorrhage. Of the two cases that recovered it is difficult to see why the result was not fatal. One received a ball in the mastoid region. Subconjunctival ecchymosis followed, showing injury at the base. The other had a penetrating wound of the vault and made a prompt and uncomplicated recovery.

The high mortality here indicates two things: first that the presence of the ball may be a serious disturbing element leading often to sepsis, and that its removal with the establishment of proper drainage, is therefore most essential; second, that the primary deaths due to hæmorrhage and pressure may be avoided in suitable cases by the immediate establishment of drainage by operation. If, as is asserted, the gravity probe will discover the ball, its use should certainly never be neglected. The fact that in one of the non-fatal cases the ball apparently passed entirely through the brain without causing any serious hæmorrhage or subsequent sepsis goes to emphasize again the extreme danger of the former (hæmorrhage) and the more than possibility of immunity from the latter (sepsis).

These cases of gun-shot wound may be included in the class of punctured wounds, which are always described as most serious and as demanding immediate operation for the elevation of fragments of the inner table. As a matter of fact, punctured wounds from other causes seem to be very uncommon. There are two others in this list: one from the blow of a pick on the vault, where immediate operation was done and convalescence followed; the other a case where a boat-hook was thrust up the nostril, and recovery without operation followed, though at last accounts there was permanent blindness of one eye.

In this connection I may mention the most unfortunate death of Dr. Terry, of Fall River, last summer, which we all probably recollect. He received a foil thrust in fencing. The weapon entered the right orbit, and passed through its roof without injuring the ball of the eye. Immediate and extensive hæmorrhage, with blindness and paralysis, followed; and death ensued within three hours. Here there was ecchymosis of the lids, but the valve-like nature of the wound of entrance absolutely prevented the external escape of blood.

There is a certain small proportion of cases which die without obvious symptoms of cerebral lesion. These deaths are apparently due to direct injury to the pons and medulla or the nerves of the fourth ventricle. In one case without signs of hæmorrhage or pressure, the pneumogastric nerves were lacerated, and death followed from pulmonary and cardiac failure without other symptoms.

There are records of four operations for traumatic epilepsy. For the purposes of this paper these may be considered compound fractures of the skull. They have been reported, and of the therapeutic value of the operation it is not necessary to speak. One of them unfortunately became infected, from a bit of buried wax used to check an obstinate hæmorrhage from the middle meningeal artery, and proved fatal after two months. At the autopsy the ventricles were found distended with pus.

Perhaps the most interesting subject in connection with this investigation is that of fracture of the base. It is well recognized that this lesion is not a mortal one *per se*.

In collecting these cases I have endeavored, as far as possible, to cite those only where the diagnosis was beyond all reasonable doubt; and, without question, I may have omitted some where this serious condition went unrecognized. Here the diagnosis is given when based, not on any one sign or symptom, but on groups of symptoms. There are in the list 135 cases of base fracture, of which 108 died, a mortality of 80%. This is more than twice as great as in fractures of the vault, where the mortality was 37.5%.

The diagnosis rests mainly on evidence of hæmorrhage seen and unseen. The most common apparent hæmorrhage is that from the ears, as the impact in fractures of the base is mostly about the foramen magnum and in the middle fossa. The presence of cerebro spinal fluid with the hæmorrhage is not essential in these injuries. When it is remembered that the cavernous, petrosal and lateral sinuses lie in close proximity to the basilar plate and petrous bones, it is evident that slight injury to these vessels may occasion hæmorrhage without necessarily involving the fluid within the dura. That this may be so is evidenced by an autopsy where there was hæmorrhage from the ear without cerebro-spinal fluid, and where fracture of the base was suspected. The petrous bone and the occiput were found cracked, but there was no evidence of extravasation of cerebro-spinal fluid.

Hæmorrhage from the ears may, of course, be from other causes than fracture; but time or the careful examination of an aurist will usually settle this point.

Hæmorrhage from the nose may also be due to other causes than fracture. It is very common in all injuries to the head. If the blood is mingled with cerebrospinal fluid, the diagnosis is practically settled, as well as by long continued bleeding, and often by hæmorrhage from the pharynx vault.

Ecchymosis of the lids is not at all diagnostic. It was Dr. R. M. Hodges, I believe, who first pointed out the fact that subconjunctival hæmorrhage is a vastly more important factor.

A perfectly familiar sign of fracture of the occiput which is often overlooked is ecchymosis in the mastoid region. Many cases, of course, die too soon for this evidence to be of value. When it appears, it usually does so in from two to five days after the injury.

There are undoubtedly many cases of fracture where no external hæmorrhage is seen, and where pressure symptoms alone must be relied on. These are too uncertain to use in evidence here.

Almost without exception hæmorrhage, more or less extensive, is the great source of danger in these cases, as in those of fracture of the vault. I refer, of course, to the experience of civil practice: the fearful mangling of the brain so common in actual warfare is almost unknown except occasionally in railway surgery.

This matter of hæmorrhage and its relief is the keynote to the whole subject of treatment and prognosis in those cases which are not immediately fatal; and it is most interesting to note that, in very many of those cases where free hæmorrhage, external exists, this is cause for congratulation. Of the 27 cases which recovered, 20 had profuse hæmorrhage from the ears, and five from the nose or nose and ears together. Two had slight hæmorrhages into the orbit and mastoid region, the lesion in both those cases being apparently trivial. Out of the total number of base fractures, 75, or more than 50%, had hæmorrhage from the ear, so that we may say that, given fracture of the base with hæmorrhage from the ear, one-third of the cases recover.

This is rather a remarkable showing and the deduction is obvious; namely, that in fractures of the base free drainage is the one great essential for recovery. That fact was not always recognized at the time of the injury when these records were written, which makes the unconscious evidence of the writers of greater value. In these cases I find it very frequently reported that the hæmorrhage was profuse, was copious, and was long continued.

Writers in recent years have dwelt much on the necessity of the antiseptic treatment of these wounds of the base, and that procedure is certainly a very proper one; but the fact that even in pre-antiseptic days so few of these cases died of sepsis — three out of 108, as shown by autopsy — goes to demonstrate that sepsis must be considered a very remote danger. In the detail of antiseptic dressings to these base fractures great care must be taken to facilitate free drainage. I have seen the ear stuffed so tight with sterilized cotton that the plug entirely checked the external hæmorrhage. A slight gauze wick, frequent irrigation and a large, loose external pad make the most suitable dressings in these cases.

When the hæmorrhage comes from the nose or pharynx, there is less danger of doing damage by plugging; but it is also much more difficult or impossible to render the parts aseptic. Frequent douches, drying powders and gauze drains may, however, be used with advantage.

When all the mild and palliative measures have been used, the important question of drainage still remains to be met, and though our data are not yet large enough to admit of laying down a hard and fast rule, such cases as we have go to show that always when fracture of the base is apparent, when the source of hæmorrhage is not beyond exploration, and when the patient's strength admits, the trephine should be used. A few notable cases have already been reported where success followed the operation, and these cases should encourage the surgeon under similar circumstances.

I have not attempted in this sketch to do more than follow out the obvious lines of thought suggested by the records. Incomplete as these records necessarily are, their significance seems to me unquestionable: that the bone injury in itself is insignificant, that the danger of sepsis is remote when the membranes are intact, that base fractures are not necessarily fatal, and that removal of pressure and free drainage is the one great essential in the surgeon's treatment of all cases.

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NOTES ON THE CENTENNIAL ANNIVERSARY OF THE DISCOVERY OF ASTIGMATISM.[1]

BY DAVID COGGIN, M.D., SALEM, MASS.

In 1793, exactly one century ago, Thomas Young, an English medical student only twenty years of age, found there was a want of symmetry in the dioptric system of his eyes. He did not name this defect, and being interested in other fields of science, it is likely he died without realizing the great importance of his discovery. Not much is recorded of this anomaly till fifty years later, although astronomer-royal Airy, in 1827, only two years before the decease of Dr. Young, had cylindrical glasses ground that corrected this refractive error in his own eyes, which was afterwards called astigmatism by Rev. Dr. Whewell, Master of Trinity, Cambridge. But cylinder-glasses for its relief were rarely used prior to 1860, or thereabouts.

When the late Dr. Dix, of Boston, wrote his Boylston prize-essay in 1848 ("Morbid Sensibility of the Retina"), astigmatism was apparently unknown in this vicinity — "myopy" and "presbyopy" being the only recognized refractive errors. But in the midst of our Civil War, the late Professor Donders, of Utrecht, in his "Refraction and Accommodation of the Eye" (New Sydenham Society, London), described astigmatism clearly, and with it the almost as important malformation of the eye-ball which he termed hypermetropia (the eye being turnip-shaped, to use a bucolic simile).

In the same year, it may be remarked, there was founded in New York City, the American Ophthalmological Society, now the oldest of the dozen societies of specialists that hold triennial meetings in Washington. Eight of the original members survive, of whom five live in Boston.

With the appearance of Donders's treatise, ophthalmology took rapid strides forward. Ophthalmic surgeons soon found that patients, and oftentimes very youthful eyes, having flat-shaped eyes could use them without fatigue on wearing convex glasses, while other patients, whose corneæ were ellipsoidal in form, or, as Donders defined it, where there existed "an aberration dependent on the difference in focal length of the different meridians of the light-refracting system," could get the same amount of relief on wearing cylindrical glasses. At first, in England at least, astigmatic lenses were large, and they were inserted in round frames so they could be readily rotated by the wearer till the proper axis should be found that would correct the corneal asymmetry, but such temporary mountings have passed by and especially in this country, where all optical work is both well done and well charged for. It appears, therefore, that American ophthalmic surgeons have been quietly prescribing cylindrical glasses in cases of astigmatism, as a matter of almost daily routine, for about thirty years, so it is somewhat remarkable that it is only within the last few years that cases of eye-strain due to this defect have been more commonly referred to them by general practitioners, than was the case previously. Doubtless this awakening has been largely due to the enthusiastic teachings of the members of the Neurological, one of the oldest of our special societies. As is well known, they frequently refer their patients to an oculist for the appropriate treatment of refractive and muscular troubles, and so do their followers in town and country.

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[1] Read before the Essex South District Medical Society, January 10, 1893.

Now you are aware that Essex County is so densely populated that it can be likened to a great workshop, for in its cities and towns there is a large number of skilled artisans, of both sexes, employed in numerous shoe and other manufacturing establishments. At best, their occupations are fatiguing; and if their vision is below par, their work becomes wellnigh unbearable; so they finally seek relief from the ophthalmic surgeon — and they ordinarily get it.

Of the new patients seen by the reader in the year several belonged to this class, and of these 181 (16 per cent.) had regular corneal astigmatism, for the correction of which cylindrical spectacles were prescribed (and it is believed that almost invariably this advice was followed).[2] Astigmatic glasses were not ordered for over eighty other astigmatic patients, who were either averse to glasses or their astigmatism was too irregular to be corrected. It is a matter of wonder how frequently such patients will persistently decline glasses preferring, like Felix, to wait for a more convenient season. If young and in health, and so situated in life that they need not tax their eyes much, they get along fairly well. But after the lapse of some years, and with the approach of old-sight, they reluctantly consent to put on the rejected glasses. In the past year, more than a dozen old patients returned for the formulæ of the cylindrical glasses that had once been rejected. Without doubt you all can recall instances where it has been far from easy to induce such cases to seek relief from an oculist.

Not infrequently, in incipient cataract a lenticular astigmatism is developed, for the correction of which certain opticians will fit cylinder-glasses. The same lenses can rarely be worn long, which should be considered before ordering them, for poor patients at least. After the extraction of a cataract, a lens having one surface cylindrical will occasionally aid vision very materially. In the writer's experience such cases have been infrequent, however.

In closing this brief sketch, it may be said, it seems likely that astigmatism, like the poor, is always with us. Indeed, it has been affirmed that it is ordinarily to be found in the human eye. It is certain that if the refractive surfaces of Clarke's great lenses were as irregular as are those of our eyes they would be immediately condemned; and, in our day at least, we could not hope to become familiar with the topography of Mars, but like the old Hebrew prophet we should die without having seen the promised land.

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Clinical Department.

TWO CASES OF TREPHINING FOR INTRACRANIAL HÆMORRHAGE.[1]

BY [illegible] W. [illegible], M.D.

Case I. *Middle Meningeal Hæmorrhage in a case of extensive fracture of the right side of the skull involving the base; trephining and ligature of the artery; recovery.*

The patient had fallen on his head from a distance of twelve feet, and had been picked up unconscious, but had partially regained consciousness when he arrived at the Massachusetts General Hospital. Between seven and nine o'clock his pulse had fallen from 68 to 40; his pupils had ceased to respond to light, and the right one had become dilated. He had had convulsive movements and had sunk into deep coma with stertorous breathing. The probable diagnosis of middle meningeal hæmorrhage was reached.

No fracture of the skull was seen until the scalp had been reflected, when a linear fracture was found running from the parietal eminence down into the base of the skull. I trephined, without ether, just above the ear, and found a black clot (extra dural) as large as a small fist running back as far as the parietal eminence. The middle meningeal artery was seen spurting in the trephine opening, and was tied by passing a curved needle through the dura. The large blood-clot was removed with fingers and a spoon. The brain was compressed more than an inch below its normal level and did not return when the clot was removed. Consequently, this large space between the dura and the skull immediately refilled with blood. The hæmorrhage continued to be serious until the whole space was packed with gauze.

The pulse rose from 40 to 100 during the operation, and the patient became somewhat sensitive to pain and moved his arms and legs.

On the second day he began to recover his intelligence and continued to improve. The wound healed rapidly and the patient made a complete recovery.

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[2] [illegible] altogether without interest:

	Females	Males
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]
Am (one eye)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	
Am (o. s.) [illegible]		1
	[illegible]	[illegible]

[illegible]

[1] Read before the Surgical Section of the Suffolk District Medical Society, December 7, 1892.

Case II. *Sub-arachnoid Hæmorrhage in a compound depressed fracture of the skull.*

The patient was kicked by a horse, and was unconscious for about ten minutes. When seen three hours later he was conscious but had difficulty in speaking. The tongue turned to the left side when protruded. There was a compound depressed fracture on the right side of the skull two and one-half inches above the ear, running up and backwards for two and one-fourth inches. The depression was an inch wide and three-fourths of an inch deep.

I trephined, and removed the depressed fragments of the skull. The dura mater appeared white and uninjured, but it bulged into the wound and did not pulsate. Distinct fluctuation showed the presence of fluid beneath. The dura was incised and a quantity of liquid blood was found in the arachnoid space. Blood continued to pour out and was only controlled by packing gauze deep in between the convolutions of the brain.

The patient made a prompt recovery. He had, during convalescence, paresis of movements of the upper lip especially noticeable in talking, and the tongue protruded to the left side for several weeks. The injury was over the lower part of the fissure of Rolando.

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ACQUIRED PREDISPOSITION TO IODOFORM POISONING.

BY FRANCIS E. PARK, M.D., STONEHAM, MASS.

On July 6, 1892, Mr. E. F. was brought to my office with a badly mangled foot, the result of a mowing-machine accident. The wound was very extensive. After tying the necessary vessels and disinfecting thoroughly with peroxide of hydrogen, I bandaged the foot, using iodoform gauze for a dressing. The case went on very well until the first of August, when I went off on my vacation, leaving him in the care of a friend. On my return in September, I was summoned to see him, and found the following condition of affairs: the wound had almost healed over; the foot was swollen to about twice the natural size; the skin was very red and covered with numerous vesicles filled with serum; there was intense burning and itching; the face was flushed; and there was a slight rise of temperature together with a rapid pulse. The history was that a week previous the skin had begun to turn red and little "water-blisters" to form, and that the case had grown steadily worse. The diagnosis was plain, and the gauze was removed. In a few days under no further treatment, the whole disturbance had subsided.

December 30, 1892, same individual presented himself with a clean axe-cut two inches long, just above the patella. This was washed out with peroxide of hydrogen, and two aseptic cat-gut ligatures brought the parts in apposition, while a strip of absorbent cotton plastered down with iodoform collodion, served to cover-in the same. A posterior splint was then applied, and the whole bandaged. On the evening of January 2d, I was sent for, and found the whole knee greatly enlarged, the skin red and covered with vesicles. He complained of great itching and burning over the affected part. The wound had united by first intention and was looking nicely. Here there was a question whether, in chopping, he had infected his axe with rhus poison; but the healthy appearance of the wound, and the marked resemblance of the symptoms to those of his former attack, led me at once to suspect the iodoform and remove it, taking out the stitches at the same time. As I was desirous of making an absolute diagnosis, no treatment was applied. In two days, the swelling was gone and the dermatitis was rapidly improving, proving conclusively, to my mind, that the irritation was caused by the iodoform dressing.

To summarize, we have a large wound treated continuously for a period of about six weeks with iodoform, acute and violent irritation supervening from use of, and disappearing on removal of, the same, and a complete cure resulting. After a lapse of three and a half months, a small amount of iodoform is applied to a small wound in the same individual and at once an acute and violent irritation is set up that resembles the other in every particular and rapidly subsides on the removal of the irritant.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

Regular Meeting, December 7, 1891, the President Dr. A. Post, in the chair.

Dr. J. W. Elliot reported

TWO CASES OF INTRA-CRANIAL HÆMORRHAGE.[1]

Dr. Putnam: The subject is a very important one, and it is certainly true that the most satisfactory of the operations done at the hospital have been in this class of cases. It seems a strange provision of nature that so important a vessel should be left so unguarded on the side of the head, so slight an injury being sufficient to cause rupture on account of the elasticity of the bone and its thinness and the stretching of the vessel. It seems to me it is an interesting suggestion that this is so because our heads have grown so rapidly away from the animal type. In the lower animals, which are exposed to violence more than we are, that portion of the skull where the middle meningeal artery runs is protected by a very thick temporal ridge and a much thicker muscle than we possess.

As regards the diagnosis, it seems to me it is a matter of a good deal of interest, as Dr. Elliot has said, and a matter of a good deal of difficulty. I should suppose there is no question that the essential thing in determining the diagnosis is unconciousness, and coma coming on in an interval of consciousness or relative consciousness which may have been preceded by unconsciousness, due to the violence of the original injury. Many cases are mixed, I think; at any rate the diagnosis in the first stage is a matter of a great deal of difficulty. I was recently called to see a lady, now in the hospital, who was in a carriage struck by an electric car. She received probably a blow on the head due to the head being thrown against the side of the carriage. There was no scalp wound or injury to the head at any particular point. She was unconscious a few moments, and immediately found to have hemiplegia. When I saw her she was practically entirely conscious with some jerking of the limbs on the affected side. The probable injury seemed to be a meningeal hæmorrhage or superficial contusion; but as the case went on, it became apparent that it was a rupture of a vessel in the interior of the brain, which is comparatively rare and yet has to be borne in mind.

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[1] See page 137 of the Journal.

With regard to the question of the importance of the operation, there is a good deal to be said. I remember reading Jacobson's paper with great interest; and his constant injunction is to operate. Although, of course, operation should be done when coma is present, when the symptoms of compression which might prove fatal occur, it seems to me, to say the least, a good deal of a question whether it is essential for the recovery of the patient that an operation should be done previous to that. Of course, the danger of further hæmorrhage and coma may be averted by operation, but it is an interesting and important question whether the operation is anything like as essential as the reabsorption of the clot. It does not seem to me it is. We have had several cases at the hospital which seemed to point in the other direction. I remember one where the man was wholly paralyzed and aphasic, and after a while began to recover and recovered entirely. Another patient had twitching of the limbs, epileptiform in character, with unconsciousness; and Dr. Porter had already made the scalp wound, when the matter was talked over, and it was decided to postpone it a little, and that patient ceased from that time to have epileptiform attacks and get well. I dare say both of these may have been cases rather of contusion than hæmorrhage.

The question of dilatation of the pupils is interesting. Dr. Elliot referred to Hutchinson's statement that it is due to pressure on the third nerve. I have seen a case where the third nerve was injured from fracture; but all the symptoms recovered in such a way as to show that there could not have been deep-seated hæmorrhage, and paralysis of the third pair passed almost wholly away. Dilated pupil may be due to that cause, but it is not necessarily due to that cause.

It seems to me it is worth inquiring how trifling the operation of trephining is. I suppose almost every surgeon would say it is a very slight operation, that patients very rarely get any harm from it. I remember a case where Dr. Warren operated for epilepsy, trephining and opening the dura, and where, in consequence of return of epileptic attacks six months later, secondary operation was done in the same neighborhood and the surface of the brain found adherent to the edges of the old wound in the dura and not in a satisfactory condition. How often that occurs I don't know, but certainly the first operation was done with the utmost care. I do not know that there is any reason to suppose that the mere presence of a clot, even a large one, may not be absorbed in the first place; and in the second place, I do not know that there is positively any great evidence to show that the retention of a small quantity of clot is necessarily a source of danger. Certainly, if the clot is removed by operation, one does not expect to get rid of the whole of it.

Dr. Warren: I think this subject ought not to be allowed to pass without any discussion from the surgical standpoint. It is a very interesting department of surgery and one which deserves close study, and one which I think we have not probed fully to the bottom yet. The question of a point of election for trephining in cases of hæmorrhage is one part of the subject which is of interest; and the rule, as Dr. Elliot has pointed out, is to select that region known as the pterion, or the part where the parietal bone joins the frontal and temporal bones. If no clot is found there, trephine farther back, on a line parallel with the roof of the orbit, to see whether the hæmorrhage does not come from a branch of the artery. In a case which I had last winter I selected a point anterior to the line running from the external auditory meatus to the bregma. I found no large clot but a good deal of fluid blood, which oozed up from the base of the skull. The pulse, which was 40, came up to 100 on releasing the fluid blood; but the injuries were very extensive in that case, and the man lived only a few hours. Dr. Elliot referred to one case which I trephined for a fracture of the temporal bone in which there was hæmorrhage and also laceration of the brain. There was no external wound, but blood oozed from the ear and my object in trephining was partly for the purpose of removing the clot and also for drainage. I think it a point of great importance, that we should not only relieve the pressure caused by the hæmorrhage, but that we should also undertake, by making an opening into a cranial cavity to remove all the fluid which remains there, and which if there is a fracture across the vault of the pharynx, may become subsequently infected and give rise to septic meningitis. You remove the soil in which the contagion may spread easily and also remove the exudation which will cause subsequent pressure and degenerative changes in the cerebral substance. In one case of fracture of the base of the skull in which the symptoms were not very severe — pretty complete coma, very slight bleeding from the ear and no contusions or incisions on the scalp — I thought of carrying out the rule, which I had formulated at the time of my first case, to trephine for the purpose of drainage at the point of election, but did not, and the patient subsequently had convulsions, was trephined, and contused condition of the brain was found at the second operation and the patient subsequently died. It seemed to me as if that case, like many other cases of fracture of the base without marked symptoms of hæmorrhage, should have been trephined; but of course there are a great many of these cases which come in with coma and bleeding from the ear and some other symptoms of fracture of the base which after a few days begin to improve and go away convalescent without any bad subsequent symptoms, therefore we have got to learn by experience in just what case to interfere.

The point of election which I should make for the purpose of drainage would be a lower point in the cavity of the skull than the one selected for searching for a clot or for the vessel itself, and that is through the squamous portion of the temporal bone just above and a little behind the external auditory meatus. That brings us directly into the posterior part of the middle fossa of the skull which runs slightly backwards and outwards; and all exudation above the tentorium in the anterior fossa and middle fossa would naturally gravitate out from that point, and with gauze drainage a great deal of liquid might be syphoned out by capillary attraction without causing pressure or irritation upon the cerebral substance.

Dr. Elliot: In regard to what Dr. Putnam has said about what would happen to these cases if left to themselves, he referred to Jacobson's article, who certainly suggests trephining under all circumstances in these cases. Jacobson has collected the cases for a hundred years, up to 1885, some two or three hundred, and there have been only ten cases successfully trephined. Almost all his results are from autopsies. Now that is a very long list of fatal cases. My case of middle meningeal hæmorrhage I am perfectly certain would have died in a few hours if he had not been trephined. It is impossible to describe the man's condition accurately, so that you can realize its seriousness. Case II, I haven't the least doubt would not have died from the hæmorrhage in the arachnoid space unless it had increased a good deal; so that in a general way I think there could be scarcely a doubt that the severe cases of middle meningeal hæmorrhage are necessarily fatal. Of course, a middle meningeal hæmorrhage may vary in amount, as any other hæmorrhage; and there is no reason why a small amount of blood there should not be absorbed as well as elsewhere; but I have mentioned how few cases had recovered in the one hundred years up to 1885. In the last four years Sajous's list reports 24 cases of extradural and nine of sub-dural hæmorrhage which recovered, and among these there are four cases of extradural and two of sub-dural which died. Of course, that is not a fair statement of the mortality, because a great many of the fatal cases are not reported; but it is certainly very encouraging that 33 cases can be reported in four years, which have lived.

Dr. E. H. Bradford showed an improved instrument for trephining.

Dr. J. G. Mumford read his

CONCLUSIONS FROM THE STUDY OF THREE HUNDRED FRACTURES OF THE SKULL.*

Dr. Bradford: Dr. Mumford spoke about the sepsis of the bullet. Were those pistol-shot wounds or gun-shot wounds?

Dr. Mumford: Three pistol-shot wounds and three or four gun-shot wounds.

Dr. Bradford: Last week I was reading some experiments made by an army surgeon in regard to the sepsis of bullets, and he took the ground that they were not septic as a rule; and I think that is rather the history of gun- and pistol-shot wounds — that is, the experience in the Civil War in other portions of the body.

Dr. Mumford: The data from the records do not give us enough to draw conclusions from. I did not mean to say that bullets are always septic. The total number of deaths from sepsis is only nineteen; but I cannot admit it proven that a pistol-bullet at short range is aseptic. Dr. Munro, I think, looked up the matter of fractures; and I think he has generalized something in regard to the reaction of the pupils as a prognostic symptom.

Dr. Munro: Three years ago Dr. Lovett and myself looked up 333 cases of head injury treated at the City Hospital, including 105 cases of concussion. In the latter class reaction of the pupils was apparently a very important prognostic symptom, because when the reaction was normal, recovery followed five times out of six; and when death did take place, the pupils having reacted normally, there was usually some concurrant grave lesion like fracture of the liver, spine, etc.

In fracture of the base, about 70 per cent. of the fatal cases had non-reacting pupils whereas in the recoveries the pupils were normal almost without exception. Of course, the diagnosis in recovery cases is more or less open to question; but in suspected basal fractures the inability of the pupils to react to light should be regarded as an unfavorable sign.

With regard to sepsis our cases showed its occurrence more frequently than do those of Dr. Mumford. In fractures of the base there were 24 autopsies, five of which were in cases that died on the second day after injury and six were in those that lived longer than two days. Of the latter, sepsis was found in four and blood-clot in two. In the five that lived two days, blood-clot or brain laceration caused death. All the remaining 13 cases died a few hours after injury.

In compound fractures with and without depression, and in gun-shot injuries, sepsis was present in over half the fatal cases that lived longer than forty-eight hours.

SPECIMENS.

Dr. Burt: Here are two tumors, one a little one that is cut open, and several smaller pieces. The case was brought from Nova Scotia and referred to me. I saw her last Sunday night, and found the history something like this: Never noticed anything the trouble at all, I think, till about five months ago, when evidently she became pregnant the first time. She was twenty-six. As soon as she became pregnant she noticed a development aside from the development of the uterus, and the mass that was noticed was growing very rapidly. I should judge that the tumor was present a year or two before she became pregnant, but the existence of pregnancy developed it. The examination showed her to be about five months advanced in pregnancy, and every bit of the uterus was to the right of the median line, and the other development was just about the line of Poupart's ligament, extended down into the vagina an inch below the cervix, was kidney-shaped, and came up a considerable distance above the crest. I could not make out what it was. It was very hard. There was considerable pain, and evidently something needed to be done. It seemed to me if she went on through pregnancy, that this growth was developing fast and would obstruct the whole passage and something would happen. I did not think it was possible to tell anything about the nature of the growth. I recommended operation. I operated yesterday morning. On making an incision the growth presented itself. It was pretty firmly attached, and I could not tell then what it was. It seemed to be in the broad ligament, and the only thing it seemed to me best to do was to make an incision into it. At first look it seemed like a papilloma. It does look a good deal like endometrium. After incising down I found I could shell out this growth. I shelled them all out; and then I closed the whole cavity from which these came, took away a little of the tissue, and of course, it reduced the tumor to almost nothing. I treated it as you would an intra-abdominal stump, by closing the whole thing with cat-gut, and the outside incision closed as an ordinary wound is with layers of cat-gut for the different layers of tissue. I put in behind the site of the tumor a little rubber tube about the size of a slate-pencil. It has been oozing only a little from that. After removing the growth the uterus went to the median line. These seem to be fibroid growths. I do not know what else they can be without any examination; and if the congestion of the part does not cause more development there, I expect she is going through pregnancy all right.

Dr. Farlow showed several pieces of sponge, the largest an inch and an eighth long by five-eighths broad, which he had recently removed from the inferior meatus of the nose of a man. To prevent hæmorrhage, the sponge had been placed in the post-nasal space eight months previously by his family physician. A day or two latter the post-nasal space was seen to be empty, and it was inferred that the patient had unconsciously expectorated the sponge. A thickened and deviated septum prevented a good view though the anterior nares. A fetid odor later gave rise to the belief that there was necrosis and the nostril was curetted several times but without avail. When Dr. Farlow saw the man, there was a very offensive odor, the nostril was more or less occluded, and the swelling and thickening made it impossible to see anything. By the use of cocaine and a probe a foreign body was located in the inferior meatus and removed by forceps from where it lay completely imbedded. There was no necrosis, and the man is now entirely well.

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* See page 133 of the Journal.

Dr. Farlow also showed some very large pieces of adenoid growth which he had recently removed from the post-nasal space of a boy nine years old. The operation was done under ether and a pair of forceps with a large cutting surface and firm jaws was used.

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THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENERAL MEDICINE.

Stated Meeting, January 17, 1893, **A. Alexander Smith**, M.D., Chairman.

DISCUSSION ON THE INFLUENCE OF THE BACTERIAL THEORY OF DISEASE UPON CLINICAL MEDICINE.

Dr. J. D. Byron gave a

Statement of the Accepted Facts and Modifications of the Theory during the Past Few Years.

Dr. Wm. Gilman Thompson read a paper on

Deductions from its Relations to Physiology.

He said that the subject of the bacteriological origin of disease was so closely allied to well-known normal physiological processes as to render deductions from the latter largely applicable to the germ theory. The following facts might be cited in support of this statement:

(1) It is proven that in certain diseases bacteria contained in the blood or the tissues either generate ferments or, themselves acting as ferments, generate toxic principles, such as leucomaines, albumoses or "toxines."

(2) These bacteria may sometimes also generate "anti-toxines," which are substances inimical to their own growth, either by killing the bacteria outright, or by rendering the medium in which they exist unfit to support them.

(3) This identical process has been observed in certain physiological actions. Thus, under proper conditions, the yeast-germ may produce an excess of alcohol, which, if not removed, destroys the germ's vitality; and strong alcohol added to the fermenting fluid, retards or destroys the process, just as an anti-toxine added to the blood may destroy the activity of a foreign germ or ferment. Again, certain putrefactive fermentations result in the development of phenol, creosol, etc., — substances which act as anti-toxines to check the very fermentation which produced them. Iodol and skatol in the intestine exhibit a similar action in connection with the pancreatic fermentation which gave them origin. Many substances, such as the proteid snake-poison and "high" game or cheese would be extremely toxic in the systemic circulation; yet they may be swallowed at times with impunity, because they encounter normal anti-toxines or ferments either in the alimentary canal or liver, which neutralize or destroy them.

(4) Proteid materials furnish some of the strongest physiological poisons known to affect the heart and central nervous system, and they also form most active and diverse soils for the operations of bacteria. Germs like the *bacillus anthrax* are known to produce scarcely any toxine while growing in a weak beef-tea containing but little proteid, but on being transplanted to a richer soil of blood-fibrin or tissue albumen, a toxine is formed abundantly. . . . In such media as the blood, and more highly albuminous tissues, germs have access to a soil at once rich in variety and in quantity of proteid material, from which to develop various toxines, ferments or albumoses.

(5) In many diseases characterized by systemic poisoning, like diphtheria, the germs themselves are distinctly localized, and may not be found in the blood at all. The toxines are present, however, and here, again, we find analogy among the normal physiological fermentations. The yeast-germ in addition to alcohol produces an inverting ferment which converts cane to grape sugar, and the alkaline fermentation of normal urine is accompanied by the production of another inverting ferment. In both these instances the ferments are capable of independent action when completely separated from the germs which were at first present to produce them.

Dr. Thompson went on to say that although the study of animal alkaloids was comparatively new, already at least 17 distinct ptomaines had been isolated from the tissues of the cadaver, and 10 or more leucomaines from the normal living body; some of which were closely allied in action and re-action to the toxines produced by cultivating in freshly derived proteids such germs as those of cholera, diphtheria, tetanus, typhoid fever, anthrax, etc.

Many facts like the foregoing, obtained by observation of physiological phenomena, all strongly confirmed the possibilities of that portion of the germ theory of disease which concerns the influence in the human body of bacterial fermentation, and its accompanying production of toxines and anti-toxines. The appropriate deduction from this standpoint to the field of therapeutics and clinical work was, that antidotes such as anti-toxines, when produced by the disease germs themselves, (either within the body or by external cultivation in proteid media,) will afford, when we understand them better, the natural and most efficacious means at our disposal for combatting germ diseases. When we contemplate the brilliancy and the thoroughly scientific character of the manifold inoculation experiments being made at the present day in this field of research, there seemed to be every promise of attaining more and more practical beneficial results.

Influence upon the Clinical Methods of Individual Practitioners.

Dr. Henry F. Walker said he had been asked to give a statement as to how far the bacterial theory had influenced him in practice: — how much, if at all, his practice had been modified by it. In the first place, he accepted this theory of causation, and he thought that by means of it we had made a great advance in establishing medicine as a more certain science. But he had to acknowledge that his therapeusis had been but little changed, and this was because therapeutics had not caught up. Ever since men first made diagnoses and confirmed opinions by autopsical proofs therapeusis had been a laggard.

It seemed now, however, that an era was approaching in which by killing a disease we might, at last, claim that we had *cured* a patient. But this must be by means which we did not yet possess; by poisons deadly to germs, innocuous to mankind. So many of the remedies destructive to bacteria were equally destructive to man that one hesitated in their use; though he had personally tried almost the full list. In diphtheria he had used everything, from corrosive sublimate to pine-apple juice, and he was not sure but that the cases which had only local treatment, with supporting care, had done as well as those which took active poisons for constitutional effect. In pneumonia he had not pursued a treatment based on the bacterial theory, unless the large dosage by quinine came under that head. In typhoid fever he had used salol; but cold baths in severe cases and dietary care in milder forms had been his reliance. In tuberculosis of the lungs the patient usually went to the bourne of the specialist, never to return to the general practitioner; so that he had little experience to relate in regard to it. In all cases of persisting cough with expectoration he got a microscopical examination of the sputa. Several of these cases had made apparently complete recoveries, though the tubercular bacilli had proved most abundant. So the belief in the bacterial theory of tuberculosis had helped his *prognosis* in the next sufferer.

In his obstetrical practice there had been a great change in his methods of care of himself, as well as of his patients. He never made an examination in labor without first washing his hands and thoroughly disinfecting them with bichloride solution. At birth the baby's eyelids were thoroughly cleansed. The mother's vulva was washed with bichloride solution then, and always afterward; and if there had been any laceration the wound was made aseptic and immediately closed with catgut sutures. He used the bichloride sanitary pad, instead of napkins, and had the pads burned. He had wholly forbidden the use a syringe for the vagina, unless symptoms gave rise to the suspicion that shreds of decomposing material remained in the uterus. Then he used the intra-uterine douche, and perhaps the curette also. The babe, if nursed by the mother, was applied to a nipple thoroughly cleansed both before and after nursing. If it was fed from a bottle, that and its annexes were kept sterile, and sterilized milk was employed. As long as the milk was diluted, boiled water was used for this purpose. All these precautions had markedly diminished his anxiety by diminishing his cares. His treatment of abortion was conducted on precisely the same principles.

On the whole, he said, a belief in the bacterial theory had helped in the care of his patients. He had always felt that one who was ill had better be in bed, and if in bed, had better be isolated. He thought we should have fewer colds in the head running through a household, fewer influenzas, less pneumonia, if these patients were isolated and the same precautions employed as in scarlatina. We now know these diseases to be more or less infectious and caused by specific entities; and it was always his effort, as far as possible, to stamp out a household epidemic by a family quarantine.

Dr. Andrew H. Smith sent a communication, in which he said that in reviewing his practice for the past few years he could not see that it had been changed to any great extent by the modern discoveries in bacteriology. In fact, we had previously arrived emperically at methods of treatment whose efficacy was now explained by the results of these recent investigations. Thus, in common with every one else, he had given quinine in malarial fever long before he ever heard of a *plasmodium malariæ*; and although it was a satisfaction to know that the plasmodia disappears under the action of quinine, that new knowledge did not affect the old treatment. In like manner, long before he had seen or heard of a gonococcus, he was in the habit of using, in the treatment of gonorrhœa, agents which were now known to be germicides, and the discovery of this micrococcus had served merely to lead him to place more stress upon local treatment.

In gastro-intestinal disturbances we had long ago recognized the rôle played by fermentation, in the restricted sense in which that word was formerly employed, and while in late years the list of antiseptics was vastly increased, we applied them in much the same way as when we called them anti-ferments. The treatment of typhoid fever now most in vogue, and to which he gave a qualified adherence; took very little note of the discoveries of Koch and Eberth, and intestinal disinfection was now generally regarded as a delusive dream. The management of pneumonia was not greatly influenced by the recognition of the diplococcus, though this was important as sustaining the theory of a specific infection, and thus leading us to look behind the merely local condition. In tuberculosis of the lungs the detection of the bacillus gave precision to the diagnosis and emphasized the necessity for providing in every possible way for improving the nutrition; but as yet it pointed to no specific treatment, and he could not say that it materially influenced his management of the disease. Its influence upon prophylactic measures, however, was of the greatest importance.

The same remarks would apply to the Klebs-Löffler bacillus of diphtheria. Before its discovery the conviction had been general that there was a specific element of infection in or beneath the membrane, and measures perhaps quite as efficient as those now in use had been employed to destroy the infectious material and prevent its dissemination. He did not know that his selection of disinfectants was influenced by any peculiarity of this special microbe. In cholera he readily conceded the great value of bacteriological research in fixing the diagnosis and pointing out methods of prevention.

In various manipulations included in the office-work of the physician, such as the examination of the different mucous canals, the introduction of the catheter, etc., the knowledge of the existence of germs, and of the evils that may follow their implantation, exacted from every one the most scrupulous cleanliness of hands and instruments.

Influence upon the Clinical Work of the Profession at Large.

Dr. Alfred L. Loomis said he supposed he was expected to give his ideas from the standpoint of the consultant. When the microbic etiology of disease was beginning to be accepted by the profession, but before it was generally accepted, he found that there were a large number of practitioners who readily gave it credence and believed that the only way to treat infectious diseases was to destroy the microbe which produced them. Hence they were in the habit of introducing into the system different germicides either through the lungs, by inhalation, or through the stomach or by the skin. The idea of destroying or rendering inoperative the specific microbes was most prominent, perhaps, with those who believe in antiseptic inhalations and he rarely saw cases of pulmonary disease (especially tuberculosis) in which some form of antisepsis was not employed by inhalation. At that time he was a looker-on and was not willing to interfere with the plans of treatment and modes of practice which he was constantly meeting with; but, after watching for some time the action of these plans, and especially the results which were produced by inhalation, he came to the conclusion that none of the germicides thus employed had any influence upon the microbes themselves and that if there was any change produced in the system, it was due merely to the anæsthetic effect of the agent used.

As the profession came to know more of the life history of the germs and as they came to know more of the manner in which the latter acted under these different agents, he found that gradually most were loosening themselves from these ideas, and that the theory of the germicidal properties of such agents was gradually being abandoned. Intelligent practitioners became more and more of the opinion that if we are to fight successfully this league of microbes, we are to do it by increasing cell activity. As we now treated our patients, it seemed to him that the profession was going back to the restoration method of treatment which was formerly in vogue, and it also seemed quite evident that the different methods which we are employing to-day to combat these infectious diseases have that end in view, and that while we perhaps understand the action of such plans of treatment better than we used to, still they are the same plans as of old.

We fed our patients; we cleansed our patients; we gave them fresh air; we filled them with tonics and cod-liver oil; we advised change of climate — not with the idea of destroying the germs, but for the purpose of furnishing the individual with a soil which shall resist the action of these germs. And as he looked at it in meeting his fellow practitioners, the more he was convinced that the great benefit which the study of bacteriology has done to the profession, is in the prevention of disease. As Dr. Walker had said, we were becoming more careful as to the manner in which we do our everyday work, more careful in our intercourse with our patients, so that we shall come to them clean-handed.

Character and Permanence of its Effect upon Therapeutics.

Dr. Wm. H. Thomson said that the principle based on bacteriology which had most effect on therapeutics was that practically no decomposition of organic tissues or fluids occurs without the agency of micro-organisms, and that by the activity of these organisms many products are formed out of the tissues or fluids acted upon which may be locally irritant or generally poisonous. Hence, his treatment of every form of mucous catarrhal inflammation was largely based upon the use of supposed antiseptics, and the results of the employment of such agents had seemed to be beneficial in the following cases:

(1) Nasal catarrh he had treated for nearly three years, with apparently better results than before, by insufflation twice or three times a day with aristol, and latterly also with camphor. For ten years previously his usual method of treatment was insufflation of subnitrate of bismuth, either alone or with small proportions of thymol. Sometimes, in connection with the bismuth insufflations the patient was directed to smell a few drops of carbolic acid and aqua ammonia in alcohol sprinkled on a handkerchief.

(2) The treatment of gastric catarrh, and ulcerative affections of the stomach by gastric lavage was based on the same principle. Medicinally, five grains of resorcin in solution an hour after meals and at night was his favorite remedy in the same conditions, and this also was based purely on antiseptic principles.

(3) Ptomaines were of organic origin, while leucomaines were merely the result of chemical processes. Ptomaines were the product of decomposition; leucomaines, of retrograde metabolism. Therefore, it was in the gastro-intestinal tract that we had the chief source of ptomaine poisoning. It was to ptomaine poisoning, in his opinion, that the most frequent excitants of the symptoms of functional neuroses were due, such as intermittent neuralgias, convulsions or disorders of innervation marked by more or less intermittent paralytic or depressed conditions of nervous functions. The symptoms due to organic nervous lesions, on the other hand, were never truly intermittent. Its chief reliance, therefore, in the treatment and in the prevention of functional nervous diseases was in the regulation of the diet so as to obviate particular decompositions in the gastro-intestinal tract, and, in the second place, the employment of certain supposed antiseptics. Subnitrate of bismuth and salicylate of sodium were very frequent ingredients of his prescriptions for such patients. He also often used salol, naphthol, and similar drugs of kindred action in connection with the latter. He constantly made use of these remedies in cases of migraine, of epilepsy, and of hysteria, besides in peptic asthma, in peptic insomnia, and in melancholia accompanied by a quick pulse. He could not but regard the results of such an employment of antiseptics as an improvement on the former exclusive reliance on so-called nervines, and so far, therefore, as illustrative of the bearing of bacteriology on therapeutics.

(4) He thought the use of salol and of antipyrin beneficial in diabetes mellitus, as preventives of autoxæmia by a local action in the intestine.

(5) Intestinal antisepsis was a prime indication in the treatment of typhoid fever. His measures, therefore, were large mercurial purgatives in the first ten days of the fever, with forty to eighty grains of subnitrate of bismuth in the twenty-four hours, in connection with pepsin (itself also an antiseptic) and lime-water in equal parts with the staple febrile food, milk. Under this treatment tympanites was, in his experience, rare, and diarrhœa easily checked, if it occurred. What was true of febrile diarrhœa was equally applicable in the treatment of ordinary diarrhœa, whether acute or chronic, namely, that intestinal antisepsis was a prime indication, taking precedence of all other indications for treatment. The natural secretions of the intestine were themselves powerful antiseptics, and hence many cases of intestinal flux were to be attributed to their deficiency. They should, therefore, be

restored as soon as possible; but, in addition, antiseptic remedies should be regarded as more curative of such derangements than opium or astringents. In dysentery naphthaline had proved beneficial in his hands, along with the resin of turpentine in pill form; while locally the principle of lavage was of decided service. In chronic dysentery it was his constant practice to prescribe large enemata with oil of peppermint to irrigate the lower bowel after every movement.

(6) On the same principle, he now prescribed but few medicines in the treatment of cystitis; relying chiefly on ounce injections into the bladder, from a Politzer bag, of a solution of one-half to one grain of resorcin with three grains of boric acid to the ounce of water, till the water from the bladder was clear.

(7) As a general practitioner he had his proportion of cases of skin diseases, and antiseptic applications, used as such, were here his main reliance.

(8) In diseases of the lungs and air-passages the indication for disinfecting the purulent discharges was always constant, and were it in these affections alone that bacteriology directed our therapeutic aims, it would still remain as a most marked illustration of the place which the rôle of micro-organisms in disease assumes in our principles of treatment. He thought, however, that he had adduced enough instances to show that to bacteriology we owe the greatest and most operative influence in shaping the medical practice of our day.

DR. S. BARUCH expressed his scepticism in regard to the practicability of intestinal antisepsis, except possibly in the case of summer diarrhœa in infants and young children, and made some additional remarks which were in the main in accordance with the views given by Drs. Loomis, Smith and Walker.

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Recent Literature.

A Handbook of Hygiene and Sanitary Science. By GEORGE WILSON, M.A., M.D., F.R.S., Edinburgh. Seventh edition. Philadelphia: P. Blakiston, Son & Co. 1892.

Dr. Wilson has performed a useful service to the cause of public health in preparing a new edition of his well-known work. Very much of the present edition has been carefully revised and rewritten, and about 200 pages have been added, including two chapters on Climate and the Disposal of the Dead.

The introductory chapter treats of the general subject of Public Hygiene and Preventable Disease. The following excellent table shows the diminution of the death-rate in England coincident with the operations of the Public Health Acts.

		Years.	*Mean Annual Death-rate per* 1,000.
Public Health Act, 1872	. .	Ten yrs., 1862-71	22.6
" Act, 1875	. .	Four yrs., 1872-75	21.8
" "	. .	Five yrs., 1876-80	20.8
" "	. .	Five yrs., 1881-85	19.3
" "	. .	1886	19.28
" "	. .	1887	18.8
" "	. .	1888	17.83
" "	. .	1889	17.9

In the chapter on Food, new tables are presented, giving the relation of food equivalents to work, together with a *résumé* of the diseases which render the flesh of animals unfit for human food.

The chapters on Ventilation, Heating, Air, and Water Analysis have been carefully revised.

In the chapter on Communicable Diseases, an attempt has been made to summarize the most recent advances in bacteriological research, a task which was made easier by the reports of the proceedings of the Congress of Hygiene which met at London in 1891.

The chapter on Disinfection was carefully revised by Dr. Parsons of the Local Government Board of England. Prominence is given to the subject of disinfection by heat in properly constructed forms of apparatus. It does not appear, however, that any successful process has yet been devised for disinfecting rags when tightly compressed in bales.

The chapter upon Vital Statistics is worthy of careful study, and presents valuable information upon this too-much neglected subject.

The concluding chapter contains a complete summary of the sanitary laws of England, with valuable comments upon the duties of health officers, inspectors, and other sanitary officials.

The appendix contains many valuable tables and formulæ, with questions for the examination of health officials. The following are samples of questions presented:

> Are you of opinion that a running stream of water which has become unfit for drinking purposes on account of the admission of town sewage into it, may, after a flow of some miles, again become fit for drinking, and that it may be safely used as a town supply? Give reasons for your opinion *pro* or *con*.
>
> Give a short account of the diseases which have been known to result from eating the flesh of the pig.
>
> How are death-rates calculated? If you know the population and death-rates of two districts, how can you calculate the death-rate of the combined district?

Book on the Physician Himself and Things that Concern his Reputation and Success. By D. W. CATHELL, M.D. Tenth edition. Philadelphia: The F. A. Davis Co. 1892.

The fact that this unique book has reached its tenth edition in less than the same number of years is strong proof that the sterling worth of its precepts and at times somewhat homely teaching is being appreciated by those into whose hands it falls. While it is modestly dedicated "to the younger numbers of our profession, and also to the older ones who have paused at less than the average degree of success in life" it contains sentences, paragraphs and chapters which even the most successful practitioner might read and digest with profit. And although it is equally true of this book as of others, that there are many statements of the writer in which the reader cannot fully agree, the proportion of such statements is much smaller than the average. In order to weigh correctly its teachings, the author very properly says, the book should be read through from cover to cover.

The position which the physician should take, and the manner in which he should comport himself in all the various relations of his varied and busy life, are set down in clear and definite terms, full of worldly wisdom. The quaint, rather old-fashioned mode of expression used by the author appears to add rather than detract from the force of his utterances. The use of names as in Bunyan's "Pilgrim's Progress," to designate prominent faults of character as, for example, "Prof. Hasty, Dr. Vinegar, Dr. Shallon, Dr. Dragg, Dr. Lazi," etc., add life and color to many of the author's statements. The publishers' work is well done; the print is large and clear, and the paper is good. Altogether, the book is very readable and enjoyable.

A Handbook on Pathological Anatomy and Histology. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D. New York: William Wood & Co.

The book is divided into four parts. In the first part is described the method of making post-mortem examinations, and of preserving and examining diseased tissues; in the second part, general pathology, including tumors; in the third part, the pathological anatomy of the organs; and in the fourth part, a description of the lesions in general disease, in poisoning and in violent deaths. One of the most valuable chapters in the book is that relating to the animal and vegetable parasites.

We have little hesitation in saying that this book will prove the most valuable work which has appeared in English, to both the medical student and the practitioner. It is written throughout in a clear and concise manner. The value of a book on pathological anatomy depends largely on the plates which are given. In this book many of the plates are excellent. Others, while showing evidence of a great deal of work in the preparation, give but little idea of the actual appearance when under the microscope, and are misleading. The reproduction of the photo-micrographs in the book is exceedingly poor. We think that the time has not yet arrived when this method can be used for illustration, although its results are valuable to the more advanced students. Exception might be taken to some of the ideas expressed in the book. We do not think, for instance, that a sharp distinction can be made between what the authors call cellular and exudative inflammation. In the article on inflammation, no sharp distinction is made between the polynuclear leucocytes and the cells of the granulation tissue. We do not think that the distinction between croupous and diphtheritic inflammation can be given up, and the latter term used only in describing the lesions of diphtheria. The article on tumors is an excellent one, although a little more space might have been given to their consideration.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. By W. Hale White, M.D., F.R.C.P., Physician to, and Lecturer on Materia Medica and Therapeutics, at Guy's Hospital, London, etc. Edited by Reynold W. Wilcox, M.A., M.D., LL.D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital, etc., etc. Philadelphia: P. Blakiston, Son & Co. 1892.

The author makes some good suggestions in this work, but in his attempt to touch upon so many drugs in a limited space, misses the clearness of many of the smaller and certainly the thoroughness of the larger books on these subjects. Nor is the writer altogether happy in his classification. To separate two remedies so similar in their action and uses as digitalis and strophanthus simply because one of them is not officinal, is allowing a pharmacopœial question to control in therapeutics. This is not well judged as the pharmacopœia is made to advance, not hinder, therapeutic ends. Further to class opium and morphine as hypnotics is pernicious teaching. These questions of classification are of importance, especially to the student, as a good arrangement assists him greatly.

The work of the American editor has been well done and note has been made of the most recent remedial agents.

Notes on the Newer Remedies, Their Therapeutic Applications and Modes of Administration. By David Cerna, M.D., Ph.D., Demonstrator of Physiology in the Medical Department of the University of Texas, Galveston; Formerly Assistant in Physiology, Demonstrator of, and Lecturer on, Experimental Therapeutics in the University of Pennsylvania, etc. Philadelphia W. B. Saunders. 1893.

This small book is intended to afford physicians and others information about the newer remedies which are offered to the profession in such large numbers. The arrangement is an alphabetical one, and the author gives briefly and well something of the sources, properties, uses and administration of several hundreds of the newer drugs; this word is more applicable than remedies, as many are not entitled to rank as the latter. The book bears evidence of care and labor; its value would however be enhanced, had the writer pointed out the danger accompaning the use of certain drugs. Many of the more useful remedies mentioned in this volume may be found in the later works on therapeutics.

A Text-Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment on a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Third edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co. 1892.

It is unnecessary to say much about the third edition of a book that is so well known and so much appreciated as this one. Its information is accessible, but is not, of course, as complete as that to be found in larger works on this subject. As in the previous editions, too little space has been devoted to foods for the sick. A more adequate treatment of this subject would be desirable. The present work contains an account of a number of recent drugs, most of which are mentioned only to be condemned or but faintly praised.

First Lines in Midwifery. By G. Ernest Herman, M. B. (London), F.R.C.P. 16mo, pp. 191. Philadelphia: Lea Brothers & Co.

This little book is intended for the use of midwives, and for the guidance of medical students in the care of normal cases. The author is the well-known lecturer on obstetrics to the London Hospital, and he has produced a manual which will prove extremely useful to those for whom it has been prepared. The book is replete with practical advice, and no student can go wrong who follows its teachings. We are sorry the author has not seen fit to adopt the obstetrical nomenclature which was approved by the International Medical Congress in Washington several years ago, and which it was hoped would be used by all teachers. It is confusing to students to find a different nomenclature in the various books they use, and it would be a great gain if the classification of fœtal positions reported by Professor Simpson and adopted by the above-mentioned Congress could be universally employed. Much stress has been laid on the now generally approved aseptic management of labor; and it is clearly pointed out in what complications the student should send for assistance. The book is well made, and fully illustrated.

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CONTROL OF QUARANTINE.

IT is futile and unprofitable to attempt to forecast the ultimate results of quarantine legislation at Washington. In a few weeks we shall know whether for this possibly eventful summer, we are to make the most of existing arrangements, or are to be aided or hindered by new national legislation. We think there is no doubt that the most intelligent and unprejudiced *medical* opinion favors federal control of the subject under suitable conditions, as witness the resolutions passed by the councillors of the Massachusetts Medical Society already presented in both houses of Congress, and the memorial to that body prepared by the Committee of the New York Academy of Medicine appointed at a meeting of that body last week. Both of these appeals are published in another column. The New York memorial has been endorsed by a committee of the Section on Hygiene of the Suffolk District Medical Society

For the United States much of the protective work must and can be done on the other side of the water. No hard and fast rule for detention of persons or effects on this side can be advantageously laid down. Good judgment and discretion must be applied to each individual problem as it presents itself. In other words, quarantine to-day means supervision, with disinfection or detention when indicated, rather than detention without supervision or appeal as formerly.

Central control and' responsibility, uniformity of administration, great resources, organized services at home and abroad — these are the advantages of national quarantine. They may, it is true, all be rendered valueless temporarily, by individual incapacity, just as local quarantine may be rendered highly satisfactory as far as it can go, by individual vigor, skill and tact.

We think, however, that such incapacity — whether from inexperience or inability — would be less frequently exhibited and less tenaciously protected under federal than under State or civic control.

Whatever may be the outcome of present discussions or differences of opinion, we hope the result may, at least, not be a divided responsibility. Whether the measures adopted in the months near at hand be wise or foolish, let us know whose the measures are and whose is the execution.

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MODERN (?) VIEWS OF CHOLERA.

Under the title of "Observations on Cholera and Quarantine: a National Quarantine implies National Seclusion," Dr. C. W. Chancellor, Secretary of the State Board of Health of Maryland, has written a monograph which, had it borne the date of 1792 instead of 1892, would have been quite in keeping with the prevailing belief of the last century with reference to the transmission of infection in cholera. The author's views upon this point are illustrated in the following expressions: "So slowly does the cholera spread from person to person (except where there is an epidemic constitution of the air) that there were only 21 deaths in New York from this disease up to July 8, 1866, although there were frequent arrivals of infected ships all the time." Again: "The inhabitants of Hamburg . . . found it suddenly appear in the city, rising as it were from the ground, and attacking all sections of the city, and all classes of the community simultaneously, without the sick having had intercourse one with another."

But cholera does not spread slowly from person to person, nor is there any evidence that it "rises from the ground," like the mythical cholera dragon of Munich, which was believed by the inhabitants to have emerged from the soil and polluted the wells. An infected steamer loaded with emigrants touched at Quebec, June 7, 1832. On June 8th, the following day, the first case occurred in Quebec; and within two weeks more than a thousand deaths had occurred in that city.

Again: the first case in Hamburg in the recent epidemic was reported August 16, 1892. On the 3d of September following (less than three weeks later), there had been 10,151 cases, with 4,330 deaths in Hamburg. This, certainly, was not very slow progress.

Dr. Chancellor cites the recent experiment of Pettenkofer, who swallowed a quantity of *comma bacilli*, and "experienced no inconvenience except colicky pains, and a moderate diarrhœa two days after; the stools were found to be swarming with comma bacilli, yet there were no symptoms of Asiatic cholera." Colicky pains, diarrhœa, stools swarming with comma bacilli! What better train of symptoms is wanting to make out a case? The experimenter did not die, to be sure; but a very large percentage survive, when attacked with cholera. Of the Hamburg victims, nearly sixty per cent. survived.

The author gives almost no prominence to one of the most common modes of spreading cholera; and that is by means of *polluted water-supplies*, a mode of transmission acknowledged by the best-known authorities.

The British Local Government Board emphasized the danger of water-pollution with reference to the spread of cholera as follows, in its cholera circular of July 5, 1884:

> [illegible], there is the danger [illegible] water-supplies, which are in any way (even the slightest degree) tainted by house refuse or other like kind of filth . . . a danger which may [illegible] but perhaps often repeated in the [illegible] at the pump or well of a private house, or, on a large or even vast scale in the source of public water-works.

The German Government also endorsed the same views in the following terms, contained in the Circular of the Imperial Board of Health of July, 1892:

> (6) All the water that can by any possibility have become polluted by excrement, urine, kitchen waste or other foul material, should be carefully avoided. Water from an inhabited watershed is suspicious, as is also water from swamps, ponds and streams or rivers, because these are likely to receive drainage from impure sources; especially dangerous is a water which can have received the discharges of the sick, no matter how remotely. In this connection especial care must be taken that water in which the garments of the sick or their cooking utensils or table-service have been washed shall not obtain entrance to a water-supply directly or indirectly, by being poured upon the surface of the soil in vicinity of the water. The best water is furnished by deeply driven pipe wells.
>
> (7) If it is not possible to get a water above suspicion, the water should always be boiled and only boiled water should be used.
>
> (8) The observations above, made in respect to drinking-water, apply also to all water used for domestic purposes, because infectious matters existing in waters used for washing dishes and household utensils, for washing and cooking food, for washing and bathing the body, may thus be brought into the human system.

The two questions relative to the prevention of cholera, that is, quarantine and local sanitation, cannot properly be set up in opposition to each other, but must both be employed; first, a reasonable course of restriction should be exercised at the point of departure and the point of arrival for preventing the introduction of infection from abroad; and, secondly, the most thorough and perfect local sanitation should be required everywhere to prevent infectious diseases from gaining a foothold among us, if accidentally introduced.

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THE INFLUENCE OF MAGNETS UPON THE BODY.

An interesting series of experiments undertaken to find out what effect magnetism has upon the nervous system is reported by Peterson and Kennelly.[1] The very powerful magnets of the Edison laboratory in New Jersey were used, at first upon separate tissues, then upon living animals and man. Iron very finely divided was influenced, hæmogoblin blood and vibrating ciliæ were not. A dog and a boy were each placed in a cylinder two feet in diameter upon which a set of very powerful field-magnets converged, but in neither case was there the least effect produced. The head introduced into the field of a powerful electro-magnet was also not in the least affected, and the person was unconscious whether the current was turned on or off or rapidly alternated.

The authors conclude that the human organism is in nowise appreciably affected by the most powerful magnets known to modern science; that neither direct nor reversed magnetism exerts any perceptible influence upon the iron contained in the blood, upon the circulation, upon ciliary or protoplasmic movements, upon sensory or motor nerves, or upon the brain.

In view of these experiments the nonsense which we sometimes hear concerning animal magnetism and different occult influences produced by the aid of magnetism upon the human body and mind by what must be immeasurably weaker magnetic force, becomes apparent.

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MEDICAL NOTES.

CHOLERA IN HAMBURG — On Sunday last four new cases of cholera and two deaths were reported in Altona.

THE QUARANTINE BILL. — On Monday the bill granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service was taken up in the Senate, the question being on the substitute reported from the Senate Committee on Epidemic Diseases. The Senate substitute was agreed to, and the bill as amended was passed.

A DINNER TO DR. JENKINS. — A complimentary dinner has been tendered to Dr. W. T. Jenkins, Health Officer of the Port of New York, by friends and admirers.

THE NEW YORK THERAPEUTIC REVIEW is the title of a new medical monthly, beginning with the January issue. It is edited by Dr. Paul Gibier, with the collaboration of several well-known authorities on different subjects. It is to offer articles on different branches of therapeutics, especially in the lines indicated by Pasteur, Koch, Brown-Sequard, Lister and others.

STATUE TO SIR RICHARD OWEN. — At a meeting held on January 23d, at Burlington House, under the presidency of the Prince of Wales, it was decided to erect a memorial to the late Sir Richard Owen. The memorial is to take the form of a marble statue to be placed in the hall of the Natural History Museum.

AN ANTI-HOOP-SKIRT BILL has been presented to the Minnesota Legislature containing the following: "It will be unlawful for any person to manufacture or sell, or to offer for sale or use, or to permit the manufacture, sale or use of any hoop-skirt or hoop-skirts, or anything like thereunto, within the limits of Minnesota." This was due to a rumor that the crinoline was soon to become the fashion; but as the rumor is now said to be unfounded, the bill will remain with the Committee on Public Health for the present.

COMPULSORY NOTIFICATION OF CHICKEN-POX. — One of the medical officers of health, of England, has addressed a letter to the Local Government Board, advising that chicken-pox should be included in the list of diseases which are subject to compulsory notification. The reasons given for this recommendation are that the doubtful symptoms of chicken-pox, which often cause much trouble in consequence of the difficulty of diagnosis, would then be brought under the scrutiny of the medical officer of health who would assist in determining whether a suspicious case should be dealt with as small-pox or not.

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[1] New York Medical Journal, December 31st.

NEW ENGLAND.

The Classes in the Harvard Medical School. — The Annual Catalogue shows that there are 442 students in the school, divided as follows: graduates 23, fourth class 24, third class 99, second class 122, first class 174. The entering first class is the first one which will have the compulsory four-years' course. Of the 174 members, 20 hold the degree of A.B., Harvard; 27, A.B. from some other college; and five some other degree.

Massachusetts Hospital for Dipsomaniacs and Inebriates. — The trustees of this institution have notified the Governor that commitments may probably be made on February 6th.

Proprietary Medicines Containing Poison. — A bill has been introduced in the Massachusetts Legislature, and argued in committee, requiring that all secret proprietary medicines containing certain poisonous substances shall be labelled with the name, quantity and antidote of such poisons. There are unfortunately too many opponents of such a bill to make its passage probable.

Advisory Health Officers. — The attention of readers in Massachusetts is called to the terms of the petition to the State Legislature in favor of bills for the appointment by the governor of health officers in different sections of the State, as inspectors and advisors to the local health boards in sanitary matters; the transfer to the State Board of Health of the registration of vital statistics; and the immediate reporting to that Board of all cases of diseases dangerous to the public health. Whatever action may taken by the National Government, now is the time to secure our own premises by every sanitary precaution in our power. Let us keep infectious diseases out if possible; but let us see to it that if admitted, whether by our own fault or that of our neighbors, they find no congenial soil in which to develop and establish themselves. Exclusion and suppression are twin safeguards which should supplement each other.

The Prevention of the Pollution of Streams, Water-Courses and Ponds. — There will be a hearing Friday, February 10th, before the Committee on Public Health of the Massachusetts Legislature, on a bill accompanying the petition of Edward W. Emerson and others, of Concord, for further legislation for the prevention of the pollution of streams, water-courses and ponds. The following are the provisions of the bill:

Section 1. The State Board of Health shall have the general supervision of all streams, water-courses and ponds with reference to their purity; and shall have authority to examine the same from time to time, and inquire what pollutions exist, and what are their causes.

Sect. 2. No person or corporation shall pollute any stream, water-course or pond by discharging into the same either directly or indirectly, manure, excrement, garbage, sewage, or in any other way.

Sect. 3. Any court having equity jurisdiction may, in term time or vacation, on the complaint of the State Board of Health and after such notice as the court shall deem reasonable, proceed to hear and determine the matter of said complaint. The action of the court herein provided for shall be in accordance with the ordinary proceedings in courts of equity, and the court may make any order or decree for the prevention of such pollution as shall be shown to exist, that the case may require, and may enforce the same by injunction or other appropriate remedy.

Sect. 4. This act shall not be construed to impair or repeal any existing provision of law in regard to the pollution of springs, streams, ponds or water-courses, or the prevention of such pollution, or the powers and jurisdiction of any court relating to the prevention of such pollution; nor shall it be applicable to the Merrimac or Connecticut Rivers, nor to so much of the Concord River as lies within the limits of the city of Lowell.

Scarlet Fever carried by Kindling-wood. — There is a report in New Haven that several cases of scarlet fever can be traced to kindling-wood made from an old house in which six cases of the disease had occurred, and which was torn down and sold for kindling-wood.

NEW YORK.

Typhus Fever. — Of late typhus fever has again increased to some extent, and the cases have occurred in more widely scattered sections of the city. Up to February 3d the total number of cases reported since the beginning of the outbreak was 223, and the number of deaths, 64. In order to prevent the hospital at North Brothers Island from becoming over-crowded cases occurring at Bellevue Hospital and in the institutions on Blackwell's Island are now being treated at Bellevue and on Blackwell's Island, and a number of tents have been erected for the purpose.

The Nursery and Child's Hospital has netted the handsome sum of $11,500 by the annual charity ball given for it in January.

The Female Hippopotamus at the Central Park Menagerie, which shows remarkable fecundity for an animal in captivity, has just given birth to its third offspring. The first was born in 1889, but died after four days, and the second, which is now a fine specimen of its race, was born in the autumn of 1890. It is announced that "mother and child are both doing well."

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Miscellany.

MEASURES TO INCREASE THE EFFICIENCY OF PUBLIC HEALTH ADMINISTRATION IN MASSACHUSETTS.

Petitions will shortly be presented to the Massachusetts Legislature asking for legislation to improve the efficiency of the public-health administration in that Commonwealth in accordance with the following measures:

(1) By the transfer of the supervision of the registration of vital statistics to the State Board of Health.

(2) By providing for the immediate reporting to the State Board of Health of all cases of diseases dangerous to the public health.

(3) By providing for the division of the State into suitable districts, in each of which a medical officer shall be appointed by the Governor, such officer to act as sanitary inspector and advisor for the local authorities, and from time to time report his doings to the State Board of Health.

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RESOLUTIONS OF THE MASSACHUSETTS MEDICAL SOCIETY TOUCHING NATIONAL QUARANTINE AND A NATIONAL SANITARY AUTHORITY.

At a meeting of the Councillors of the Massachusetts Medical Society, held on the 1st inst., the following resolutions in accordance with the recommendation of a committee of the Suffolk District Medical Society were passed:

It is advisable that a Central National Board of Health with efficient authority should be established, with all necessary control over immigration.

It is highly important that a system of National Quarantine be created, which shall have absolute control over all ports and other entrances to the United States.

On the recommendation of the Committee regarding the Creation of a Cabinet Officer of Public Health, Dr. H. P. Walcott, Chairman, it was resolved:

That the Congress of the United States be requested to create a National Sanitary Authority which shall be independent of the Army, the Navy or the Marine Hospital Service.

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FEDERAL QUARANTINE.

The following memorial in regard to National Quarantine has been presented to Congress by the Committee of Twenty-One lately appointed by the New York Academy of Medicine:

Representing the New York Academy of Medicine, and under its instruction, we have requested of your honorable body a brief hearing in the matter of the establishment of a National Quarantine.

We appreciate the earnest and sustained attention which you have given to this problem, the immediate and wise solution of which is of such vital importance to the personal and commercial interests of all the States which this Congress represents.

We realize that the responsibility of protecting this country from an impending calamity, so far as this can be done by judicious legislation, rests wholly with you, and that the urgency and weight of that responsibility cannot easily be overestimated.

We know that the time is brief in which efficient measures can be taken, and that it is important at this late day not to add to the difficulties which beset legislative action.

We do not think it necessary to rehearse to your honorable body in detail the arguments which have led to our conviction of the importance of a comprehensive National Quarantine. The uniformity of system and practice which would be assured by a National Quarantine, the large and varied resources, both in trained men and in material, which would be available, the power of rapid concentration of forces at a point of threatened invasion by infectious disease, the avoidance of wide-spread apprehension and panic which a national administration would favor, the full and direct command of [illegible] promise of international coöperation, the concentration of responsibility in a single administrative body, the equable distribution of the expenses of a protective agency in whose benefits all parts of the nation share, the removal of disastrous conflicts in authority and the suppression of petty local political and pecuniary ambitions now often openly pursued regardless of the public weal, — these are hints of some of the more manifest advantages which a full national control of quarantine seems to promise.

We come to you then, gentlemen, not with arguments, for we feel that already the subject has received your careful attention in all its many bearings; we do not come at this late day to urge details, for that we know it to be your special duty to arrange; but we do feel strongly, that to experiment with varying and variously managed local quarantine establishments, in the face of a threatened epidemic of Asiatic cholera and typhus fever, is only to court disaster.

We therefore come to you, as medical men, simply to express, and express most earnestly, our conviction, that whatever form your legislative action may assume, its outcome should be [illegible] *and power as constitutional limitations will permit.*

We believe that so, and so only, can threatened suffering be most surely averted, life spared, commercial interests shielded, and the rights of individuals maintained during the administration of those protective agencies which are evoked for the common weal.

The above memorial has been unanimously endorsed by the Committee on Sanitary Legislation of the Section on Hygiene of the Suffolk District Medical Society.

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MUNICIPAL LODGING-HOUSES IN NEW YORK.

At a meeting of the Section of Public Health of the Academy of Medicine, held February 1st, the necessity for enforcing the law providing for the establishment of municipal lodging-houses was discussed, and a resolution was adopted requesting the Academy at large to use its influence in having the measure carried out.

The Grand Jury for the January term, which was discharged on February 3d, made an investigation of the condition and management of the lodging-rooms connected with the various police precinct station-houses of the city, and has embodied the conclusions arrived at in its presentment to Recorder Smyth. The report states that, owing to the inadequate facilities of the station-houses and the lack of a proper system for the government of the lodging rooms, these places, provided by the Police Department entirely out of motives of humanity, and which are the only refuge of the unfortunate people who use them, are a menace not only to the lodgers themselves but to the members of the police force and the public at large. The lodgers, destitute and homeless, or depraved, diseased and undeserving, are crowded indiscriminately into small rooms, devoid of proper toilet facilities, and are turned out the next morning in the same filthy condition in which they present themselves. The number of such lodgers always increases during the cold weather, and as many as fifty or sixty persons are frequently crowded into a place scarcely large enough for one-fourth of the number. The great majority are vagrants, but many are really deserving people. The report goes on to say that the present laws provide that all persons wandering abroad or lodging in watch-houses, and not giving a good account of themselves, may be arrested as vagrants, and committed to the almshouse or penitentiary for a term not exceeding six months. After a careful consideration of the situation, the Grand Jury arrived at the conclusion that the difficulties of the present system can be remedied by the enforcement of the existing laws. Each applicant for lodging should be questioned as to his means of livelihood, and if his answers should be unsatisfactory, and it appeared that he was a person without visible means of support, he should be taken the following morning before a police magistrate and committed as a vagrant.

The presentment concludes as follows: "We believe it to be a question of serious doubt whether the establishing of free lodging-houses would prove to be beneficial to the deserving poor. Should such public lodging-houses exist they would certainly have a tendency to attract to the city even greater numbers of vagrants than now find lodgings in the police-stations, and, with the regulations hereinabove suggested, we believe that all the necessary accommodations could be afforded to deserving persons, and the unworthy classes summarily disposed of without menace to the public health or security."

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WORLD'S COLUMBIAN EXPOSITION.
THE INTERNATIONAL CONGRESS OF CHARITIES, CORRECTION AND PHILANTHROPY.

Time, Place of Meeting, Object and Membership.

The Congress will meet in the city of Chicago on Monday morning, June 12th, 1893, at 10 o'clock, in a hall to be hereafter announced.

The object of the International Congress of Charities, Correction and Philanthropy is to bring together in the city of Chicago during the time of the World's Columbian Exposition interested persons of all countries to discuss matters charitable, correctional and philanthropic.

The governments of foreign nations, of the United States of America, and of the individual States of the United States, scientific societies, official bodies, and corporations and societies which own or control charitable or penal institutions, or are engaged in any kind of philanthropic work, are invited to coöperate with the committee of organization and to send representatives to the congress. Membership in the congress will be limited to persons bearing credentials from the authorities and organizations herein referred to, and to such private individuals as are interested in charitable and penal work as may be admitted to membership by vote of the executive committee or who may be specially invited by the committee of organization, or the chairman and secretary of a section.

Delegates must present their credentials before registering as members of the congress.

From the obvious necessities of the case, no persons other than those herein specified can be permitted to participate in the debates or to vote on questions before the congress. But a general invitation is extended to all persons who may be interested in the questions discussed to attend the sessions and listen to the debates.

The Work of the Congress.

The work of the congress will be confined to matters germane to the titles of the various sections into which the congress is divided. Each section will have devoted to it one general session of the congress, and will hold, besides, five sectional meetings.

Rules of Order.

English will be the exclusive language of the congress.

Papers may, however, be submitted to the committee of organization in any language, and the committee will, in its discretion, publish complete translations or English abstracts in the proceedings.

No paper will be read at a general session of the congress unless its author is present, except by decision of the Executive Committee. When an author is absent his paper will be read by title and included in the published proceedings in the discretion of the committee of organization, unless otherwise especially ordered.

Not to exceed thirty minutes will be allowed for the presentation of a paper, except by previous arrangement with the committee of organization. In cases where a paper will exceed these limits, and its value will be impaired by condensation, the paper will be received and printed, and the author given time, not exceeding the above limit, in which to present a résumé.

Debaters will be limited to five minutes, and no person will be allowed to speak to the same subject more than twice. This rule may be suspended by a special order.

Sections of the Congress.

I. The Public Treatment of Pauperism.

II. The Care of Neglected, Abandoned, and Dependent Children.

III. The Hospital Care of the Sick, the Training of Nurses, Dispensary Work, and First Aid to the Injured.

IV. The Commitment, Detention, Care, and Treatment of the Insane.

V. The Prevention and Repression of Crime, and the Punishment and Reformation of Criminals.

VI. The Organization and Affiliation of Charities in Countries, States, Cities, Towns and Villages, and Preventive Work among the Poor.

VII. The Introduction of Sociology as a Special Topic of Investigation and Instruction in Institutions of Learning.

Preceding the International Congress, the National Conference of Charities and Correction will hold an historical session, taking the form, largely, of a review of its twenty years' history, and of the progress made in the various departments of charitable and penological work which have been the subjects of its deliberations during that period, opening on Thursday evening, June 8th, and closing Sunday evening, June 11th.

The National Prison Association will also hold its annual meeting during the week preceding the International Congress.

Section III, on the Hospital Care of the Sick, the Training of Nurses, Dispensary Work, and First Aid to the Injured.

This Section will hold five sectional meetings of about two hours each, commencing June 12, 1893, and will also have charge of one of the general sessions of the Congress, namely, that held on the morning of June 14th.

It is desired that this shall be a truly international gathering for conference on the subjects allotted to this Section, and all who are interested in hospitals, in training of nurses, in dispensaries, or in first aid to the injured, are cordially invited to be present, to contribute papers, and to take part in the discussions.

The papers and proceedings will probably be printed as a separate volume, and it is hoped that this will represent the best methods and the best work in each of these departments in all parts of the world.

The following are suggested as subjects for special consideration in papers to be prepared: Hospital Organization — Governing Bodies — Relations of the Medical Staff and of Nurses' Training-Schools; Hospital Finances — Means of Support — Mode of Keeping Accounts — Cost; Plan and Construction of recently built General Hospitals, embodying the latest improvements; Relations of Hospitals to Increase of Knowledge; to Medical Education, and to the Medical Profession — Hospital Records, Statistics and Reports; Pay Patients in Hospitals; Isolating Wards and Hospitals for Contagious Diseases; Hospital Diets, Dietaries, Kitchens, etc.; Hospital Amphitheatres and Operating-Rooms; Hospital Laundries and Disinfecting Establishments; Army and Navy Hospitals — Emergency Hospitals in Time of Epidemics — Temporary and Movable Hospitals; Small and Special Hospitals, Cottage Hospitals, School Hospitals, Private Hospitals, Sanatoriums, etc. — Convalescent Hospitals, and what to do with Incurables; History and Present Condition of Hospitals in the large cities; Training Schools for Nurses ([illegible]); Dispensaries — Relations to the Public and to the Medical Profession — Dispensary Records; First Aid to the Injured — Associations for best means of popular instruction in and its place in General Education.

Persons desiring to present papers, or to share in the discussions of this Section, are requested to communicate with the Secretary at once. The period of time allotted for the preparation of the programme is necessarily brief, and it is essential that all who are willing to assist in this work should act promptly.

John S. Billings, M.D., *Chairman*,
Henry M. Hurd, M.D., *Secretary*,
Johns Hopkins Hospital, Baltimore, Md.

Sub-Section on the Training of Nurses.

In accordance with the general programme of the Section, nurses will take part in the general session and in two sectional meetings, and will hold in addition three separate meetings — June 13th, 14th and 17th.

For these three separate meetings papers on subjects of special interest to nurses will be prepared and discussed. The following are suggested as subjects to select from: Training-Schools in England and America; Proper Organization of Training-Schools; Nursing in Infirmaries and Almshouses; Nursing of the Insane — Obstetric Nursing; Nursing of Infectious Diseases; Nursing in Senatoriums and Home Hospitals; Private Nursing. Nursing by Religious Orders; Work of Graduate Nurses.

All communications relating to this portion of the work of the Section should be addressed to

Miss Isabel A. Hampton, *Chairman*,
Johns Hopkins Hospital, Baltimore, Md.

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THERAPEUTIC NOTES.

Asaprol. — Stackler[1] describes asaprol, a calcium salt of naphthol and monosulphonic acid, occurring in the form of a white powder, very soluble in water and alcohol. The tests for its presence in the urine are the same as those for naphthol. It is a toxic to rabbits in the proportion of fifty centigrammes to each kilo of body weight. Smaller doses are well borne. It has been used in two cases of influenza, with high temperature and pain, with great success. It is also useful in rheumatism, gout, asthma, various infective conditions, tonsillitis, etc. Gradually increasing doses are recommended for adults, two grammes on the first day, three on the second, and four on succeeding days, to be again gradually reduced. It should be given with plenty of water to encourage diuresis. It is incompatible with alkaline iodides, sulphates and with most of the alkaline salts.

The Creasote Treatment of Pulmonary Tuberculosis. — Albu[2] concludes that creasote produces no direct influence upon the tuberculous process in the lungs, although it is a useful remedy in the symptomatic treatment of the disease — probably better than any other. In most cases it acts as a good expectorant; in some cases as a stomachic; as a rule, it appears to exercise a tonic influence. In a series of experimental investigations it was found that no change in the virulence of the sputum manifested itself in persons that were taking creasote in full doses.

METEOROLOGICAL RECORD,

For the week ending January 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer: Daily mean.	Thermometer: Daily mean.	Thermometer: Maximum.	Thermometer: Minimum.	Relative humidity: 8.00 A.M.	Relative humidity: 8.00 P.M.	Relative humidity: Daily mean.	Direction of wind: 8.00 A.M.	Direction of wind: 8.00 P.M.	Velocity of wind: 8.00 A.M.	Velocity of wind: 8.00 P.M.	Weather.*: 8.00 A.M.	Weather.*: 8.00 P.M.	Rainfall in inches.
[illegible]	[illegible]	18	27	9	[illegible]	[illegible]	[illegible]	N.W.	S.W.	11	[illegible]	O.	C.	
M..[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	86	S.	S.E.	2		G.	N.	0.01
[illegible]	30.12	[illegible]	[illegible]	[illegible]	94	[illegible]	[illegible]	N.W.	S.W.	1		[illegible]	[illegible]	
W..[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.			N.	C.	[illegible]
T..26	30.11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.W.	1	13	O.	O.	
F..27	[illegible]	28	[illegible]	[illegible]	60	[illegible]	[illegible]	W.	N.	[illegible]	10	F.	C.	
[illegible]	30.54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	N.W.	12	7	O.	N.	
☞	30.20	[illegible]	[illegible]	[illegible]	[illegible]	70	[illegible]							[illegible]

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 28, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,827,396	829	276	[illegible]	25.80	1.80	[illegible]	1.56
Chicago . . .	[illegible]	[illegible]	[illegible]	14.70	19.99	.78	8.23	2.15
Philadelphia .	[illegible]	469	154	26.61	16.40	[illegible]	[illegible]	3.19
Brooklyn . .	955,333	[illegible]	[illegible]	14.49	[illegible]	[illegible]	6.21	3.22
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	[illegible]	236	71	13.86	17.64	.42	[illegible]	2.94
[illegible] . .	461,139	[illegible]	[illegible]	—	[illegible]	—	—	—
Cincinnati . .	[illegible]	[illegible]	[illegible]	9.70	20.37	[illegible]	2.91	[illegible]
[illegible] . .	281,353	[illegible]	44	12.35	19.00	[illegible]	8.55	—
Pittsburg . .	255,000	[illegible]	[illegible]	14.91	27.69	5.68	2.84	[illegible]
Milwaukee . .	234,440	[illegible]	[illegible]	13.42	15.16	[illegible]	2.44	[illegible]
[illegible] . .	[illegible]	148	[illegible]	6.03	22.11	[illegible]	2.68	[illegible]
Nashville . .	[illegible]	—	—	—	—	—	—	—
Charleston . .	[illegible]	[illegible]	7	—	10.00	—	—	—
Portland . . .	[illegible]	[illegible]	1	[illegible]	[illegible]	—	—	—
[illegible] . .	92,313	39	12	[illegible]	[illegible]	[illegible]	2.56	—
Lowell . . .	82,155	[illegible]	16	13.90	33.36	[illegible]	—	2.78
Fall River . .	[illegible]	[illegible]	12	12.00	32.00	—	12.00	[illegible]
Cambridge . .	74,644	31	[illegible]	[illegible]	[illegible]	—	[illegible]	3.23
Lynn	60,809	17	—	5.88	17.66	—	—	—
Springfield . .	47,052	15	[illegible]	13.33	26.66	—	16.66	[illegible]
Lawrence . .	[illegible]	—	—	—	—	—	—	—
New Bedford .	[illegible]	20	[illegible]	5.00	15.00	—	5.00	—
Holyoke . . .	40,099	10	[illegible]	[illegible]	[illegible]	[illegible]	10.00	—
[illegible] .	32,783	4	[illegible]	—	—	—	—	—
Salem	[illegible]	[illegible]	[illegible]	—	40.00	—	—	—
Haverhill . .	[illegible]	[illegible]	—	—	33.33	—	—	—
Chelsea . . .	29,479	—	—	—	—	—	—	—
Malden . . .	27,252	—	[illegible]	40.00	40.00	—	—	20.00
Newton . . .	26,498	—	—	—	—	—	—	—
Taunton . . .	26,464	13	1	15.38	15.38	—	[illegible]	7.69
Gloucester . .	26,008	1	0	—	—	—	—	—
Fitchburg . .	25,444	12	[illegible]	[illegible]	[illegible]	8.33	25.00	—
Waltham . .	20,942	[illegible]	[illegible]	11.11	11.11	—	—	11.11
Quincy . . .	[illegible]	[illegible]	1	—	[illegible]	—	—	—
Pittsfield . .	18,294	4	0	—	25.00	—	—	—
Northampton .	[illegible]	[illegible]	[illegible]	—	—	—	—	[illegible]
Everett . . .	[illegible]	4	[illegible]	25.00	25.00	—	—	[illegible]
Newburyport .	14,031	4	[illegible]	—	[illegible]	—	—	—
Amesbury . .	[illegible]	4	0	[illegible]	[illegible]	—	—	

Deaths reported 3,398: under five years of age 1,174; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 410, [illegible] consumption [illegible], diphtheria and croup 199, scarlet fever 73, diarrhœal diseases 48, typhoid fever 39, measles 22, cerebro-spinal meningitis 20, whooping-cough 19, [illegible].

From typhoid fever [illegible] 7, New York and Pittsburgh 5 each, Cincinnati and Washington 3 each, Boston 2, Brooklyn, [illegible] and Newburyport 1 each. From measles New York 8, Chicago 5, Philadelphia 3, Brooklyn 2, Cincinnati, Cleveland, Pittsburgh and Lowell 1 each. From cerebro-spinal meningitis New York 9, Chicago and Brooklyn 2 each, Philadelphia, Boston, Milwaukee, Washington, Worcester, Lynn and Everett 1 each. From whooping-cough New York

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[1] Bull. Gén. de Thérap.

[2] [illegible] Woch., No. [illegible]

9, Brooklyn 7, Chicago 3. From typhus fever New York 8. From malarial fever Brooklyn 5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 28, 1893, TO FEBRUARY 3, 1893.

Captain Louis A. La Garde, assistant surgeon, U. S. A., is relieved from duty at Fort McHenry, Md., and will proceed to Chicago, Ill., and assume his duties in connection with the World's Columbian Exposition.

Captain C. N. Berkeley Macauley, assistant surgeon, now awaiting orders at Baltimore, Md., will report in person to the superintendent of the U. S. Military Academy, West Point, New York, for duty at that post.

Captain Charles B. Ewing, assistant surgeon, U. S. A., will, in addition to his present duties as attending surgeon and examiner of recruits in Baltimore, Md., report in person to the commanding officer, Fort McHenry, Md., for duty as post surgeon, taking station there.

Captain Guy L. Edie, assistant surgeon, U. S. A., will proceed from New York City to Fort Wadsworth, New York Harbor, and report to the post commander for temporary duty.

Captain Louis W. Crampton, assistant surgeon, U. S. A., now on leave of absence at Los Angeles, Cal., will report in person to the commanding general, Department of Arizona, for such temporary duty at Los Angeles, Cal., as may be required.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 4, 1893.

L. H. Stone, assistant surgeon, ordered to Naval Hospital, Brooklyn, N. Y.

G. H. Barber, passed assistant surgeon, from Naval Hospital, Brooklyn, N. Y., and to the U. S. S. "Miantonomoh."

N. J. Blackwood, assistant surgeon, from U. S. S. "Miantonomoh" and to the U. S. Navy Yard, Brooklyn, N. Y.

AN ARMY MEDICAL BOARD

Will be in session in New York City, N. Y., during April, 1893, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before March 15, 1893, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

C. Sutherland, *Surgeon-General U. S. Army.*

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, February 13, 1893, at 8 p. m.

Dr. S. J. Mixter: "Dislocated Semi-lunar Cartilages."

Dr. M. H. Richardson: "Floating Bodies in the Knee-joint."

Dr. J. P. Clark: "Papilloma of the Larynx in Adults, with a report of cases."

Last semi-annual meeting at which new members can be proposed.

N. B. On March 13th a paper on "Insanity Following Surgical Operations" will be read by Dr. G. G. Sears. Members are requested to report cases.

John T. Bowen, M.D., *Secretary.*

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, February 15th, at 8 o'clock, p. m.

Paper: "Visceral Syphilis," Dr. W. T. Councilman. Discussion opened by Drs. A. Post, J. J. Putnam.

F. C. Shattuck, M.D., *Chairman.*
Henry Jackson, M.D., *Secretary.*

RECENT DEATHS.

Samuel C. Whittier, M.D., of Portsmouth, N. H., died February 2d, aged fifty-six years. He graduated from the Harvard Medical School in 1862, and was immediately appointed assistant surgeon of the Eleventh Massachusetts Infantry Regiment. He served through the war, being transferred in 1864 as surgeon of the Twenty-third Regiment. He has since practised in Portsmouth, serving also as chairman of the pension board.

Harry Hungerford, M D., of Stamford, Conn., died in New York, February 3d, aged thirty-eight years. He graduated from the College of Physicians and Surgeons, New York, in 1880, and was a member of the New York Academy of Medicine and the Connecticut Medical Society. He had been for some time Surgeon-General of the Connecticut State Militia.

George Jackson Fisher, M.D., died February 3d, in Sing Sing, N. Y., from septicæmia. Two weeks before, in performing an amputation he received a cut in the thumb, the inflammation resulting from which caused his death. Dr. Fisher was born in Westchester County, New York, in 1825, and graduated from the Medical Department of the University of the City of New York in 1849. In 1851 he commenced practice in Sing Sing, where he has resided ever since. In 1874 he became President of the Medical Society of the State of New York. For a number of years he was physician and surgeon of the State Prison at Sing Sing and examining surgeon in the United States Pension Bureau. Among his published works are the following: "Teratology, a Treatise on the Different Varieties of Human Monstrosities"; "Biographical Sketch of Deceased Physicians of Westchester County"; "Animal Substances Employed as Medicines by the Ancients"; "A Brief History of the Discovery of the Circulation of the Blood," and a "History of Surgery."

Spencer C. Devan, M.D., passed assistant surgeon, United States Marine-Hospital Service, died at Philadelphia, February 3d.

Dr. Casimiro Manassei, Professor of Dermatology and Syphilis in Rome, died January 14th.

BOOKS AND PAMPHLETS RECEIVED.

Eighteenth Report of the Salem (Mass.) Hospital. 1893.

The Use of the Curette in Uterine Surgery. By A. Vander Veer, M.D., Albany, N. Y. 1892.

Clinical Reports on Insanity. By the Medical Staff of the Maryland Hospital for the Insane.

Amblyopiatrics. The Antiseptic Dropper. By George M. Gould, A.M., M.D., Philadelphia. Reprints. 1892.

Senn's Great Surgical Clinics at the Rush Medical College, Chicago. By G. Wiley Broome, M.D. Reprint. 1893.

Ueber eine neue Behandlungsmethode der Nephrolithiasis mit Glycerin. Von Dr. August Herrmann. Reprint. 1892.

Influenza: Its Pathology, Symptoms, etc. By Julius Althaus, M.D., M.R.C.P. Second edition. London: Longmans & Co. 1892.

Transactions of the Colorado State Medical Society. Twenty-second Annual Convention. By-laws and List of Members. Denver, June, 1892.

The Forthcoming Report of the Bureau of Education on Professional Education in the United States. By Bayard Holmes, B.S., M.D. Reprint. 1893.

The Johns Hopkins Hospital Reports. I. Papillomatous Tumors of the Ovary. II. Tuberculosis of the Female Generative Organs. By J. Whitridge Williams, M.D. 1892.

Hand-book of Insanity for Practitioners and Students. By Dr. Theodore Kirchhoff, Physician to the Schleswig Insane Asylum and Privat-docent at the University of Kiel. New York: William Wood & Co. 1893.

Lectures on Mental Diseases, designed especially for medical students and general practitioners. By Henry Putnam Stearns, M.D., Lecturer on Mental Diseases in Yale University, etc. Philadelphia: P. Blakiston, Son & Co. 1893.

A New Method of Checking Bleeding after Tonsillotomy. Arterial Saline Infusion; A Report of Three Additional Cases by the New Technique; Also, of a Case of Infant Diarrhœa Treated by Saline Infusion. By Robert H. M. Dawbarn, M.D. Reprints. 1892.

Hand-book of Materia Medica, Pharmacy and Therapeutics. By Samuel O. L. Potter, M.D., M.R.C.P., Professor of the Theory and Practice of Medicine in the Cooper Medical College of San Francisco, etc. Fourth edition. Philadelphia: P. Blakiston, Son & Co. 1893.

Umbilical Hernia; Operation; Cure. Ligation of Femoral Artery for Popliteal Aneurism; Cure. Fecal Fistula Caused by Appendicitis; Operation; Cure. A Clinical Lecture Delivered at the Jefferson Medical College Hospital, April 6, 1892. By W. W. Keen, M.D., Philadelphia. Reprint. 1892.

Address.

PHYSIC AND PHYSICIANS AS DEPICTED IN PLATO.[1]

BY WM. OSLER, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore, Md.

(Concluded from No. 6, p. 133.)

We get a glimpse of the method of diagnosis, derived doubtless from personal observation, possibly of the great Hippocrates himself, whose critical knowledge of pulmonary complaints we daily recognize in the use of his name in association with the clubbed fingers of phthisis, and with the succussion splash of pneumo-thorax. "Suppose some one, who is inquiring into the health or some other bodily quality of another: he looks at his face and at the tips of his fingers, and then he says, 'Uncover your chest and back to me that I may have a better view.'" And then Socrates says to Protagoras, "Uncover your mind to me; reveal your opinion, etc."

One of the most celebrated medical passages is that in which Socrates professes the art of a midwife practising on the souls of men when they are in labor, and diagnosing their condition, whether pregnant with the truth or with some "darling folly." The entire section, though long, must be quoted. Socrates is in one of his "little difficulties" and wishes to know of the young Theætetus, who has been presented to him as a paragon of learning, and whose progress in the path of knowledge has been sure and smooth "flowing on silently like a river of oil" — what is knowledge? Theætetus is soon entangled and cannot shake off a feeling of anxiety.

Theæt. I can assure you, Socrates, that I have tried very often, when I heard the questions which came from you; but I can neither persuade myself that I have any answer to give, nor hear of any one who answers as you would have me answer; and I cannot get rid of the desire to answer.

Soc. These are the pangs of labor, my dear Theætetus; you have something within you which you are bringing to the birth.

Theæt. I do not know, Socrates; I only say what I feel.

Soc. And did you never hear, Simpleton, that I am the son of a midwife, brave and burly, whose name was Phænarete?

Theæt. Yes, I have heard that.

Soc. And that I myself practise midwifery?

Theæt. No, I never heard that.

Soc. Let me tell you that I do, though, my friend; but you must not reveal the secret, as the world in general have not found me out; and therefore they only say of me, that I am an exceedingly strange being, who drive men to their wits' end; did you ever hear that?

Theæt. Yes.

Soc. Shall I tell you the reason?

Theæt. By all means.

Soc. I must make you understand the situation of the midwives, and then you will see my meaning better. No woman, as you are probably aware, who is still able to conceive and bear, attends other women, but only those who are past bearing.

Theæt. Yes, I know.

Soc. The reason of this is said to be that Artemis — the goddess of childbirth — is a virgin, and she honors those who are like herself; but she could not allow the barren to be midwives, because human nature cannot know the mystery of an art without experience; and therefore she assigned this office to those who by reason of age are past bearing, honoring them from their likeness to herself.

Theæt. That is natural.

Soc. And a natural, or rather necessary inference is, that the midwives know better than others who is pregnant and who is not?

Theæt. Very true.

Soc. And by the use of potions and incantations they are able to arouse the pangs and to soothe them at will; they can make those bear who have a difficulty in bearing, and if they choose, they can smother the babe in the womb.

Theæt. They can.

Soc. Did you ever remark that they are also most cunning matchmakers, and have an entire knowledge of what unions are likely to produce a brave brood?

Theæt. I never heard of this.

Soc. Then let me tell you that this is their greatest pride, more than cutting the umbilical cord. And if you reflect, you will see that the same art which cultivates and gathers in the fruits of the earth, will be most likely to know in what soils the several plants or seeds should be deposited.

Theæt. Yes, the same art.

Soc. And do you suppose that this is otherwise in the case of women.

Theæt. No, that is not likely.

Soc. No, indeed; but the midwives, who are respectable women and have a character to lose, avoid this department of practice, because they are afraid of being called procuresses, which is a name given to those who join together man and woman in an unlawful and unscientific way; and yet the true midwife is also the true and only matchmaker.

Theæt. That I understand.

Soc. Such are the midwives, whose work is a very important one, but not so important as mine; for women do not bring into the world at one time real children, and at another time idols which are with difficulty distinguished from them; if they did, then the discernment of the true and false birth would be the crowning achievement of the art of midwifery — you should think of that?

Theæt. Yes, I certainly should.

Soc. Well, my art of midwifery is in most respects like theirs; but the difference lies in this — that I attend men and not women, and I practise on their souls when they are in labor, and not on their bodies; and the triumph of my art is in examining whether the thought which the mind of the young man is bringing to the birth, is a false idol or a noble and true creation. And like the midwives, I am barren, and the reproach which is often made against me, that I ask questions of others and have not the wit to answer them myself, is very just; the reason is, that the god compels me to be a midwife, but forbids me to bring forth. And therefore I am not myself wise, nor have I anything which is the invention or offspring of my own soul, but the way is this: — Some of those who converse with me, at first appear to be absolutely dull, yet afterwards, as our acquaintance ripens, if the god is gracious to them, they all of them make astonishing progress; and this not only in their own opinion but in that of others. There is clear proof that they had never learned anything of me, but they have acquired and discovered many noble things of themselves, although the god and I help to deliver them. And the proof is, that many of them in their ignorance, attributing all to themselves and despising me, either of their own accord or at the instigation of others, have gone away sooner than they ought; and the result has been that they have produced abortions by reason of their evil communications, or have lost the children of which I delivered them by an ill bringing up, deeming lies and shadows of more value than truth; and they have at last ended by seeing themselves, as others see them, to be great fools. Aristides, the son of Lysimachus, is one of this sort, and there are many others. The truants often return to me, and beg that I would converse with them again — they are ready to go down on their knees — and then, if my familiar allows, which is not always the case, I receive them and they begin to grow again. Dire are the pangs which my art is able to arouse and to allay in those who have intercourse with me, just like the pangs of women in childbirth; night and day they are full of perplexity and travail which is even worse than that of women. So much for them. And there are others, Theætetus, who come to me apparently having nothing in them; and as I know that they have no need of my art, I coax them into another union, and by the grace of God I can gradually tell who is likely to do them good. Many of them I have given away to Prodicus, and some to other inspired sages. I tell you this long story, friend Theætetus, because I suspect, as indeed you seem to think yourself, that you are in labor — great with some conception. Come then to me, who am a midwife and the son of a midwife, and try to answer the question which I will ask you. And if I abstract and expose your first-born, because I discover upon inspection that the conception which you have formed is a vain shadow, do not quarrel with me on that account, as the manner of women is when their first children are taken from them. For I have actually known some who were ready to bite me when I deprived them of a darling folly; they did not perceive that I acted from good will, not knowing that no god is the enemy of man (that was not within the range of their ideas) neither was I their enemy in all this, but religion will never allow me to admit falsehood, or to stifle the truth. Once more, then, Theætetus, I repeat my old question, "What is knowledge?" and do not say that you cannot tell; but quit yourself like a man, and by the help of God you will be able to tell.[10]

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[1] Read at the Johns Hopkins Hospital Historical Club, December [illegible]

Socrates proceeds to determine whether the intellectual babe brought forth by Theætetus is a wind-egg or a real and genuine birth. "This then is the child, however he may turn out, which you have brought into the world, and now that he is born we must run around the hearth with him and see whether he is worth rearing or only a wind-egg and a sham. Is he to be reared in any case? or will you bear to see him rejected and not get into a passion if I take away your first-born?" The conclusion is "that you have brought forth wind, and that the offsprings of your brain are not worth bringing up." And the dialogue ends as it began with a reference to the midwife: "The office of a midwife I, like my mother, have received from God; she delivered women, and I deliver men; but they must be young, noble, and fair."

III.

From the writings of Plato we may gather many details about the status of physicians in his time. It is very evident that the profession was far advanced and had been progressively developing, for a long period before Hippocrates, whom we erroneously, yet with a certain propriety, call the ***Father of Medicine.*** The little by-play between Socrates and Euthydemus suggests an advanced condition of medical literature: "Of course, you who have so many books are going in for being a doctor," says Socrates, and then he adds, "there are so many books on medicine, you know." As Dyer remarks, whatever the quality of these books may have been, their number must have been great to give point to this chaff.

It may be clearly gathered from the writings of Plato that two sorts of physicians (apart altogether from quacks and the Æsculapian guild) existed in Athens, the private practitioner, and the State-physician. The latter, though the smaller numerically, representing apparently the most distinguished class. From a reference in one of the dialogues ("Gorgias") they evidently were elected by public assembly,—"when the assembly meets to elect a physician." The office was apparently yearly, for in the "Statesman" is the remark, "when the year of office has expired, the admiral or physician has to come before a court of review" to answer any charges that may be made against him. In the same dialogue occurs the remark, "and if anyone who is in a private station has the art to advise one of the public physicians, must he not be called a physician?" Apparently a physician must have been in practice for some time and attained great eminence before he was deemed worthy of the post of State-physician. "If you and I were physicians, and were advising one another that we were competent to practise as state-physicians, should I not ask you, and would you not ask me, Well, but how about Socrates himself, has he good health? And was any one else ever known to be cured by him whether slave or freeman?"[11]

A reference to the two sorts of doctors is also found in the "Republic": "Now you know that when patients do not require medicine, but have only to be put under a regimen, the inferior sort of practitioner is deemed to be good enough; but when medicine has to be given, then the doctor should be more of a man."

The office of State-physician was in existence fully two generations before this time, for Democedes held this post at Athens in the second half of the sixth century at a salary of £406, and, very much as a modern professor might be, he was seduced away by the offer of a great increase in salary by Polycrates, the tyrant of Samos. It is evident, too, from the "Laws," that the doctors had assistants, often among the slaves.

For of doctors, as I may remind you, some have a gentler, others a ruder method of cure; and as children ask the doctor to be gentle with them so we will ask the legislator to cure our disorders with the gentlest remedies. What I mean to say is, that besides doctors there are doctors' servants, who are also styled doctors.

Cle. Very true.

Ath. And whether they are slaves or freemen makes no difference; they acquire their knowledge of medicine by obeying and observing their masters; empirically and not according to the natural way of learning, as the manner of freemen is, who have learned scientifically themselves the art which they impart scientifically to their pupils. You are aware that there are these two classes of doctors?

Cle. To be sure.

Ath. And did you ever observe that there are two classes of patients in states, slaves and freemen; and the slave doctors run about and cure the slaves, or wait for them in the dispensaries — practitioners of this sort never talk to their patients individually, or let them talk about their own individual complaints? The slave-doctor prescribes what mere experience suggests, as if he had exact knowledge; and when he has given his orders, like a tyrant, he rushes off with equal assurance to some other servant who is ill; and so he relieves the master of the house of the care of his invalid slaves. But the other doctor, who is a freeman, attends and practises upon freemen; and he carries his enquiries far back, and goes into the nature of the disorder; he enters into discourse with the patient and with his friends, and is at once getting information from the sick man, and also instructing him as far as he is able, and he will not prescribe for him until he has first convinced him; at last, when he has brought the patient more and more under his persuasive influences and set him on the road to health, he attempts to effect a cure. Now which is the better way of proceeding in a physician and in a trainer? Is he the better who accomplishes his ends in a double way, or he who works in one way, and that the ruder and inferior?

This idea of first convincing a patient by argument is also mentioned in the "Gorgias," and would appear indeed to have furnished occupation for some of the numerous sophists of that period. Gorgias lauding the virtues of rhetoric and claiming that she holds under her sway all the inferior art, says: "Let me offer you a striking example of this. On several occasions I have been with my brother Herodicus, or some other physician, to see one of his patients, who would not allow the physician to give him medicine or apply the knife or hot iron to him; and I have persuaded him to do for me what he would not do for the physician just by the use of rhetoric. And I say that if a rhetorician and a physician were to go to any city and had there to argue in the Ecclesia or any other assembly as to which of them should be elected state-physician, the physician would have no chance; but he who could speak would be chosen if he wish." In another place ("Laws") Plato satirizes this custom: "For of this you may be very sure, that if one of those empirical physicians, who practise medicine without science, were to come upon the gentleman physician talking to his gentle patient, and using the language almost of philosophy — beginning at the beginning of the disease, and discoursing about the whole nature of the body, he would burst into a hearty laugh — he would say what most of those who are called doctors always have at their tongue's end: foolish fellow, he would say, your are not healing the sick man, but you are educating him; and he does not want to be made a doctor, but to get well."

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[10] Theætetus.

[11] Gorgias.

Of the personal qualifications of the physician not much is said; but in the "Republic" (III, 408) there is an original, and to us not very agreeable, idea: "Now the most skilful physicians are those who, from their youth upwards, have combined with a knowledge of their art, the greatest experience of disease; they had better not be in robust health, and should have had all manner of diseases in their own person. For the body, as I conceive, is not the instrument with which they cure the body; in that case we could not allow them to be or to have been sickly; but they cure the body with the mind, and the mind which has become and is sick can cure nothing."

Some idea of the estimate which Plato put on the physician may be gathered from the mystical account in the "Phædrus" of the nature of the soul and of life in the upper world. We are but animated failures — the residua of the souls above which have attained a vision of truth, but have fallen "hence beneath the double load of forgetfulness and vice." There are nine grades of human existence into which these souls may pass, from that of a philosopher or artist to that of a tyrant. The physician or lover of gymnastic toils comes in the fourth class.

But if Plato assigns the physician a place in the middle tier in his mystery, he welcomes him socially into the most select and aristocratic circle of Athens. In that most festive of all festal occasions, at the house of Agathon, described in the "Symposium," Eryximachus, a physician and the son of one, is a chief speaker, and in his praise of love says, "from medicine I will begin that I may do honor to my art." We find him, too, on the side of temperance and sobriety, "the weak heads like myself, Aristodemus, Phædrus, and others who never can drink, are fortunate in finding that the stronger ones are not in a drinking mood. (I do not include Socrates, who is able either to drink or to abstain, and will not mind, whichever we do.) Well, as none of the company seem disposed to drink much, I may be forgiven for saying, as a physician, that drinking deep is a bad practice, which I never follow, if I can help, and certainly do not recommend to another, least of all to any one who still feels the effect of yesterday's carouse." The prescriptions for hiccough given by Eryximachus give verisimilitude to the dialogue. When the turn of Ari [illegible] eaten too much and had the hiccough, and he said to Eryximachus, "You ought either to stop my hiccough or speak in my turn." Eryximachus recommended him to hold his breath, or if that failed to gargle with a little water, and if the hiccough still continued, to tickle his nose with something and sneeze, adding, "if you sneeze once or twice even the most violent hiccough is sure to go."

Upon the medical symptoms narrated in that memorable scene, unparalleled in literature, after Socrates had drank the poison in prison, it is unecessary to dwell; but I may refer to one aspect as indicating the reverence felt for the representative of the great Healer. Denied his wish (by the warning of the jailor, who says that there is only sufficient poison) to offer a libation to a god, Socrates's dying words were, "Crito, we owe a cock to Æsculapius." "The meaning of this solemnly smiling farewell of Socrates would seem to be," according to Dyer, "that to Æsculapius, a god who always is prescribing potions and whose power is manifest in their effects, was due that most welcome and sovereign remedy which cured all the pains and ended all the woes of Socrates — the hemlock, which cured him of life which is death, and gave him the glorious realities of hereafter. For this great boon of awakening into real life Socrates owed Æsculapius a thank offering. This offering of a cock to Æsculapius was plainly intended for him as the awakener of the dead to life everlasting."

And permit me to conclude this already too long account with the eulogium of Professor Jowett — words worthy of the master, worthy of his great interpreter to this generation:

"More than two thousand two hundred years have passed away since he returned to the place of Apollo and the Muses. Yet the echo of his words continues to be heard among men, because of all philosophers he has the most melodious voice. He is the inspired prophet or teacher who can never die, the only one in whom the outward form adequately represents the fair soul within; in whom the thoughts of all who went before him are reflected and of all who come after him are partly anticipated. Other teachers of philosophy are dried up and withered, — after a few centuries they have become dust; but he is fresh and blooming, and is always begetting new ideas in the minds of men. They are one-sided and abstract; but he has many sides of wisdom. Nor is he always consistent with himself, because he is always moving onward, and knows that there are many more things in philosophy than can be expressed in words, and that truth is greater than consistency. He who approaches him in the most reverent spirit shall reap most of the fruits of his wisdom; he who reads him by the light of ancient commentators will have the least understanding of him.

"We may see him with the eye of the mind in the groves of the Academy, or on the banks of the Ilissus, or in the streets of Athens, alone or walking with Socrates, full of these thoughts which have since become the common possession of mankind. Or we may compare him to a statue hid away in some temple of

Zeus or Apollo, no longer existing on earth, a statue which has a look as of the God himself. Or we may once more imagine him following in another state of being the great company of heaven which he beheld of old in a vision ('Phædrus,' 248). So, 'partly trifling but with a degree of seriousness' ('Symposium' 197, E), we linger around the memory of a world which has passed away ('Phædrus,' 250, C)."

Original Articles.

REMARKS ON THE CLINICAL VALUE OF EHRLICH'S METHODS OF EXAMINATION OF THE BLOOD.

BY WILLIAM SYDNEY THAYER, M.D.,
Resident Physician to the Johns Hopkins Hospital, Baltimore.

VON JACKSCH, in an excellent address delivered at Franzensbad in May, 1890,[1] speaks particularly of practical methods of examination of the blood. He lays stress on the value of the microscopical examination of the fresh blood, a point of considerable importance, which is very often overlooked. He says later: "The microscope, the counting of the cells, the estimation of the hæmoglobin are the methods which are feasible to the modern practising physician. Other methods of examination of the blood, which have given valuable results, cannot be used in all cases by the practitioner on account of their inconvenience. Thus the methods of blood-staining practised by Ehrlich[2] possess certainly great value, but their employment is too complicated."

I mean to speak to-night mainly of just these methods of preparing and examining dried specimens of blood, for which we are chiefly indebted to Ehrlich; for I feel, in opposition to Von Jacksch, that they are in many ways the most valuable and easily applied methods open to the practising physician. Upon other more familiar, and perhaps not less useful, methods, such as the counting of the individual elements and the estimation of the hæmoglobin, I shall speak only incidentally. The enormous multiplication in late years of methods of examining and studying the various morphological elements of the blood can be seen by a glance at the article of Mueller in the *Centralblatt für Allgemeine Pathologie und Pathologische Anatomie* for the 31st of October and the 18th of November, 1892, where there are nearly five pages of references alone. Many of these methods, valuable as they may be, are not practicable to the ordinary practitioner; and I wish particularly to show in what ways the examination of dried specimens may be of real value in every-day work.

The methods of examining cover-glass specimens of blood were introduced by Ehrlich in 1878 and 1879. Following the methods which Koch and others used in staining preparations of bacteria, he found that when an extremely thin layer of blood was spread out upon the cover-glass and allowed to dry immediately, the shape and general characteristics of the blood corpuscles were preserved as well, if not better, than by any known methods. In preparing such a specimen, however, one must exercise considerable care. The slightest moisture from the fingers may be alone sufficient to spoil the specimen of blood. Any impurity on the cover-glass will bring about the same result; therefore the greatest care should be taken in the preparation of the glass; it should be washed in alcohol immediately before use. If this precaution is literally carried out much of the difficulty in making a preparation of blood is already overcome. The cover-glasses should not be handled by the fingers; it is best to use two pairs of forceps, which have the blades filed down to almost a knife edge; one may be a clamp forceps, and the other may be an ordinary dressing forceps, the blades of which have been filed down in order that they may not break the thin cover-glasses. After the cover-glasses have been carefully wiped, so that no visible particle of dust lies upon them, one of them is touched to the drop of blood flowing from the finger-tip or the lobe of the ear,[3] and allowed to fall immediately upon the other. If the glasses are clean, the drop of blood spreads out instantly, and the upper glass is drawn off the lower one, care being taken not to change its plane. The thin layer of blood on each glass will then dry almost immediately, particularly if it is held for a moment above a flame, so as to be very slightly heated. Particular stress is laid upon this instantaneous drying by Uskow,[4] who is able by this method to preserve the most minute chromatin network in the nuclei. Well-prepared specimens of this sort show the red corpuscles lying side by side in the field of vision with their natural shape, free from any crenation or other changes which one may observe so soon in the fresh specimen. The presence of crenated corpuscles is a sure sign that the preparation has not been properly made, and that it is unreliable. The specimens thus dried may be kept for almost any length of time. They are, of course, more satisfactory if examined immediately; but I have stained perfectly clear specimens which were three or four years old. It is well to wash the finger or the ear in alcohol and ether before taking blood, but it may be just as satisfactory to wipe away the first several drops of blood, thus washing the part, as it were, in the blood itself.

Before examining the specimens, however, further steps must be taken to "fix" the various elements, particularly the red corpuscles, that the hæmoglobin, which is easily soluble in water, may not be dissolved and washed away on applying the stain. This result may be accomplished in several ways. To go into a thorough analysis of the different methods would more than occupy my whole time, and I will merely mention one or two of the most simple and reliable methods.

A very satisfactory method is to drop the cover-glass into a solution of absolute alcohol and ether of equal parts (Nikiforff's method). In a half-hour the specimen will be ready to stain. For quick work a shorter time may suffice.

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[1] Prager. Med. Woch., 1890, Nos. 31-33.

[2] Ehrlich: Verhand. der Berlin. Physiolog. Gesell., 1878-9, Nos. 8 and 20; Zeitschrift f. Klin. Med., i, 1880; Berlin. Klin. Woch., 1880, No. 28; *Ibid.*, 1881, No. 3; Deutsch. Med. Woch., 1883, No. 46; Charite Annalen, xii, jahrg.; *Ibid.*, xiii, jahrg; Farbenanalytische Untersuchungen z. Histologie u. Klinik des Blutes; Verhand. des xii Congres. f. Innere Medicin, 1892; Westphal, Diss., Berlin, 1880; Schwartze, Diss., Berlin, 1880; Spilling, Diss., Berlin, 1880; Einhorn, Diss., Berlin, 1884; Uthemann, Diss., Berlin, 1887.

[3] It is best to use a sharp lancet; its application is much less painful than that of a needle, while much more blood flows from a small stab. I prefer to take the blood from the lobe of the ear; the part is much less sensitive than the finger-tip. If a sharp knife or lancet is used, the small cut necessary may be scarcely felt by the patient. The situation of the ear, moreover, is such that the instrument may often be concealed from the patient, a point of considerable importance in nervous individuals and young children.

[4] The Blood as a Tissue. St. Petersburg, 1890 (Russian).

Absolute alcohol alone for ten to thirty minutes will give fairly good results.

Ehrlich first recommended the use of heat in fixing a specimen of blood, a method which is probably, upon the whole, the most satisfactory of all. He advises the use of a copper plate (mine is about 40 x 10 x ½ centimetres), which is placed over a flame, burning at a fixed height. By finding the boiling point (by adding drops of water), 100° C. may be easily determined. The specimens are placed with the face upon the plate, about three centimetres inside the boiling point, a temperature of between 100° to 120°, and may be left there for a varying time, according to the solution with which the specimen is to be stained. For watery neutral solutions a short time suffices; very acid solutions and those containing glycerine call for a longer heating of the specimen. Ordinary specimens may be heated from one to two hours, though for quick clinical work a much shorter time often suffices. The specimen is now prepared for staining.

Before speaking more exactly of the methods of staining, I want to speak first of the theory on which Ehrlich proceeded in his work. He was first led into applying his method of contrast staining or "color analysis," as he calls it, in the study of the leucocytes. Max Schultze[5] was the first to direct attention to the fact that the leucocyte is not a morphological unity; and Ehrlich in studying these elements discovered that the granules which they contained, which many had noticed, and Max Schultze in particular, had described, might be divided into classes having affinities for certain distinct chemical classes of coloring matters. He found that between these various granulations there existed constant differences: (1) in their relation to dissolving substances — water, acids, alcohol, glycerine, etc.; (2) in their size, form and degree of refraction; (3) in the way they are influenced by high temperatures; (4) in their distribution in the cell body. He believes that these granules originate in the cell, and are products of a specific secretory property of the protoplasm. He has called them the "specific granulations of the blood." These granules he has classified mainly according to their affinity for the aniline coloring matters.

He divides the aniline colors into two groups: (1) the *acid* coloring matters, and (2) the *basic* coloring matters. The *acid* coloring matters are those in which the staining principle is an acid; for instance, picrate of ammonium, where the staining principle is the picric acid. Some of the more important acid colors are eosin, martius yellow, the salts of picric acid, aurantia, indulin, nigrosin, tropæolin O. O., Bordeaux, ponceau, and acid fuchsin.

The *basic* coloring matters are those in which the staining principle is a base, where the acid is an indifferent substance as regards the staining; for instance, fuchsin, Bismarck brown, safranin, methylene blue, methyl violet, methyl green, etc.[6]

Ehrlich, as was said above, has differentiated various distinct classes of granules — seven in all. Of these, however, three only are of practical importance in human blood, and only two, indeed, have any great value. In the first place Ehrlich found, in certain leucocytes in human blood, large granules of a round or ovoid shape, having in the fresh state a peculiar yellowish-green refractive appearance, suggesting fat (the coarsely granular leucocytes of Schultze). These granules had a particular affinity for the acid coloring matters; they were stained by all members of this group, and by this group alone. Owing to their marked affinity for eosin, Ehrlich named these *eosinophilic* granules.

Again he found a class of granulation which was stained by basic coloring matters alone. This *basophilic* granulation occurs in a very small proportion of the leucocytes in normal blood, and is as yet of little practical value in blood examination. The cells containing these granules were first called in German "Mastzellen," a name which they have retained in other languages. This granulation is more common in certain connective-tissue cells in the fixed tissues than in the blood. Here the granules have been not infrequently mistaken for micro-organisms. The basophilic granules of the blood are of an equal size. They are less refractive than the eosinophilic granules, and in the dried specimens they are usually seen surrounding the central clear nucleus in the shape of a ring. They rarely have the morula appearance that the eosinophilic cells often show.

The third granulation, which is by far the commonest one in the human blood, is one which is stained neither by acid nor by basic coloring matters alone, but only by a fluid which contains a mixture of an acid and a basic coloring matter together, the acid color being in excess. This granulation Ehrlich calls *neutrophilic*. The neutrophilic granules are smaller and more irregularly shaped than either the eosinophilic or basophilic granules. They occur in about three-fourths of the leucocytes in normal blood.

METHODS OF STAINING.

It will be worth while here to mention only a few of the staining methods which have seemed to me most practical; of other methods a full summary may be found in Mueller's article before referred to.

The basic colors generally stain the nuclei. The best examples of these are perhaps methylene blue and ordinary basic fuchsin. Either employed alone stains the nuclei beautifully, and also any bacteria or protozoa which may be present in the blood. For instance, in staining malarial organisms I have found a simple aqueous solution of methylene blue as satisfactory a stain as any. The basophilic granules (mastzellen) are also stained by this class of coloring matters.

The acid colors stain the red corpuscles and the eosinophilic granules.

A very convenient stain for practical use is as follows:

[illegible] . . . . [illegible]
[illegible] . . . . [illegible]

The prepared cover-glass should be stained for a few minutes in this solution (which has been diluted one-half with water), washed with water, dried in the air or between filter paper, and stained for three-quarters of a minute in a saturated aqueous solution of methylene blue, which should be diluted one-half with water before using. By this method the red corpuscles are stained red, the nuclei blue, the eosinophilic granules a brilliant red, and any bacteria or protozoa blue. Another solution which gives satisfactory results is that of Czinzinski:

[5] Archiv. für Mikroskopische Anatomie, Bd. I, p. 9.

[6] [illegible] Hoppe, Die Methoden der [illegible]

Methylene blue, concentrated aqueous solution	40
One-half per cent. solution of eosin in 70% alcohol	20
Distilled water	40

The covers may be fixed in absolute alcohol from five minutes to half an hour, and stained from three to six hours in the thermostat at 37° C. This method is particularly recommended by Canon[7] for showing the eosinophilic cells and the mastzellen; it has also been used by the same author to demonstrate the bacilli of influenza in the blood.

To bring out the neutrophilic granules the best solution is that recommended by Ehrlich, the mixture of acid fuchsin, methyl green and orange G.; it brings out most of the more important points in the blood. This stain is perhaps the most convenient for everyday use, while it has formed the basis for the most valuable classifications of the leucocytes which have been made. The methods of preparation are very numerous (see Mueller's article). Ehrlich advises the following mixture:[8]

Saturated aqueous solution orange G	125
Saturated solution in 20% alcohol of acid fuchsin	125
Alcohol, abs.	75
Saturated aqueous solution methyl green	125

The methyl green must be added drop by drop while stirring or shaking the solution. The solution must stand some weeks, and the fluid to be used should be taken with a pipette from the middle of the solution.

Later Ehrlich advises a different procedure:

Saturated aqueous solution orange G	120-135
" " " acid fuchsin	80-165
" " " methylene green	125
Water	300
Absolute alcohol	200
Glycerine	100

A satisfactory solution may be prepared as follows:

Saturated aqueous solution of acid fuchsin	2
Water	3
Saturated aqueous solution of orange G	6.25
Saturated aqueous solution of methyl green	6
To be added drop by drop, while shaking the solution.	
Water	15
Alcohol	10
Glycerine	5

The cover-glass which has been heated for from five minutes to two hours at a temperature of 100°–120° C., or has been hardened in alcohol and ether, is stained in this solution for from two to five minutes, washed in water, and dried in the air, or, if the specimen has been heated for an hour or more, between filter paper and mounted in oil or balsam. Specimens heated one to two hours[9] stain better than those which have been heated a short time, but perfectly satisfactory results for ordinary work may be obtained with specimens heated from five to ten minutes.

With this stain the red corpuscles are stained an orange or buff color, the nuclei of the colorless corpuscles green, the neutrophilic granules a violet or lilac color, the eosinophilic granules a deep red. The nuclei of nucleated red corpuscles, when present, are stained an intensely deep green, almost black. With a little practice the differentiation of the eosinophilic and neutrophilic granules is generally easy.

By the employment of various staining reagents — I say reagents because the staining of these granules is a distinct micro-chemical reaction — Ehrlich differentiated the following varieties of leucocytes in normal human blood:[10]

(1) Lymphocytes, small cells about the size of a red corpuscle, the body of which is filled with a large, round, intensely staining nucleus, while the protoplasm is reduced to a small border surrounding the nucleus.

(2) Voluminous cells, which have a relatively large, oval, or ovoid, faintly staining nucleus, and a relatively extensively developed protoplasm.

(3) Structures of a similar character, which are distinguished from the former only in that the nucleus has certain indentations which often give it the shape of a wallet.

(4) Very numerous, somewhat smaller bodies, which are characterized particularly by the polymorphous shape of the nucleus. This nucleus, Ehrlich says, may, under the influence of reagents, break into several separate fragments; hence the perhaps not entirely fitting name "polynuclear." The protoplasm of these cells is filled with fine neutrophilic granules.

(5) Eosinophilic leucocytes; cells of about the same size as the latter variety, with a single, round, ovoid or polymorphous nucleus, while the protoplasm is filled with eosinophilic granules.

The origin of the lymphocytes, Ehrlich traces to the lymphatic tissues of the body. The large mononuclear elements come apparently from both the bone marrow and the spleen, changing in the blood-current into the polynuclear neutrophilic elements. The eosinophilic leucocytes arise in all probability in the bone marrow.

Uskow[11] has recently studied the colorless corpuscles by the method of contrast-staining with great care, and has made a more minute classification. He divides the corpuscles into:

A. Lymphocytes: the smallest form of corpuscle, consisting of a round nucleus (sometimes having an indentation) surrounded by a thin rim of protoplasm. The protoplasm in the preparation is often separated from the nucleus by a bright, sharp ring. Both protoplasm and nucleus are stained intensely. These he divides into:

(1) Small lymphocytes, which are the size of red corpuscles, or smaller.

(2) Large lymphocytes, which are somewhat larger, in which the protoplasmic ring about the nucleus is slightly larger and more irregular, sometimes showing rounded projections.

B. Transparent corpuscles: these are distinguished by their richness in protoplasm, which takes no stain whatever, and looks like a vacuum in the faintly stained field of the preparation. The nucleus is homogeneous, round, oval or bean shaped, and lies usually excentrically; it stains more feebly than the nucleus of the lymphocytes. He divides them into:

(3) Small transparent corpuscles, which are about the size of large lymphocytes; these have often a somewhat squarish shape, with sharply-rounded corners.

(4) Large transparent corpuscles, which are three

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[7] Deutsche Med. Woch., 1892, No. 10.

[8] There is, unfortunately, a considerable difference between different preparations of these aniline colors and it is always well to determine the source of the materials one uses. I use generally the colors from the *Berliner Gesellschaft für Anilin Fabrikation*, which can be obtained from G. Konig, Dorotheen Str. 28, Berliner, N. W. Grübler's colors are also reliable.

[9] In some cases of pernicious anæmia the specimen should be placed at boiling point or even outside of it and must not be heated longer than one hour.

[10] For careful study of the blood, lenses of high power must be used. The Zeiss 1-12 oil immersion lens, the Leitz 1-12 or the Winkel 1-14, are all satisfactory.

[11] The Blood as a Tissue. St. Petersburg, 1890, (Russian).

to five times the size of the red corpuscles. The nucleus in the preparation is almost always excentric.

(5) Giant transparent corpuscles. These are the largest white corpuscles seen in the blood. They have often one or two deep indentations in the nucleus.

C. Transitional forms: corpuscles with protoplasm which stands about midway between that of the lymphocytes and that of the transparent corpuscles in its affinity for coloring matters. The smallest are slightly larger than lymphocytes, and the largest are almost as large as large transparent forms. The nucleus stains more intensely than the protoplasm, and has almost no light rim about its periphery. These he divides into:

(6) Small transitional forms (giant lymphocytes) which are like small transparent forms with a slight staining of the protoplasm.

(7) Large transitional forms.

(8) Giant transitional forms. These last two forms correspond in every respect to the transparent leucocytes, excepting in their slight ability to take stain.

D. (9) "Multinuclear" neutrophilic leucocytes. These are two or three times as large as red blood corpuscles and are easily distinguished by the deeply-staining irregularly-shaped nucleus. The protoplasm is relatively of considerable extent, as compared with the size of the nucleus. It takes little stain itself, but is filled with small neutrophilic granules. These he divides into:

(*a*) Those with a thick, rod-like nucleus, which takes a comparatively light stain, while the neutrophilic granules also are less intensely stained than in those with the more irregular nuclei. These, Uskow thinks, are transitional forms between the mononuclear leucocytes and the forms with more markedly polymorphous nuclei.

(*b*) The leucocytes with a single rod-like nucleus which is bent and twisted upon itself, being rounded at both ends.

(*c*) The apparently multinuclear leucocytes. Here the nucleus is not really divided, but all the pieces are united by small filaments. They are larger than the other kinds of neutrophilic cells. These neutrophilic cells are of various sizes, from but little above the size of a red corpuscle, to nearly that of the larger transitional forms. The fact that one at times finds very small neutrophilic elements, Uskow suggests may be due to the fact that the change to multinuclear may occur from transition forms before these have reached the giant size, though this, he believes, is not the rule. He describes also multinuclear leucocytes with vacuoles.

(10) Eosinophilic leucocytes.

Uskow believes that the lymphocytes arise from the lymphatic tissues of the body, the large lymphocytes arising mainly from the follicles of the spleen, the smaller from the lymphatic glands. In the bone-marrow, one finds on cover-glass specimens, or on section, scarcely any lymphocytes, but mainly transparent and transitional forms, which are also found in the spleen. In the bone-marrow the transparent forms are in excess, in the spleen the transitional forms. The small transparent forms are found particularly in the marrow. The multinuclear leucocytes may be found in cover-glass specimens from the spleen, marrow and glands, more markedly in the spleen and marrow than in the glands. But on section, Uskow finds multinuclear forms only in the blood-vessels. In the living rabbit, pieces of marrow, spleen, mediastinal glands, and also a piece of the portal vein, which was included between two ligatures, were placed in Fleming's solution, cut and stained; and nowhere, excepting in the blood, were found multinuclear leucocytes. Hence Uskow concludes that either in the blood or in the tissues, the multinuclear forms arise from the mononuclear. They arise probably, he thinks, from the large transitional corpuscles. The smaller size of the multinuclear elements may, he believes, be due to the condensation of the nucleus. In other words, Uskow believes that the small and large lymphocytes and the small transparent leucocytes are the youngest elements in the blood. They, by their growth in protoplasmic richness, their diminution in affinity for coloring matters on the one hand, and their increase in affinity for coloring matters on the other hand, merge into a common, indistinguishable variety, the transitional forms, changing in their further progress into the multinuclear neutrophilic cells. This, he considers the last stage of development, and the multinuclear neutrophilic leucocyte he traces through various degenerative processes to its final dissolution.

Uskow thus classifies the leucocytes:

(*a*) Young elements.
(1) Small transparent leucocytes.
(2) Small lymphocytes.
(3) Large lymphocytes.
(*b*) Ripe elements.
(4) Small transitional leucocytes.
(5) Large transitional leucocytes.
(6) Giant transitional leucocytes.
(7) Large transparent leucocytes.
(8) Giant transparent leucocytes.
(*c*) Over-ripe elements.
(9) Multinuclear leucocytes.
(10) Eosinophilic leucocytes.

This classification seems rational. A careful study of the blood with the triple stain cannot fail to impress one with its objective accuracy.

Tschistowitsch[12] divides the leucocytes into the following classes:

(*a*) Young elements, after Uskow.

(1) Small lymphocytes.

(2) Large lymphocytes.

(3) Small mononuclear leucocytes. Here he includes leucocytes of the size of a large lymphocyte or somewhat larger, with a round or ovoid nucleus, which stains more feebly than in the lymphocytes, and with a more developed protoplasm, which stains either very feebly (the small transitional forms of Uskow) or not at all (the small transparent forms of Uskow).

(*b*) Ripe elements which differ from the small mononuclear leucocytes only by their greater dimensions.

(4) Large mononuclear leucocytes.

(5) Mononuclear leucocytes with an indentation in the nucleus. They are distinguished from large mononuclear leucocytes only by the indented form of the nucleus. In this group he includes also those rather unusual multinuclear leucocytes without a trace of granulation, with an uncolored or a very slightly staining protoplasm. These latter, he thinks, are probably a transition form between those with a single indented nucleus and the multinuclear neutrophiles (?).

(*c*) Over-ripe leucocytes, after Uskow.

(6) Multinuclear neutrophilic leucocytes.

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[12] Berlin. [illegible] W[illegible], [illegible], No. [illegible].

(7) Eosinophilic leucocytes.

This division differs from the last which was advised by Uskow only in that he places the small transparent leucocytes and the small mononuclear leucocytes with but slightly stained protoplasm in the same group, because he could distinguish no essential difference between these two.

These various elements exist in normal blood in certain fairly definite proportions one to another. If we make a differential count according to Ehrlich's classification, we find: lymphocytes, 15 to 25 per cent.; mononuclear and transparent forms, about six per cent.; polynuclear, 70 to 75 per cent.; eosinophiles, one to five per cent.

Taking Uskow's estimates that in a healthy man there should be about 18 per cent. of the young, six per cent. of the ripe, and 75 per cent. of the over-ripe elements, we see that in Uskow's more minute classification the class of young elements corresponds fairly accurately to the lymphocytes in the classification of Ehrlich and his students; the class of ripe elements to the large mononuclear and transitional forms; and the class of the over-ripe elements to the neutrophiles and eosinophiles.

For minute, accurate work the classification of Uskow seems to be unquestionably the best that has yet been made. The modification of Tschistowitsch, in which he includes under the small mononuclear the small transparent forms and the small transitional forms, and classes the other elements as large mononuclear, without distinction, is perhaps more simple and nearly as satisfactory. In ordinary clinical work, however, one can expect to do little more than to count the divisions into:

(1) Small mononuclear leucocytes, including the small and large lymphocytes, the small transparent forms, and possibly some of the small transitional forms of Uskow.

(2) Large mononuclear and transitional (indented) forms.

(3) The multinuclear neutrophiles.

(4) The eosinophiles.

Most of the counts which I have made in my own work, before I was familiar with Uskow's classification, have been on this basis, and have included under lymphocytes or small mononuclear elements almost exactly those elements which Uskow and Tschistowitsch have included under their young elements; and under the large mononuclear and transitional leucocytes just those forms which he has included under his ripe elements.

There is one point in these classifications with regard to which there will always be some differences, depending on the individual who makes the estimations; that is, the point where the small mononuclear elements end and the large begin.

Now what practical information can we gain from the study of dried specimens?

(I) The red corpuscles. The skilled observer can readily detect a diminution in number by the behavior of the drop of blood, and the thickness of the corpuscles on the slide (if he prepare the specimen himself). A marked deficiency in color may be detected by the increased pallor of the middle of the corpuscles; that is, the point of greatest biconcavity is much more marked than in normal blood. Different stains, of course, give different appearances, but one who is familiar with the stain he is using can readily detect these points. Any difference in size or shape (poikilocytosis) of the corpuscles is readily observed.

Nucleated red corpuscles are particularly well seen; there is no method by which they are so readily brought out. Two varieties of these elements are seen in the human blood:

(*a*) In all acute anæmias of any intensity, and in almost all of the more chronic secondary anæmias, as well as in the so-called essential blood diseases, one finds bodies about as large as an ordinary corpuscle, containing a small, round, intensely staining nucleus, which has a peculiar refraction. This nucleus may be seen in the middle of the corpuscle, towards its edge, protruding from the corpuscle, or again free in the blood current, suggesting very strongly that this is probably the normal manner in which the red corpuscle parts with the nucleus which belongs to it in its youngest stages.

(*b*) In some grave anæmias, particularly in progressive pernicious anæmia, and the leukæmias, one finds elements much larger than these, containing large, much more palely staining nuclei, the body of the cell taking a stain similar to that of the ordinary red corpuscle. With the proper technique a well-marked nuclear network may be made out in these cells while the nuclei of the smaller variety show only a diffuse stain. Karyokinetic figures may often be found in the nuclei of these large elements, particularly in some forms of leukæmia. At times one finds these large nucleated red corpuscles where the nucleus has the same intense stain that it takes in the younger forms, but where it is apparently breaking up or is represented only by several small fragments. The process of extrusion of the nucleus in these large forms is more rarely observed. This has led Ehrlich to believe that what he considers the normal process of parting with the nucleus (extrusion) does not take place in some of the more grave anæmias, but that the nucleus becomes fragmented, and absorbed, as it were by the cell itself. Ehrlich, with Rindfleisch, is of the opinion that in the normal process of blood degeneration the extruded nucleus develops about itself a second corpuscle, and, being extruded again, the same process may go on for a considerable time. If one accepts this idea, which is certainly rather hard to believe, it is easy to conceive that the process of absorption of the nucleus would represent a much less satisfactory and active method of blood regeneration.

The smaller variety, that is to say, the normal variety of nucleated red corpuscles Ehrlich calls ***normoblasts*** the larger, ***megaloblasts*** or ***gigantoblasts***. The fact that one observes in some of these large nucleated red corpuscles, particularly in some leukæmias, unquestioned signs of karyokinesis is, it seems to me, reasonably good evidence that they are not all, to say the least, degenerate forms, but perhaps in some instances earlier forms of red corpuscles than one ordinarily sees in the blood.

In an anæmia of any particular degree one may also observe red corpuscles which take up, in addition to the acid coloring matters, a certain amount of basic stains, that is, which show, with the eosin-methylene blue stain, a bluish-purple color, while others show throughout their substance small spots and indications of a network of bluish stain. These forms Ehrlich considers degenerative. He believes that the process taking place within them is akin to coagulative necrosis. Gabritschewski[13] is inclined to believe that these elements are rather young than degenerate forms, from the fact that he has found certain nucleated red corpuscles which show this same characteristic stain. Ehrlich, however, remarks that this is only true of the nucleated red corpuscles of the second class, the gigantoblasts, particularly those in which the nucleus is fragmented. He asserts, moreover, that corpuscles with affinity for basic stains may be found in the blood of acute anæmiæ before regenerative forms appear, while they are found in considerable numbers in the blood of starving animals where there is no sign of regeneration. They are clinically, of course, found in association with what we consider regenerative forms (nucleated red corpuscles). Ehrlich well speaks of "Der haupt Charaktere des anæmischen Blutes, das Ineinandergreifen von degenerations und regenerations Formen."

(II) The colorless corpuscles. With stained specimens information can readily be gained with regard to the number and the varieties of the colorless elements. There is no method by which so careful a differential analysis can be made. The occurrence of a leucocytosis can be made out almost as satisfactorily by the practised eye as by counting the corpuscles. Under the term leucocytosis I shall understand, in the sense of Ehrlich, an increase in the total number of leucocytes where the differential count shows only a marked increase in the percentage of the multinuclear neutrophiles at the expense of the small mononuclear leucocytes.

(To be continued.)

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AMPUTATION AT THE HIP-JOINT FOR ANGIO-SARCOMA OF THE THIGH.

BY HOMER GAGE, M.D.,
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THE following case is interesting simply as a case of successful amputation at the hip-joint, but it possesses an additional interest from the very unusual character of the new growth for which the operation was performed.

F. F., a boy, thirteen years old, entered my service at the Worcester City Hospital on November 24, 1890, for a tumor of the left thigh. His father had had three small tumors removed from his leg at different times, the nature of which I was unable to ascertain; otherwise the family history was good. There was no history of previous illness, although the boy had never been very robust.

About four months prior to entrance, while in the act of bowling a croquet-ball, he turned his left leg outwards rather violently, wrenching the upper part of the left thigh. A few hours afterwards the thigh became "stiff" and painful, and it hurt him to walk. On the next day it was noticed that the upper part of the thigh was swollen. It continued swollen and painful until about one month later, when he says the swelling seemed to diminish under the use of tincture of iodine. But it very soon began to grow again, and during the past week or two has increased very rapidly. He was very pale and thin, and was able to get about only with great difficulty.

The upper third of the left thigh presented a cylindrical swelling, situated chiefly upon the anterior and inner aspect. It was apparently [illegible] connected with the bone, was fluctuating in front, hard beneath, nonpulsating, and moderately tender. During the next four days the skin over the swelling became very tense and glistening. His temperature ranged from 100° to 101° and his pulse from 110 to 120.

On November 28th, I made an incision on the anterior surface of the tumor two inches long. Upon the introduction of the finger, a soft, friable mass was encountered in every direction, and a substance resembling disintegrated blood-clot, some of which seemed to have a laminated structure, escaped in great quantities. A second incision was then made parallel to the first (in the long axis of the thigh), about four inches long, over the centre of the tumor, exposing a mass similar to that just described. Large quantities of clots and soft disintegrating tissue were scooped out, after which the finger was easily worked up nearly to and beneath Poupart's ligament. Amputation at the hip-joint was decided upon as the only possible means of removing the tumor, and in order to insure the loss of as little blood as possible, the external iliac artery was quickly tied just above Poupart's ligament. The limb was then disarticulated and the stump covered with lateral skin flaps. The adductor group of muscles clear to their point of origin presented a gelatinous appearance, evidently the result of beginning infiltration, and they were accordingly removed as thoroughly as possible with the scissors.

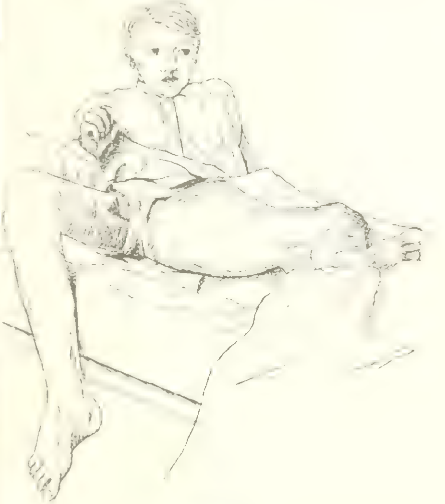

FIG. 1.

Figure 2 represents very clearly the amount of tissue involved in the tumor. The four muscles which form the inner hamstring are seen on the right, dissected off and turned downwards (*a*, *a*, *a*, *a*). Between them and the belly of the biceps is the great sciatic nerve (*b*). Above the tumor lies the femur (*d*), exposed by lifting off the quadriceps extensor, and a canula is to be seen inserted into the femoral artery. None of these structures were in any way involved in the tumor, which is seen to be confined entirely to the group of adductors (*e*).

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[13] Archiv f. Experimentelle Pathologie u. Pharmakologie, Bd. [illegible] p. [illegible]

The hæmorrhage was almost *nil*, but the shock was so great that during the latter part of the operation his pulse became very feeble and rose to 180. In order to try its effect in a case of simple shock, Dr. S. B. Woodward, who kindly assisted me at the operation, injected, at my request, twenty ounces of normal salt solution into the median cephalic vein of the right side. The pulse fell at once to 150, of increased strength, and although it rose during the afternoon to 170, on the following morning it had come down to 140. Nourishment and stimulants were freely administered, and he began slowly to regain his strength. The temperature, which had risen as high as 102°, remained normal after the fifth day; and on the seventh primary union of the wound, except along the track of the drainage-tube, was complete. He continued to improve steadily, was up on crutches; and on January 12th, six weeks after the operation, was reported to be gaining both strength and flesh. On the following day, however, the inner part of the stump became red, hard, œdematous and painful. It was manifestly a recurrence, but seemed to be limited to a small movable nodule, and its removal was therefore attempted by my successor at the hospital, Dr. S. B. Woodward. The whole stump proved to be infiltrated with soft broken-down material, similar to that found at the first operation, and the disease had extended round on to the buttock and involved the gluteal muscles. Everything possible was removed, but recurrence was noted again two weeks later. He gained temporarily in strength, left the hospital in February, and died at home the last week in March, eight months after the receipt of the original injury.

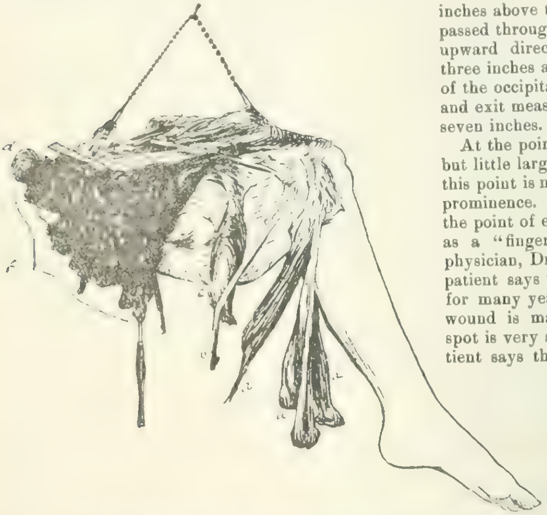

Fig. 2.
a, a, a, Inner ham-string muscles. *b*, Sciatic nerve. *c*, Biceps femoris. *d*, Head of femur. *e*, Tumor.

The examination of the tumor by Dr. W. S. Miller, the hospital pathologist, showed that it consisted of a large soft mass confined to the adductor muscles. The centre of this mass was composed of broken-down coagula, around which was a layer of soft, round-celled sarcomatous tissue containing numerous anastomosing blood-vessels. Diagnosis: angio-sarcoma.

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Clinical Department.

A CASE OF HEMIANOPSIA.

BY CHARLES M. HOLMES, M.D., NORTHAMPTON.

Mr. H. R., was wounded through the head by a rifle-ball when fourteen years of age, forty-five years ago. In passing an open window through which some men were firing at a target, his head intercepted a bullet which struck him in the right temporal region, at a point three-fourths of an inch in front of a vertical line from the right external auditory canal and two inches above the level of the same point. The bullet passed through the head in a backward and slightly upward direction, and came out in the median line three inches above the external occipital protuberance of the occipital bone, the distance between the entrance and exit measured on the convexity of the skull being seven inches.

At the point of entrance the wound was apparently but little larger than the bullet which caused it, and this point is now marked by a slight but distinct bony prominence. The damage to the skull was greater at the point of exit, where two fragments of bone as large as a "finger-nail" were removed by the attending physician, Dr. Rice, of Leverett, Mass., deceased. The patient says that these pieces of bone were preserved for many years, and he has often seen them. This wound is marked by a large pit in the scalp. This spot is very sensitive to pressure at times, and the patient says that a very slight blow there will cause a convulsion. According to the statement of the patient, Dr. Rice told him afterward that he saw on the grass "several spoonfuls of white brain substance lying there in the clotted blood."

Loss of consciousness was immediate, and no one expected that he would live. After a hard struggle of six months he was again able to get about; but he was hemiplegic, and this condition has remained, though he now has some use of his left leg, and can walk with the aid of a cane if he uses great care and keeps on a level and smooth surface.

The whole left side shows the results of the injury. He had so nearly attained his growth in height at the time of the accident that there is little if any difference in the comparative lengths of the long bones of the body; but there is a difference of from half an inch to two inches in the girths of the two sides, on account of failure in development and also on account of atrophy from disuse of the left side necessitated by the paresis of that side.

His tongue is not markedly affected, though he says he cannot manage his food so well if it is chewed in the left side of his mouth. Sensation is dulled on the whole left side of the body, though there is no complete anæsthesia. The left side feels numb and cold, especially if he is tired. The senses of taste and smell are impaired on the left side. Hearing is also a little impaired, but on both sides, and is perhaps due to other causes than the injury to the brain. The knee-jerk is exaggerated in both legs, and equal. No ankle clonus.

Soon after he was injured, perhaps immediately, epileptic convulsions came upon him, and have continued since. They begin on the paretic side, but become general, and are very severe. At times, also, he has attacks of epileptic mania, in which he is very violent and unreasonable. At these times he has false hearing and delusions of persecution. He recovers from these attacks with very incomplete memory of what has occurred. He is at all times very irritable.

The patient complains of poor vision in the left eye; and on examination it is discovered that he presents the symptom of left bilateral hemianopsia, with the line vertical and passing through the point of fixation. His pupils react readily to light and distance, and Wernicke's symptom is absent.

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Medical Progress.

RECENT PROGRESS IN LEGAL MEDICINE.

BY F. W. DRAPER, M.D., BOSTON.

DEATH BY DROWNING.

In a discussion of the subject of the resuscitation of those apparently dead by submersion, Professor Brouardel insisted that death by drowning presented itself under several distinct forms, according to the mechanism of asphyxia which predominated.[1] Indeed, the submersion may not cause asphyxia at all, but death may result the moment the individual falls into the water, the suddenness of the fatal effect depending on the influence of shock and of cold upon peripheral branches of the trigeminal and superior laryngeal nerves. In such an event, respiration and circulation are inhibited. Water does not enter the air-passages, and the person if rescued seasonably may be resuscitated.

A second mechanism of death by submersion has the following phenomena. The person sinks to the bottom of the water and remains there a brief time. During the first minute, the air-passages resist the intrusion of the water successfully, the muscles of respiration preventing this effect by their tonic contraction. This muscular spasm then ceases, and the water penetrates into the bronchi. But even under these circumstances, resuscitation is practicable if the rescue is prompt.

The third and most common variety of drowning is this: The individual struggles, tries to swim, sinks to the bottom, then rises to the surface; and in these irregular movements he causes contractions of the diaphragm which promote the regurgitation of the contents of the stomach and these pass into the windpipe when efforts at respiration are made. Water also enters the air-passages and the blood takes up a quantity equal to a quarter or a third of its own total amount. This effect is seen when comparison is made between the relative number of the blood globules in the normal condition and after drowning. In cases of drowning of this variety, the air-cells and bronchioles are filled with mucus and water in the form of fine froth and the cells of pavement epithelium in the mucous membrane undergo an appreciable degeneration in consequence of the passage of water through them. These combined conditions are such as to prevent absolutely a restoration to life by any known method of resuscitation.

DEATH FROM SUBMERSION IN FLOUR.

Dr. Ragnar Falck, of Lund, publishes in the *Nordiskt Medicinisches Arkiv*[2] the case of a man who had been buried in flour, who had fallen down into the room used for blending the various kinds of flour, and which was capable of containing 220 sackfuls. Rigor mortis was present in the body; fine flour was found in the hair, the external meatus, within the eyelids, in the nares, within the lips and all about the throat. The mouth and œsophagus were filled with "paste," the stomach was empty, the cerebral membranes and vessels were hyperæmic to a marked degree, the heart was small and contained a little dark blood in the left auricle, and the lungs were incompressible and full of blood. It is particularly interesting to note that microscopical examination resulted in finding flour in the smallest bronchial twigs. This circumstance makes the case resemble death from drowning. French medico-legal authorities, however, state that in cases of submersion in dust-like substances, as when children are buried in ashes, nothing enters the respiratory organs, and Berenguier and Jaudieu, after experimental studies, came to the conclusion that spasm of the glottis makes the entry of dust-like material impossible. Inferences, however, drawn from children's accidents, and from experiments with small animals, are hardly to be depended upon in cases of adults, and in Germany Casper, Hoffmann, and Maschka have published several cases of submersion in sand and similar substances, in which the material could certainly be found in the larger bronchi.

A NEW METHOD OF RESUSCITATION IN CASES OF DROWNING.

Laborde, of Paris, has demonstrated the practical utility of a new method of procedure for the restoration of those apparently dead by submersion. Having observed in his physiological experiments on animals that, in cases of suspended animation during anæsthesia, it was possible to stimulate the function of respiration by rhythmical traction on the tongue, he applied this knowledge to some cases of asphyxia by submersion and found the application to be both easy and satisfactory. The theory of the manipulation is that irritation of the base of the tongue, especially such as is effected by traction, stimulates the respiratory reflex. The details of the procedure are as follows: The tongue is seized either with forceps or with the fingers protected by a handkerchief or other similar fabric to prevent slipping and is then subjected to regular, rhythmical traction and backward movements, corresponding in frequency to the normal respiration. The teeth meanwhile are held apart by a spoon or other expedient adapted to the need, the object being to give room for forcible and vigorous to-and-fro motions of the tongue. The author urges persistency in the measures taken for the restoration of those apparently drowned and promptly taken from the water; and he insists that prolonged efforts will sometimes be rewarded even in cases that seem hopeless from the beginning.

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[1] La Semaine Médicale, August [illegible]

[2] Lancet, December 26, 1891.

THE DIFFERENTIATION OF TRAUMATIC COMA AND ALCOHOLIC INTOXICATION.

A reliable method of diagnosis whereby coma due to an injury to the head may be distinguished from the insensibility of alcoholic intoxication has a distinct medico-legal value and is especially useful in police-surgery. Dr. Von Wedekind, of the United States Navy, describes a method of distinguishing these two conditions which, though not new in its clinical relations, is a novel and original application in cases of emergency.[3] He writes:

"By pressure upon the supra-orbital notches, compressing the nerve, a diagnosis of alcoholism may with absolute certainty be made in a few seconds, thus differentiating on the spot between coma due to alcoholism, injury or disease. Where no result is obtained, one may, with almost positive certainty, look for some other cause of coma. . . . A case of alcoholism pure and simple, will, upon the application of this pressure, immediately show very evident signs of life, and, be the coma never so deep, the effect of the alcohol will for a short time be sufficiently removed to permit a thorough and rapid examination. The absence of result from this method should at once cause great suspicion of some cerebral trouble due to injury or disease."

PROOF OF PERSONAL IDENTITY BY MEANS OF FINGER-TIP MARKING.

Following the lead of Galton in his researches upon the papillary lines at the finger-tips as evidence of identity, Forgeot has made some observations having a practical bearing medico-legally.[4] The principle of these observations consists in developing and recording the traces left upon various receptive objects by the hand which has been placed thereon. The author recalls the fact that normal perspiration contains a considerable number of components, fatty matters, salts and the like, some of them entering in relatively large amount; if now a hand moist with sweat touches a paper or glass surface, the aqueous and volatile parts of the secretion escape by evaporation, but the solid matters and fixed principles remain at the place of contact. The orifices of the sweat glands are situated at the ridges of the papillæ and the traces left by the moist hand will reproduce exactly these papillary elevations. For the purpose of making these traces manifest as a record, Forgeot recommends the application of a thin layer of ordinary ink to them; this brings out the imprint more or less clearly according to the more or less moist state of the hand used in the observation. Season of the year has some control over the success of the method, warm weather being more favorable than cold. Individual peculiarities also are to be taken into the account. The hands of criminals are well adapted for the process, because, through reflex influences, a certain degree of moisture of the palm follows the commission of crime. For revealing the imprint of the naked foot upon a wooden surface, Forgeot advises the use of an eight per cent. solution of nitrate of silver, followed by exposure to sunlight. The marks of the finger-bulbs on glass surfaces are particularly easy to study and it is possible by the use of hydrofluoric acid to make the marks indelible. These various methods are believed by the author to be valuable in the making of records of the criminal classes, supplementing the anthropometric data now officially required in France and to some extent in other countries.

SUDDEN DEATH WITHOUT DEMONSTRABLE CAUSES.

A contribution to our knowledge of this subject has been made by Bonvalot who has studied the topic both pathologically and in its medico-legal relations.[5] Some of his observations refer to sudden deaths following an intra-uterine injection after childbirth. Thus a patient of Bruntzel, four hours after her delivery, having already received without any disturbance one intra-uterine injection, passed into a fatal syncope when about a litre of the fluid of a second injection had been introduced. A similar accident occurred to Cory with an injection of prechloride of iron, and to Rogers with one of tincture of iodine. In each of these cases, the autopsy resulted negatively, revealing nothing abnormal.

But sudden death has been observed during parturition, as well as after it; and syncope was the only explanation. Professor Brouardel is quoted by Bonvalot as having recorded such a case, the patient dying very suddenly during a vaginal examination immediately after her admission to the maternity. The most careful autopsy failed to discover any lesion adequate to explain the death. Brouardel recalled in connection with this case an instance in which a y6ung girl suddenly succumbed during an injection with a glass syringe in the course of treatment for a vaginitis after an attempt at rape.

In explanation of these unexpected accidents, Bonvalot recalls Brown-Sequard's observations upon the inhibitory effects of blows on certain parts of the body, such as the larynx and abdomen. The uterus appears, according to this writer, to possess a similar inhibitory sensibility; and it is believed to be through this capacity, favored by other conditions, such as previous hæmorrhages, pains, emotions due to fear and the like, particularly in attempts to procure abortion, that sudden deaths of the class mentioned are best explained. The medical inspector, therefore, in such cases, where the autopsy results negatively and fails to give a cause for the death in manifest lesions, may interpret the fatal result on the theory of inhibition and may thus relieve the accoucheur from the imputation of neglect or unskilfulness, provided the usual precautions have been taken by him in the care of his patient.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

REGULAR Meeting, December 21, 1893.

DR. W. S. THAYER read a paper on

THE CLINICAL VALUE OF EHRLICH'S METHOD OF EXAMINATION OF THE BLOOD.[1]

DR. WHITNEY: I, for one, feel deeply indebted to Dr. Thayer for the paper he has just read, which embodies so clearly what is known upon the subject

[1] See page 156 of the Journal.

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[3] Lancet, August 6, 1892.

[4] Revue Scientifique, July 2, 1892.

[5] Journal de Med. et de Chirurg., June 10, 1892.

proved by his own practical experience. When a picture has been so well drawn as this, it is only minor details that can come up for discussion, and it is a mistake to insist upon this too strongly.

In practice I think it will be found that the double stain with an alcoholic solution of eosine and then with an aqueous solution of methylene-blue will be the one generally employed by practitioners, as the simplest in every way. In examining the colored preparations, it is only necessary to place them on the slide on a drop of water, if Canada balsam is not at hand. The latter, of course, gives clearer and more brilliant pictures.

The fact of leucocytosis being associated with inflammatory conditions is of interest; and I would ask Dr. Thayer if the enlarged spleen so often found stands in any direct relation to the increase of leucocytes? Only to-day I made the autopsy of a case of double pneumonia, where the spleen was very small, firm and dry (suggesting amyloid, which the tests failed to reveal). The condition of the blood before death I was unfortunately unable to learn. But it would be interesting if a leucocytosis failed here.

Dr. J. J. Thomas: I feel there is very little I can say. Perhaps I may mention some minor points of practical detail which may be useful to general practitioners who otherwise would be frightened away from the thing. I have found myself that it is much easier to make your dried specimen upon the cover-glass if one, after pricking the finger or lobe of the ear, takes an ordinary slide and passing the end from one side to the other across the drop of blood, uses that to spread the blood upon the cover-glass. I think the unpractised person can spread it more evenly in this way. I think with Dr. Thayer and Dr. Whitney that the eosine and methyl-blue stain is the one most generally useful. This double stain shows practically everything you wish to know.

Possibly some of us, in reading the articles upon this subject, may run across the term "color-index." Dr. Thayer has practically mentioned it. It is simply the relation of the amount of diminution of the hæmoglobin compared with that of the red corpuscles, the amount of diminution of the hæmoglobin being the numerator, that of the red corpuscles the denominator. Therefore in chlorosis, for example, where the hæmoglobin is more diminished in proportion than the number of corpuscles, we find the color-index less than one, and I have found usually in cases of chlorosis where I have examined that this diminution in the color-index is greater than in secondary anæmias. Several writers say the color-index is not diminished at all or greater than one in pernicious anæmia, I have seen only one or two cases of pernicious anæmia, and I cannot state from my own experience. In leukæmia, contrary to Ehrlich's statement that in the eosinophilic cells we had a positive diagnostic point, I think it has been positively shown by later observers that that is not so, but the commonest form of leukæmia is that in which we find all varieties of the white cells increased, and I think that is the thing which will enable most of us to make a diagnosis almost at a glance. We find the polymorphic character of the white cells is very marked; they are not only increased, but we see in one field every kind, large myelogenous cells, etc., and I will state here that in leukæmia I have seen what I do not remember to have found in any other disease of the blood, and that is the eosine granules present in a large number of the small cells. Usually in the normal blood we find eosine granules in the large cells, the so-called polynuclear forms, while in leukæmias we frequently see the small cells contain the eosine granules. The eosinophiles in normal blood seem to average about two per cent. A great deal of importance has been attached to the presence of these cells and it certainly is shown that they are increased relatively to the other cells in other diseases than leukæmia. Most marked among these are the skin diseases. Neusser (?) in Vienna has found them largely increased in the skin itself. I think that is probably why in scarlet fever, as Dr. Thayer has said, we find them increased in the blood. In asthma we find them frequently in the sputum, but in the blood Canon (?) says they are not increased.

In regard to other diseases aside from the so-called blood diseases, Dr. Thayer has spoken of the leucocytosis of inflammation, and of the non-existence of this in typhoid as a usual thing. In pneumonia, I noticed recently that Von Limbeck (?) of Prague, states that the leucocytosis we find in pneumonia diminishes usually before the crisis comes, preceding it by two or three hours, sometimes more; that in cases of delayed resolution where the temperature falls the blood count shows that the leucocytosis still persists, and that in the fatal cases it increased till death. This, if confirmed by future observations, may prove to be a useful prognostic point.

In new growths what we usually find is a simple anæmia without much change in the white cells of the blood. However, I have found, in some cases where the lymph glands were involved, that the small cells, the so-called lymphocytes, were markedly increased in proportion to the other white elements of the blood; and this I think we may sometimes find to be of use in diagnosis.

Dr. Rotch: Poikilocytosis I have heard is not regarded as of so much diagnostic importance as formerly, in that it takes place after the blood is drawn. I should like to know of how much importance Dr. Thayer makes it.

Dr. Thayer: Poikilocytosis cannot, I think, be considered a point definitely diagnostic of any one particular disease. I doubt very much if the poikilocytosis, properly speaking, does occur after the blood is drawn. It is seen present when the quickest methods are employed to prepare the blood, and it is quite a different matter from those changes in shape occurring when the blood meets moisture or impurities on the slide. The crenation which one sees in blood corpuscles in imperfectly prepared specimens is often confused with poikilocytosis. Poikilocytosis in itself is not diagnostic of any particular disease, but I think it is important as an evidence of a considerable degree of anæmia, and in pernicious anæmia it reaches a degree of development seen in no other condition.

Dr. Rotch: I had in mind a case where the general symptoms were those of an anæmia of very high grade in a young baby of about ten months. In this case the freshly-drawn blood showed a considerable degree of poikilocytosis, but I did not know whether that would be a point of diagnostic importance.

Dr. Thayer: I think it would be of importance only as showing a severe anæmia.

Dr. F. C. Shattuck: What hæmometer do you use?

Dr. Thayer: The Fleischl hæmometer. Certain errors which are common and unavoidable in its use have recently been pointed out, but I think it is as satisfactory a hæmometer as there is.

Dr. Shattuck: At what do you estimate the possibility of error in the Fleischl?

Dr. Thayer: I don't know that I can express it in figures. Sehio, at the Eleventh Congress for Internal Medicine at Leipsig, showed that the error was sometimes considerable, increasing with the diminution in hæmoglobin. One must be familiar with the use of the instrument to make a valuable estimate. Individuals who never used one before I have seen differ as much as ten per cent.

Dr. Shattuck: I have had one a number of years and have felt that there was a source of error from ten to fifteen per cent. in its estimates; but I am glad to hear there is as yet no better instrument than that.

Dr. Rotch: In cases of scorbutis where Dr. Wentworth has examined the blood for me, the oligocythæmia will disappear to a great extent while the oligochromæmia remains. Is that significant of anything special? I suppose these cases were getting better, but were not yet cured.

Dr. Thayer: In all secondary anæmia which I have seen, the return to normal of hæmoglobin has gone at a much slower pace than that of the corpuscles.

Dr. Rotch: Do the granules in an ordinary leucocytosis show any staining with eosine?

Dr. Thayer: In an ordinary leucocytosis in the human blood the elements which are increased are the polynuclear leucocytes with granules which do not stain with acid or basic coloring matters, but only with mixture of the two, neutrophilic granules. In splenomyeloginous leukæmia there is almost always relatively about the normal proportion of eosinophilic leucocytes. Splenic myeloginous leukæmia is the only disease where there is a very great increase in leucocytes with a relatively normal number of eosinophiles.

With regard to Dr. Whitney's question about the spleen, I think the exact relation the spleen plays to blood formation is not altogether settled. It is hard to say just what elements in the blood come from the spleen and what do not.

With regard to Dr Thomas's remarks I am interested to hear him say he found in the cases of chlorosis he examined that the hæmoglobin showed a diminution more marked than in most secondary anæmias. Certain writers have tried to show that there is absolutely no difference between chlorosis and ordinary secondary anæmias. That it may be absolutely impossible to differentiate between the two in any one case I think is true; but as a class, I think there is no doubt that the average diminution of hæmoglobin in chlorosis is greater than in the secondary anæmias.

With regard to the small eosinophile cells in leukæmia, I think it is undoubtedly true that the presence of these small eosinophilic cells is quite marked. One sees smaller eosinophilic leucocytes in leukæmia than in other conditions; but all the elements, the neutrophiles as well, show most extraordinary variations in size.

With regard to the increase of the eosinophiles in skin diseases, I will merely say I have seen in several cases the eosinophiles in the skin itself very prettily shown, in considerable numbers; and I supposed it is owing to the skin affection that in scarlet fever this increase of eosinophiles is said to take place.

With regard to the statements of Limbeck about the decrease of the leucocytosis just before crisis, I remember one interesting case where in Neusser's ward in Vienna we were shown a case of pneumonia, temperature 104°, who had had a marked leucocytosis. A dried specimen of blood was taken and heated and shown, to demonstrate the leucocytosis, which was found to have disappeared in great part. The crisis followed immediately. It is an extremely interesting fact if true.

Dr. Shattuck: One points occurs to me, that in any case that a gentleman sees where he would like an examination of the blood it is not absolutely necessary to have cover-glasses. I have got a piece of window-glass and succeeded in getting specimens in that way that could be carried home. In one case of lymphatic leukæmia to which Dr. Thayer alluded — a case of very acute leukæmia in a child, which ran its whole course in about five weeks — I got some of the blood on a piece of window-glass. Of course, it is a very easy matter to carry a few cover-glasses and slides, as Dr. Thayer suggests.

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THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Monday, January 23, 1893, Dr. Charles Carroll Lee, President, in the chair.

Dr. Simon Baruch read a paper on

PRACTICAL DATA ON THE APPLICATION OF WATER IN SOME INTRACTABLE DISEASES.

The recent revival of hydrotherapy is an interesting phase of therapeutics in this country. Three years ago the first paper, giving a general review of the uses of water external and internal, by lavage, irrigation, baths, etc., was read before this Society. Therefore the history of this subject is closely bound up with the history of this Society. Articles on this subject have now become numerous. A new journal has appeared on balneology; and a department in that magnificent specimen of American journalism the *Annual of the Universal Medical Sciences*, chronicles the advances in this therapeutic specialty. Indeed, a recent letter from Dr. Winternitz, Professor of Hydrotherapy in the University of Vienna, refers to the fact that more is now done in this country for hydrotherapy than in Germany, its birthplace. For this reason I venture to offer some practical remarks on this subject.

The chief, though not the only aim of hydrotherapy is to stimulate or give tone to the nerve centres. Since all vital energy emanates from the latter; since the proper performance of all the organic functions depends upon their activity, it is fair to deduce important therapeutic results from this agency, which influences it so potently. The main question is, does the application of water to the cutaneous surface stimulate the nerve centres? That this is a trite physiological fact, is daily observed in the effect of a dash of cold water in reviving a case of syncope. Here we have a brief shock to the sensory peripheral nerves followed by reaction whose effect is transmitted to the central nervous system and thence to the respiration, deepening it and the circulation, restoring the failing pulse; thus the temporarily dormant vital powers receive a stimulus whose appreciation must convince the most sceptical by its very simplicity. At this time the reader did not propose to dwell upon the various modfications which change in the temperature of the water applied to the cutaneous surface may produce, nor the remarkable difference of effect resulting from the increase of the pressure under which it strikes the skin, nor the valuable results of changes in the duration of the procedure.[1] Suffice it to say, that we have in the external use of water a therapeutic agent so flexible that it may be adapted to the most varying types and forms of disease. The reader then presented brief outlines of cases in order to give a view of the practical application of hydrotherapy in some intractable chronic diseases, to demonstrate its flexibility and to point out the methods of adapting it to varying conditions.

INTENSE CHLOROSIS.

Miss H., age twenty, ill two years, and under constant treatment by gynecologists in Harrisburgh, Baltimore, and Philadelphia, was brought as a last resort to Dr. T. G. Thomas, to be placed in his sanatorium. Dr. Thomas discovered no uterine trouble, and referred her on June 8, 1892, for hydriatic treatment, with a diagnosis of chlorosis of aggravated type. Local, medical and institution treatment, iron, arsenic, diet, massage and change of air had been tried in vain. Although the patient was plump, a more pallid creature could not be imagined. Appetite was poor, bowels irregular, her sleep disturbed, and she was subject to frequent (hysterical) fainting-spells. The slightest exertion produced difficult breathing and rapid heart-action. Menstrual flow was regular, but scant and very pale. Blood examined by Fleischl's hæmometer, registered thirty-one per cent.

June 10th. Preparatory treatment by hot-air baths and douches, to educate the patient's reactive capacity, was ordered. Fainting in the hot-air bath, she was removed; a spray douche of two seconds at 64° with twenty pound's pressure was rapidly passed over her, in a sitting posture. She again fainted. Friction produced no reaction.

On the following day a milder course was pursued. She was gently wrapped in a long-haired woollen blanket, for forty-five minutes. Parts of the body were successively uncovered and splashed with water at 60°, thrown with some force from the hollow hand of the attendant. This was followed by friction, and continued until the whole body had received the ablution and friction. The same treatment was continued on the 11th and 12th, when she fainted twice. This was repeated, without fainting, until the 16th of June. She was again placed in a hot-air bath (167°) with a cold compress around the head, and given frequent sips of ice-water. The head not being subjected to the heat, the patient was enabled to breathe the cool air which permeated the room. When the cutaneous vessels became turgid, she was seated in a tub containing eighteen inches of water at 100°, and thoroughly rubbed for three minutes. This was followed by an ablution at 60°, good friction, drying, and general massage for fifteen minutes. She fainted twice during these procedures.

July 8th. The last treatment has been continued, reducing temperature of the spray douche daily one degree; to-day she had an air-bath (160° F.), followed by the spray douche under thirty pounds of pressure for five seconds, beginning at 80° and rapidly reduced to 50°, followed by fifteen minutes' general massage. She reacted well and felt comfortable.

July 14th. Same treatment has been continued. To day she had a hot-air bath (175°), followed by a rain-bath of thirty seconds (94° reduced to 69°), and then a spray douche of ten seconds (79° to 54°) and general massage. Reaction good.

July 30th. This treatment has been continued, until to-day she took a jet douche at 45° without flinching. Being absent at Long Branch, I wired to Dr. S. T. Armstrong to examine her for me. He reports: "Miss H. looks quite well, eats and sleeps well, and is certainly improved since I last saw her. The comparision test indicates about one hundred hæmoglobin."

August 1st. Miss H. left for her home in Pennsylvania.

This case, the reader thought, certainly illustrated:

(1) The effect of the douche in improving the nutrition.

(2) That hæmatosis may be enhanced by the stimulus conveyed from the periphery to the nerve-centres, and thus reflected upon the blood-making functions, as has been well shown by Winternitz, Thermes and others.

(3) That the most feebly reacting patient may by perseverance and proper adaptation of the hydriatic procedure, become accustomed to this treatment. The danger of shock from cold water is proven to be chimerical by this case.

If this fragile and sensitive young woman could be accustomed to the douche by beginning with mild procedures, no chronic case that is not in extremis, could fail to respond to it in the reader's estimation.

The reader also gave reports of eight other cases treated by hydrotherapy: one of nervous dyspepsia; two of diabetes; one of sexual neurasthenia; one of incipient phthisis, apparently cured; one of advanced Bright's disease, with remarkable results from the hot-blanket pack; one of subacute nephritis; one of hystero-epilepsy.

Dr. Mary Putnam Jacobi: One can hardly do better than to repeat what Dr. Baruch has said in almost the words employed by him, that in water by means of the various forms of its application we have a type of almost every other possible therapeutic measure, and only one remark should be added to mitigate the fanaticism of certain uneducated water enthusiasts; namely, that the water treatment does not go far enough to meet all the indications. I have followed with the greatest interest Dr. Baruch's various contributions to the subject of hydrotherapeutics, and have been exceedingly delighted to see that the subject has begun to be taken up seriously in New York City, where, I think, until Dr. Baruch began to study and investigate it, it had been much neglected. It is curious that German physicians who think water is good for serious and intractable diseases should regard it as dangerous in ordinary hygiene. That seems to be a notion prevalent among the German population of this city and also in Germany. I would cite the remark of Uffelmann recommending with caution that children should have the face and neck washed every day, while the possibility of washing the child's whole body every day seems never to have occurred to him. In another treatise by a German author it is said to be exceedingly good to have a courage of cold-water treatment a few weeks, but to be continued permanently it is altogether too exciting to the nervous system. And this superstition that the cold bath is too exciting to be tolerated and that it is something which people can only gird themselves up to with great energy and strength of will is very frequently encountered among the laity and many physicians. I remember having rather an acrimonious controversy with a doctor because I had advised the cold-water douche for a lady patient. She was a typical neurasthenic. He had once had the same trouble, he said, and had suffered such tortures from the cold douche that he should never be cruel enough to ask that a delicate girl be subjected to it. I think Dr. Baruch must have had great influence over the young lady whose case he had just related to induce her to continue the treatment after she had fainted under it on several occasions. My own observation has been that if patients feel at all tired after they have undergone one seance with the water treatment, they consider that they have entirely gone to pieces, and will not discuss the matter further lest they be persuaded to continue it. It seems that where persons feel so badly after beginning the cold-water treatment it is because the vaso-motor system of nerves has been excited out of proportion to the excitation which should be conveyed to the spinal nerve centres. It is an elementary truth to which Dr. Baruch has referred, that the characteristic result of the application of cold water to the skin is a very great stimulus to the nerve centres and dilatation of the cutaneous vessels, but in some instances, instead of there being excitation of the centres in the cerebro-spinal system of nerves, the excitation is expended upon the vaso-motor system, producing contraction of the blood-vessels and diminished blood supply as a tertiary rather than as a secondary effect, so that the subject remains cold or chilly and the surface pale. There is also apparently contraction of the blood-vessels of the brain which may account for the intensely wretched feeling from which the person suffers. It is evidently entirely improper, as Dr. Baruch has pointed out, to begin the treatment in such cases by applying cold to the surface. One must begin with heat. I suppose when the blood-vessels on the surface are mechanically dilated by heat that there is such a degree of stimulus of the cerebro-spinal nerves they are not exhausted by the subsequent application of cold.

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[1] See "The Uses of Water in Modern Medicine," by Simon Baruch, M.D. Detroit: George S. Davis.

It seems to me the value of hot water in the treatment of Bright's disease is due to lowering the blood tension by dilatation of the blood-vessels on the surface of the skin. I cannot see that it acts directly to make the kidneys better, but that by lowering the blood tension it overcomes one of the elements of the disease.

I would ask Dr. Baruch his opinion of an assertion by Dr. Weber, of London, that persons who have commencing uric-acid deposits should not be subjected to the use of cold water, Dr. Weber advising only hot water. Would Dr. Baruch regard this simply as a fancy?

Dr. Frederick Peterson: Although I came in too late to hear the paper read, yet being acquainted with the views of the author, I am sure I should coincide with most of his statements. I am particularly in favor of hydrotherapy in nervous and mental diseases. I think there are many conditions of mental disorder in which hydrotherapy is of great value. In incipient melancholia we have no other agent quite as efficient as prolonged warm baths. In motor excitation of acute mania there is, I think, no agent quite as useful as the hot wet-pack. I have found by experience that it is much better than the straight-jacket and injections of hyoscyamia. In a conversation with Professor Winternitz, of Vienna, who has had much experience with hydrotherapy in chronic diseases, he told me that fully two-thirds of his cases were of nervous diseases, that he found this agent successful in many diseases considered incurable. Not that it cured them, but that it alleviated many of the symptoms. Hydrotherapy should be much more used. It is valuable in chorea, epilepsy, and many spinal disorders.

Dr. A. D. Rockwell: It would be a good thing if some one would enumerate all the drugs which have come into vogue, had their day, and then were abandoned. It would show much useless drugging has been going on, and the superiority of rational methods. As to therapeutic methods other than medication, we cannot but be struck by their permanency. Hot and cold water, exercise, etc., have been known since the beginning of medicine, and the more we know of them the better do we appreciate them. I quite agree with Dr. Petersen as to the great value of water in nervous conditions. I would like to refer to a special use of water, a mechanical use it is true, but yet one of great value, namely, intestinal irrigation. We all know the vast misery from chronic constipation, whatever it may arise from, and we know how much the person is improved by having the bowel flushed. It does seem unphysiological to throw such large quantities of water into the rectum; it does interfere with persistaltic action, and many who have commenced it have had to give it up. To prevent the occurrence of paralysis of the bowel I have found nothing better than electricity applied by the bipolar method.

Dr. Charles C. Ransom: I can confirm what Dr. Baruch has already said, by my experience at Richfield Springs where I have occasion to use water in many cases during the summer. I can speak particularly of its value in nervous conditions. The few nervous cases which I have seen there have been mostly of neurasthenia in business men worn out by close attention to their affairs. In them I have used the cold douche with the most excellent effect. It relieves their insomnia, increases the nerve tone, and aids digestion.

Dr. Baruch: My object in reading the paper was to give practical details and demonstrations, showing that water can be applied to the most delicate subjects. I have seen this demonstrated very often at the Montefiore Home, where a condition of admission is the incurability of the disease. There we find patients who never took a bath before, gradually become accustomed to taking it at a temperature of 65° F. every day. I would impress the impropriety of using the terms cold water or warm water. We do not tell patients to take quinine; we give them the dose. So special directions should be given as to the temperature at which a bath should be taken, the necessity for securing reaction, etc.

Referring to Dr. Jacobi's question, I may say that no person is better able to judge than she of the influence of water upon tissue metamorphosis, about which she wrote the best article in the English language ten years ago.

In my propaganda for hydrotherapy I have in some quarters been charged with unwarranted enthusiasm. If conscientiously proving all remedial agents in vogue and proposed during an active general practice of thirty years entitles a man to an opinion on therapeutics, I would reiterate with emphasis — the conclusion given in Hare's "System of Practical Therapeutics" — "we possess in this method a valuable auxillary to method-the treatment of many, *though not all*, acute and chronic maladies. In many chronic diseases it has proved so successful after failure of medicinal remedies, *that no case should be given up as hopeless until hydrotherapy in some form has been tried.*"

This evening I have endeavored to show that a rational, cautious use of water in the treatment of many intractable diseases is free from shock or other unpleasantness, and leads to surprising results.

◆

Recent Literature.

Geographical Pathology: An Inquiry into the Geographical Distribution of Infective and Climatic Diseases. By Andrew Davidson, M.D., F.R.C.P., Ed., etc. Vol. I, Europe, Northern and Western Asia, India, Ceylon, Burma; Vol. II, South-eastern Asia, Indian Archipelago, Australia and Polynesia, Africa, America. New York: D. Appleton & Co. 1892

The object of this work, as stated in the introduction, is to sketch the geographical distribution of infective and climatic diseases, and to trace the influence of temperature, rainfall, altitude, and soil conditions on their prevalence, character, and epidemic spread. Organic diseases of the heart, kidneys and nervous system, which are not, as a rule, caused by infection and are not materially influenced by soil and climate, are only noticed when their exceptional prevalence in a particular country or locality appears to be the result of infective processes or of climate.

Even with the limitation to infective and climatic diseases, the two royal octavo volumes — one of 500 and the other of 1000 pages — give little enough space for the execution of the task which the author set for himself.

Wherever accessible, the author has drawn his information from the official returns of the statistical departments of the different countries. For instance, for the United States — to which about 75 pages are given —the source of information is the census of 1880; and the labors of Dr. J. S. Billings on that census are duly recognized. Indebtedness to Hirsch's "Handbuch der historisch — geographischen Pathologie," and to Lombard's "Traité de Climatologie Médicale," are frankly acknowledged.

The author was formerly visiting and superintending surgeon in the civil hospital, and professor of chemistry in the royal college at Mauritius. He has written the most important work on the geographical distribution of infective and climatic diseases in the English language.

The pages contain, of course, a great quantity of statistical matter, which, as far as our examination has gone, seems to be generally correct. The author is apparently content to quote at second-hand, even when the original must have been accessible. For instance, the reference to Dr. Bowditch's law of soil-moisture for consumption in the New England States is taken from Hirsch. It is true that one can quote from Hirsch with more confidence than from many so-called authorities; but an evident personal study of the original on the part of the author, inspires more confidence in the reader who fails to see the advantage of having a statement filtered from the English language through the German and back into English.

The book contains much valuable information, and should be of great assistance in aiding medical men and others to look at the diseases [illegible] way.

Influenza: its Pathology, Symptoms, Complications and Sequels; its Origin and Mode of Spreading; and its Diagnosis, Prognosis, and Treatment. By Julius Althaus, M.D., M.R.C.P. (Lond.). Second edition, much enlarged. London: Longmans & Co. 1892.

The second edition of this book goes into the subject somewhat more fully than the first, and has appended a considerable bibliography of the subject. The author puts the word *influenza* on the title-page, but uses the terms *grip*, *gripped* and *grippal* in the text. The term *grip* is used in its pure English signification. The word is in many ways more convenient, more concise than influenza; they are neither of them altogether satisfactory.

The author has had a large and interesting experience with the nervous complications of influenza. He accepts the theory of contagion, but avoids any explanation of the serious contradictions and really difficult problems with which that theory leaves us confronted.

A Pocket Medical Dictionary. Giving the Pronunciation and Definition of about 1,200 of the Principal Words used in Medicine and the Collateral Sciences. By George M. Gould, A.M., M.D. Philadelphia: P. Blakiston, Son & Co. 1892.

This dictionary is as condensed as is consistent with good printing. The definitions are almost all of them made so short that one word takes only one line. It is neat, compact and could not fail to be of practical value to any physician. It is not, of course, intended to take the place of a larger medical dictionary, as no word is described in more than ten or a dozen words. Complete tables are given of doses, the muscles and nerves of the body, and of the more common bacteria.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P. (Edin.). Vol. II, Part I. Edinburg: Printed by T. & A. Constable at the University Press. 1892.

We have already noticed the different parts of the first volume of this work. With the present part the author enters upon the second volume. This part treats of Scrofula, with two plates; Unilateral Hypertrophy of the Skull, with two plates; Measles, with one plate; Alterations in the Fields of Vision, their clinical significance and importance, with two illustrative cases and perimeter charts showing alterations in the fields both for white and for colors in cases of hemianopsia. In addition there are plates showing the naked-eye appearance of the brain in two cases of lesion of the half-vision centre; a series of transverse vertical sections through the brain in a case of lesion of the half-vision centre; perimeter charts showing the fields both for white and for colors in cases of central amblyopia and lead poisoning; the cutaneous eruption of secondary syphilis.

The second volume will be issued in three instead of four fasciculi, will contain at least 128 folio pages, and at least thirty plates. The author expresses the hope that the profession throughout the world will support him in his arduous and (financially) serious undertaking.

THE BOSTON

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FLIES AS AGENTS IN THE NEW YORK CHOLERA EPIDEMIC.

In the mass of articles which have been written on the work done in connection with the recent epidemic of cholera in Europe there are two which seem to throw light on the spread of the disease in a way hitherto overlooked. And the application of this gives a rational explanation of the "sporadic" cases in New York City during September last, in spite of a rigorous quarantine.

It occurred to us, as probably to many other people, that the common insects might act as carriers of contagion to points distant from a centre of infection. And it was with great interest, therefore, that the articles were received, which placed the possibility of this on an experimental basis.

The first experiments were those of Simmonds,[1] who, after allowing flies to feed on cholera dejections, placed them in a large, clean flask. At intervals, from five minutes to an hour and a half, he took one of the flies out and placed it in a suitable culture medium, and in every case obtained large numbers of the characteristic cholera bacillus.

These facts have been further studied by Sawtschenko[2] who proves conclusively that the bacilli are not only taken into the body of the fly and pass through it without any loss of their active properties; but also that in all probability they multiply during their sojourn there. Very numerous colonies were obtained as *late as the third day* after feeding. The species which took most naturally to this sort of food was the flesh-fly which abounds about the meat markets.

We have been able to learn very little as to the distance that flies actually travel or how much they change about from place to place. In a letter from Professor Packard, to whom the subject was referred, he says, "The rate of speed of *Musca domestica* is 5.35 metres per second, according to one observer. This would give about a mile in five or six minutes, or about ten miles an hour. Flesh-flies are a little more vigorous. Any of the flies could probably scent their food or decaying bodies for several miles, and might fly over twenty or thirty miles in a day, especially if aided by winds."

From what has preceded, it seems clear that the possibility of flies carrying cholera has been proved.

The history of the outbreak in New York is given by Dr. Biggs.[3] "On August 31st the *Moravia*, and on September 3d the *Rugia* and *Normannia* arrived, all with cholera on board. The first person affected in New York City was taken ill the evening of September 5th, five days after the disease was in the harbor, and died September 7th. During the four weeks following, six other cases occurred in New York, and one case in New Brunswick, N. J., in which the cholera bacillus was found. Three others were regarded as such from their clinical symptoms, making eleven, and all among the poorer classes."

Each case was carefully examined and investigated by the board of health; and "they were unable to find any satisfactory way to account for the infection. . . . The cases occurred in widely separated parts of the city; and in no instance was there the slightest suspicion of association. . . . There was a striking association in the occupation of the persons affected, with the food trades, especially animal foods. . . . The biological examination showed the bacillus to be in every way identical with that from the cases from the ships."

The facts in the above record which have a bearing on the probability of the cases having originated through the agency of flies, are:

(1) The occurrence among a class of people who would probably be less careful of the contamination of their persons and food from such a source.

(2) The association with the meat trades, which would tend to draw the kind of flies most ready to take up the cholera bacilli.

(6) The irregular distribution throughout the city, the furthest case being within the limits of an easy day's journey for a fly.

The outbreak is farther interesting as the ordinary channels of infection, personal contact and contamination of the water-supply or ground-water, can with certainty be excluded, thus narrowing down the problem to one of atmospheric transmission. If the wind is taken as the agent (aside from the fact that the prevailing wind was from the west through the north to north-east from August 31st to September 5th), it is incredible that enough bacilli could have been carried together to the distance where the first case occurred to do any harm if they could have withstood the dessication during the transit. On the other hand, a single fly can contain enough active bacilli after three days to produce a fatal case, and his association with man and his food renders such a mode of infection very possible.

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[1] Deutsch. med. Woch., 1892, s. 931, quoted in the Journal, November 17, 1892, p. 490.

[2] Centralbl. f. Bakt. u. Parist., Bd. xii, s. 893.

[3] American Journal Medical Sciences, January, 1893, p. 63.

It is readily acknowledged that many links in the chain of absolute proof are wanting; but now that attention has been drawn to the subject, it is felt that the future may throw more light on it. For the present, the theory offers a rational explanation of such cases as occurred in New York in September last, and gives something else of a tangible nature for the consideration of preventive medicine.

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A NOVEL EXPLANATION OF CHOREIC MOVEMENTS. A NEW TREATMENT FOR CHOREA.

Prof. Horatio C. Wood, of Philadelphia, who has been devoting much attention to a study of the mode of production of choreic movements for several years past, has arrived at a primary conclusion, which appears thoroughly logical, and which taken as a whole, affords a fine illustration of inductive reasoning. He announced recently,[1] at his clinic at the Hospital of the University of Pennsylvania, that he had made what might prove to be a discovery of considerable practical importance with regard to the pathology of chorea.

The various steps, or stages of development, leading to this hypothesis are of great scientific interest. Some years ago, he had made a number of experiments upon dogs, and succeeded in demonstrating, that these choreic movements had their origin in the spinal cord. After dividing the cord, in a dog suffering with chorea, the movements continued in the posterior extremities as before, save that, after the division of the cord, the muscular movements in the fore and hind limbs were no longer synchronous in their rhythm. In the human subject, Dr. Wood distinguishes two forms of chorea: first, those cases in which the muscular movements are violent and, to a certain extent, correlated so as to seem almost purposive — these are due to cortical lesions in the motor regions of the cerebrum; and, secondly, those in which the muscular contractions are finer and more rhythmical, and are aggravated by attempts at voluntary movements — these are spinal in character. The latter variety, commonly recognized by the term St. Vitus's dance, is rare in adults but common in children, and is analogous to that which is encountered in the lower animals.

With regard to the common form of chorea in children, Wood claims that the choreic movements are caused by a paralysis, or depression, of the inhibitory function of the cells of the spinal cord. He directs attention to the physiological fact that, in the spinal centres, as in the brain, there are motor cells and also others which inhibit or arrest the discharge of motor impulses. In illustration, he cites the analogy of the heart, in which, after a period of functional excitement with discharge of force and destruction of tissue, there is a period of functional quiet with repair of tissue; the accelerator nerve stimulates to functional activity, the inhibitory nerve to functional rest and repair. In chorea there is undoubtedly functional weakness of the motor cells; but there is also weakness, possibly greater weakness, of the inhibitory cells. When a choreic child makes a purposive, prehensile movement, the muscular contractions are exaggerated so that the hand, for instance, will move through a much wider range of motion than it would in health, compelling the child to make several attempts before succeeding in its purpose. The wider range of motion in this case is evidently due to a failure to arrest the flow of the motor impulse at the proper point; in other words, to defect of inhibition.

Having formulated this hypothesis the next step was to establish its truth, experimentally. He first recalled his therapeutic teachings as regards the action of quinine and atropine upon the reflex phenomena. He accepted as established, Chaperon's discovery that quinine has the property of lessening reflex activity, by stimulating Setschenow's centre in the medulla, in small doses; but, in large doses, causes permanent paralysis of reflex activity by acting upon the spinal motor cells in the same manner that the small doses affect the higher centre. On the contrary, atropine, as asserted by Ringer and Murrell, is a paralyser of inhibition. A choreic dog was made the subject of experiment, and, omitting details, it was graphically shown that the muscular rhythmical movements were rapidly increased after injection, hypodermically, of atropine, until they were enlarged fourfold. Following this, a hypodermic injection of quinine was given, and the movements were immediately reduced and in about twenty seconds they ceased entirely. This effect of quinine upon the choreic movements in dogs, Wood has frequently demonstrated, so that there can be no mistake about it.

The interesting observation was made, clinically, that whereas in chorea, the patellar reflex phenomenon, or knee-jerk, was lessened uniformly, this reflex became greatly exaggerated, by re-inforcement, if some other voluntary movement were performed at the same time, such as raising the arms or clenching the fist. This he also explained on the theory of weakening of inhibition and the failure of inhibitory resistance to the overflow of impulse from certain spinal motor cells to neighboring centres.

In the study of the pathology of chorea, it is a strange fact that we have hitherto overlooked the phenomenon of inhibition. The phenomena of chorea, like those of hysteria, are not phenomena of increased excitement of motor centres, but of paralysis of inhibition. The conjunction of increased muscular and nervous discharge with evident weakness of the spinal centres, is explicable very plausibly upon Wood's theory that the motor cells are weak but the inhibitory cells are weaker still. It only remains to add that in several patients very prompt and marked improvement followed the application of this theory by the use of full doses of quinine.

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[1] [illegible]

Dr. Wood is to be congratulated upon this clinical confirmation of his very interesting contribution to the pathology of chorea, which has every appearance of being a discovery of permanent value and of practical importance.

◆

AN ACT GRANTING ADDITIONAL QUARANTINE POWERS AND IMPOSING ADDITIONAL DUTIES UPON THE MARINE HOSPITAL SERVICE.

AN Act with the above title has passed both Houses of Congress, and awaits the signature of the President to become law.

The full text of the Act reaches us too late for extended comment. It may, however, be said that its provisions are not such as to satisfy those who had hoped that the exigencies of the present situation in regard to cholera would be met by intelligent and vigorous legislation at Washington, which would give the country the full measure of National protection possible under existing conditions and the present state of development of sanitary science.

We fear that this Act will not be found to meet such requirements, and practically will be found to mean very little. No appropriation is attached to it. The one positive thing which it does is to abolish the old National Board of Health. It gives power to the President to prohibit immigration in whole or in part; it authorizes him to detail any medical officer of the Government to serve in the office of the consul at any foreign port; it affirms the duties of United States consular officers in regard to the cargo, passengers and crew of vessels sailing for our ports; and it authorizes the Secretary of the Treasury to remand an infected vessel arriving at any port not provided with proper facilities for its treatment, at its own expense, to the nearest national or other quarantine station where suitable accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers and cargo.

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MEDICAL NOTES.

THE BILL TO RESTRICT IMMIGRATION IN ENGLAND of destitute aliens, presented to the House of Commons on February 10th, was rejected by a vote of 234 to 119.

DR. HOLMES AND THE MEDICAL SOCIETY OF VICTORIA. — The Victorian branch of the British Medical Association sent an address to Dr. Holmes on the occasion of his eighty-third birthday last summer. The following answer has been received: "The greeting which you sent me is one of the highest honors I have ever received. I accept and most gratefully acknowledge it, only wishing that I felt more worthy of being so signally distinguished. With my best wishes for the continued prosperity of your noble Association, I am very respectfully and cordially yours, OLIVER WENDELL HOLMES."

NEW ENGLAND.

A BUILDING-SITE FOR THE HARVARD DENTAL SCHOOL has been secured on St. Botolph Street. The lot contains 15,000 square feet, and is next to that owned by the Medical Library Association. Eleven thousand dollars have been contributed towards paying for it; and the executive committee in charge of the work expects to raise the balance needed in the course of the next two months.

THE BURNING OF AN INSANE ASYLUM IN NEW HAMPSHIRE. — The Strafford County Insane Asylum, four miles from Dover, N. H., was burnt to the ground on the night of February 9th, and forty-four of the inmates were killed. The building, which adjoins the county workhouse, was a two-story wooden structure, 130 by 35 feet in size, with a large yard on each side enclosed by a high fence. It contained fifty small rooms or cells, all of which were locked at night. When the fire was discovered the doors were broken open, but the fire spread so rapidly and the arrangement of the building was such that only four of the inmates got out in safety. The high fence surrounding the building prevented the escape of at least one of the unfortunates. Most of the inmates were women, and they appear to have been utterly dazed and unable to find their way out. The building was twenty years old, and cost ten thousand dollars. It was built to replace one which had been burnt, and in which eight persons had been burnt to death. It is not probable that any recently built institution is such a fearful death-trap as this old shed; but it is the manifest duty of the proper authorities to take warning by this unnecessary destruction of life, and see to it that no similar dangerous buildings are now in use.

NEW YORK.

NEW ST. LUKE'S HOSPITAL. — The estimated cost of the new St. Luke's Hospital, the plans of which have now been perfected, is $3,000,000. The valuation of the present site and buildings at Fifth Avenue and 54th Street has been fixed at $2,500,000; but the property will not be surrendered until the completion of the new hospital, which it is expected will be in the summer of 1894.

TYPHUS FEVER. — During the week ending February 11th there were 14 deaths from typhus fever, as against 16 during the preceding week. The total number of cases of the disease reported from November 30th to February 13th was 264, while the total number of deaths was 92. Towards the close of the week there were but four new cases, and it is hoped that the outbreak will now steadily decline.

THE BABY HIPPOPOTAMUS. — The hippopotamus baby whose birth at the Central Park Menagerie was mentioned last week, survived but a short time. For several days after its death the mother was in an ugly mood, as she was suffering from great engorgement of the milk glands, and there appeared to be no way of affording her relief. At last her daughter, now more than two years old, was placed once more in the same cage with her, and, curiously enough, she soon turned again to the maternal fount, although she had been weaned for at least a year, and the mother now suckles her with apparently great satisfaction.

The Dinner to the Health-Officer of the Port. — The presiding officer at the recent dinner to Dr. W. T. Jenkins introduced the guest of the evening in a speech reported as follows:

> If in literature we seek an incident that most precisely parallels the struggle which last summer occurred in the Bay of New York, the story of Horatius at the Bridge seems most appropriate. The noble deed of the defence of Rome, recounted by Macaulay, fires the imagination of the youth, moves the middle-aged, and lives in the recollection of the old.
>
> The defence of a great city in a moment of supreme peril is enough to move the ordinary mind, but when that defence rests solely on the courage, the constancy and the firmness of one individual, is it any wonder that an event so striking should furnish a theme that for generations should thrill alike the young and the old?
>
> To-night it is our happy privilege to do honor to another Horatius, to another defender of a city greater than Rome from an enemy more insidious than Sextus, from a disaster more destructive than the siege-beleaguering army. The Horatius of the New World is found in our time in the Bay of New York, battling against fearful odds, in the shape of a disease concealed in the persons of thousands, which, if allowed to land, will strike a terror more destructive of confidence, attended by a direct loss greater to the country at large than if the city was bombarded by the greatest navy of the world. Yet, through the efforts of our new Horatius, almost alone, without experience, without a special training, with facilities most inadequate, with preparations, through no fault of his, most incomplete, not only were the cities of New York and Brooklyn and the surrounding suburbs saved from this great peril, but this vast country relieved from an apprehension more paralyzing, more serious than anything of the kind occurring since the dark days of the war.
>
> The single individual upon whom all this vast responsibility rested is our guest to-night. To Dr. Jenkins, Health-Officer of the Port of New York, alone must be attributed the effective check which cholera met in its approach to these shores.

Segregation of Vagrants. — At a meeting of the Board of Health, held February 8th, Dr. Joseph D. Bryant, Chairman of the Sanitary Committee, submitted a report in regard to the presentment of the Grand Jury recommending the commitment as vagrants of lodgers at the police station-houses, a copy of which had been sent to the Health Department by the Board of Police. In this report Dr. Bryant expressed the following opinion: "It seems to me that the prompt committal of persons of this class to the workhouse would invite quickly the danger of general infection of typhus, not only of the inmates of the workhouse itself, but also of those of other institutions to which they might be detailed for the purpose of labor. To prevent them from becoming agents of general infection under the circumstances, it will be necessary to segregate and quarantine them from the time of admission till all danger of infection is past ere they are permitted to associate with others. The expense of their proper segregation, isolation, watching, housing and feeding would be comparatively excessive, and attended with little if any remuneration. I am of the opinion that a safer sanitary plan should be employed for the treatment of these unfortunate creatures than that of committing them indiscriminately to the workhouse or sending them to the almshouse of the city."

Among those who have been attacked with typhus fever during the past week is a Roman Catholic priest, who has been in the habit of making visits to the patients in the hospital for contagious diseases on North Brother Island.

◆

Miscellany.

DALTON SCHOLARSHIP AT THE MASSACHUSETTS GENERAL HOSPITAL.

At a meeting of the Trustees of the Massachusetts General Hospital held February 10, 1893, the Secretary was instructed to have published the following rules for the Dalton Scholarship established under the John Call Dalton and Edward Barry Dalton Fund for promoting Investigation in the Science of Medicine:

Article I. Candidates shall be nominated to the Board of Trustees by the hospital Staff, with recommendations for the information of the Board. They shall be either house pupils of the hospital or graduates of a regular American medical college.

Art. II. The nature of the work in medical investigation proposed to be prosecuted by each candidate shall be designated.

Art. III. Scholars shall be appointed by the Board from among the candidates named.

Art. IV. Scholars shall be under the direction of the Staff, and the Staff shall, whenever it thinks desirable, report to the Board any dissatisfaction with the work or conduct of scholars, and the Board may act thereupon, as in the case of house pupils.

Art. V. The results of work of scholars shall appertain to the hospital; and when made public, the name of the scholar shall accompany the publication; but no publication shall be made unless recommended by the Staff and approved by the Board.

Art. VI. Should the work of a scholar extend through a part of a year only, he shall be entitled to a proportionate share of income.

Art. VII. When the income is insufficient, appointments for the year may be omitted.

Art. VIII. Any income not used shall be [illegible] and not added to the principal.

Art. IX. Scholars shall be eligible for renomination and reappointment.

It is proposed to make an appointment to the Scholarship about April 1st, next.

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THE ABSENCE OF MILK IN JAPAN.

Dr. A. S. Ashmead[1] attributes some of the hygienic advantages of Japan to the absence of cows' milk as an article of food. In consequence, Japanese mothers are compelled to suckle their infants themselves, and the children are suckled until the sixth year, although they eat other food also after the first year. Menstruation returns only a year and a half after birth, and the young mother receives especial care from those around her. The existence of a concubinage, the author believes, is also a considerable relief to the Japanese matron and influences the health of the children. Japan is the paradise of children. Rachitis does not exist and consequently there is very little difficult confinement. Tuberculosis is common, but occurs mostly among the upper classes, where there is a system of close intermarriage. Kissing is also not a polite custom and this source of contagion, especially among children, is therefore wanting. On account of the rice plantations the water is bad, and the total abstinence from cold water is another point of safety. It is drunk only boiled with tea, which destroys the typhoid germs and the eggs of the distoma.

[1] [illegible]

CHOLERA AND THE COMMA BACILLUS.

At the first meeting of the year of the Society for Internal Medicine in Berlin, Guttmann discussed the views of Pettenkofer on the cholera bacillus.[1] He had written to Pettenkofer saying that he had cholera, although of a mild type, and that such mild cases were really cholera, as could be proved by the existence of comma bacilli in the dejections. The bacilli had done their duty, and the fact that the attack was a very mild one has nothing to do with the case. Lazarus had shown that the blood serum of those who had recovered from cholera, even in the most minute quantity, would protect a guinea-pig against an injection of comma bacilli five hours later. He offered to prove that Pettenkofer had had the cholera if he would lend him some of his blood for this experiment on guinea-pigs.

Klemperer was doubtful whether this property of the blood could be made use of for diagnostic purposes as proposed by Guttmann. The blood serum of an animal recovered from the disease would immunize against the disease subsequently introduced, but where one cubic centimetre of the blood was sufficient to produce immunity, one thousand cubic centimetres would be required to cure a commencing disease; and if the disease had already made progress one hundred thousand or one hundred million cubic centimetres might be necessary to control it, quantities which are incompatible with possibility. Much more was, therefore, to be hoped from protective inoculation than from specific treatment in the use of anti-toxines.

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LISTER AND CARBOLIC ACID.

In an address recently delivered in London, Sir Joseph Lister sounds the praises of carbolic acid as compared to other and more recently devised agents for disinfection.[2] Most of the micro-organisms which the surgeon has to fear are easily destroyed by a one-to-twenty, or weaker, carbolic solution. His method of disinfecting sponges will startle many surgeons of the present day. He says:

"For my own part, I purify my sponges for private operations in a somewhat rough-and-ready way. I put the sponges after an operation into a tank of water and let them putrefy there. The fibrin, which clings among the pores of the sponges, becomes liquefied by putrefaction. They can then be washed thoroughly clean of their fibrin, and the washing is continued until they no longer give a red color to water. They are then put into one-to-twenty carbolic solution and kept there. In my Edinburg practice I used to proceed in a bolder way. Taking the sponges out of the putrid tank, I washed them in water, and sometimes if I was in a hurry, even before the water which came from them was completely freed from red color, I dipped them into the one-to-twenty carbolic solution, and took them at once to my operations. I have before now applied a sponge so treated immediately to a wound for the purpose of exercising elastic pressure and absorbing blood and serum from it, and then put on my external antiseptic dressing over it without any bad result. These facts taken together will, I think, be enough to convince you that it is not necessary, as is sometimes done, to discard these most valuable articles and substitute for them sterilized cotton-wool or tissue of one kind or another, incomparably inferior to sponges for the purpose of absorbing blood."

He uses the same solution for instruments, hands and the skin of the patient. After scrubbing the instruments with soap and water and a nail-brush, they are put into the one-to-twenty carbolic solution for a few minutes. A few minutes' action of the one-to-twenty carbolic solution on the skin he considers sufficient. It is much to be preferred to corrosive sublimate, as it is not only a germicide but penetrates deeply into the epidermis and mingles with fatty materials. Before the wound is closed it is washed out with a one-to-forty carbolic lotion.

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MEDICAL PRACTICE LEGISLATION.

We shall soon arrive at that time of the year when most of our State legislatures have got well to work, and take up among a host of recurring bills, different ones concerning medical practice. These bills generally do not pass, but for one reason or another one of them does, and that State joins the list of those which limit the practice of medicine. All but five, of which five, unfortunately, Massachusetts is one, have passed some such law; but the lack of uniformity in these laws may be seen from the groups in which they are divided by the *Medical Review:*

Some prevail in a number of States, others in but a few, and some in but one: (1) We have those States in which there are no restrictions whatever in regard to the practice of medicine. (2) States in which there is but one requirement — to file a copy of a diploma with the county clerk; or, in case of failure to have a diploma, to pass a perfunctory examination before the County Medical Board. (3) States more strict in the requirements, which are that the diploma which is registered emanates from a reputable medical college. (4) States which require the applicant for a license to practise medicine to file with the State Board of Health a diploma emanating from a college in good standing, by which is meant an institution which requires attendance upon lectures for a certain fixed number of years, in default of which the applicant is examined by the Board. (5) States in which no diploma whatever is recognized. Each applicant for a license to practise medicine and surgery must appear before a special Board and pass an examination satisfactorily, in default of which no license is issued. (6) Finally, we have the system where every applicant for a license to practise must pass a satisfactory examination before the Board of Regents of the State University, except the graduates of those institutions in the State whose diplomas have been recognized by the above Board. Twenty-three States have appointed State Boards of Medical Examiners.

In Pennsylvania and Texas there is at present an active movement to obtain a stringent law. One of the arguments always presented to defeat such laws is that it interferes with personal freedom, and is unconstitutional. The *Medical Record* of last week gives the decisions of a few supreme courts showing that it is not likely to be so considered by the courts:

"There is no good reason why restraints should not be placed upon the practice of medicine as well as the law."— Decision of the Supreme Court of Michigan, People *v.* Phippin, in 1888.

"The power of the Legislature to regulate the practice of medicine, dentistry, or surgery is undoubted." — Decision of the Supreme Court of Kansas, 44 Kan. 565.

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[1] See page 585 of the Journal of December 15, 1892, and page 146 of February 9, 1893.

[2] British Medical Journal, January 28th.

"No one has a right to practise medicine without having the necessary qualifications of learning and skill; and statute only requires that whoever assumes, by offering to the community his services as a physician, that he possesses such learning and skill, shall present evidence of it by a certificate or license from a body designated by the State as competent to judge of his qualifications."— Decision of United States Supreme Court, Justice Field, 129 U. S. 114.

In a letter to the same journal, Dr. C. U. Collins says of the medical law now in force in Illinois, that no good results have followed the legal regulation of medical practice; the people have not been insured against quackery, and the law has not benefited the people. The State is overrun with itinerants, quacks, patent-medicine vendors, etc. There are several persons practising medicine without State certificates. There is a bill before the State Legislature, now, to abolish the State Board of Health, and there is a large sentiment throughout the State supporting the bill. In its work of establishing sanitary measures the Board has been a success; in regulating the practice of medicine it has been a failure. It has done injustice at times to reputable physicians, and has failed to benefit the people.

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Correspondence.

OBITUARY. — R. L. HODGDON, M.D.[1]

Richard Lord Hodgdon, son of Richard and Eunice (Lord) Hodgdon, was born in South Berwick, Me., April 11, 1825. Prepared for college at the South Berwick Academy, he graduated at Bowdoin College, in 1845, and at the Jefferson Medical College, Philadelphia, in 1852.

He settled in Arlington, in May, 1853. In 1854, he married Maria E. Wellington, daughter of the late Timothy Wellington, M.D., to whose practice he succeeded; and, like his predecessor, he remained in practice for forty years, and until his death.

The combination of qualities in the character of Dr. Hodgdon made his personality somewhat marked. His loyalty to his calling and his love of it, well-nigh obliterated all thought of self. His professional ability, clearness of perception, wise discrimination, strength of will, strict integrity and kindness of heart, made him not only the good physician but the trusted and valued friend. When the professional summons came, whether at noontide or at midnight, under the burning heat of summer or the snows of winter, at the next door or from a neighboring town, to a man in poverty or to one bred in luxury, there was neither questioning nor halting; but the call was obeyed promptly and cheerfully. Shrewd, careful and painstaking in his investigations, his diagnosis of disease was usually correct, and his treatment of it sensible and rational. More than this: he knew how to meet kindly and wisely the various whims and imaginings, if such there were, of his patients, and by a manly personal bearing to calm and fortify their weak and mentally depressed conditions.

With little self-assertion he ever manifested a sturdy self-respect. He was a man of decided opinions, which he never failed on proper occasions to maintain and defend. As a friend he was genial and companionable, his heart and his home were always open to hospitality. He was a wise counsellor in all affairs relating to the welfare of the town, and thereby made himself a prominent and useful citizen. For many years he was a member of the school committee, and at one time was superintendent of schools. He was for six years a member of the board of water commissioners. His membership was at an important time, when the suits connected with the establishment of the water-supply of the town were in course of settlement, and his services were of great value.

He was one of the trustees of the public library, and for many years was its chairman. At the recent dedication of the new Robbins library building he gave a carefully prepared historical sketch of the foundation and progress of the library.

In 1887, he was appointed a member of the State Board of Lunacy and Charity by Governor Robinson, and was reappointed in 1890 by Governor Brackett. In 1889, he became chairman of the board, holding that position at the time of his death. He was much interested in the duties of this office, and paid close attention to them.

He was a member of the Massachusetts Medical Society and for several years one of its councillors. He was once Anniversary Chairman. He was an associate-member of the Boston Medical Improvement Society, a member of the Cambridge Medical Improvement Society, of the Obstetrical Society of Boston, and of other medical societies. He was for several years treasurer of the Unitarian Church in Arlington, in whose affairs he took great interest.

A life like his does not pass from the scenes of its earthly activities without many sad regrets and a deep sense of loss, in any community. But we know that such a life, set free from human weakness and limitations, is not ended by death. Its beneficent and uplifting influences remain and abide with us, stimulating and inspiring us to better and holier endeavor, and giving comfort and strength to all mourning hearts.

W. W. W.

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[1] Prepared for the Boston [illegible] Society.

RECORD OF MORTALITY

For the Week ending Saturday, February 4, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrheal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,827,396	[illegible]	302	17.76	21.84	1.92	[illegible]	[illegible]
Chicago . . .	[illegible]	—	—	—	—	—	—	—
Philadelphia .	[illegible]	—	—	—	—	—	—	—
Brooklyn . .	955,333	[illegible]	123	15.12	20.52	.81	6.48	2.16
St. Louis . .	[illegible]		—	—		—	—	—
Boston . . .	[illegible]	[illegible]	70	13.34	[illegible]		6.90	4.14
Baltimore . .	461,139	—	—		—		—	—
Cincinnati . .	[illegible]	114	29	8.77	[illegible]	2.64	2.64	—
Cleveland . .	[illegible]	91	43	[illegible]	20.90	[illegible]	12.10	—
Pittsburg . .	[illegible]	107	[illegible]	[illegible]	[illegible]	5.58	1.86	—
Milwaukee . .	[illegible]	—	—	—	—	—	—	—
Washington .	[illegible]	115	39	5.22	23.49	.87	1.74	
Nashville . .	[illegible]		—	—	—	—		
Charleston . .	[illegible]	[illegible]	10	3.70		—	—	[illegible]
Portland . . .	[illegible]	[illegible]	5		[illegible]	—	—	—
Worcester . .	[illegible]	16	[illegible]	[illegible]	12.50	—	—	—
Lowell . . .	[illegible]	39	[illegible]	15.36	12.80	5.12	—	—
[illegible] . .	[illegible]	[illegible]	14	[illegible]	[illegible]	[illegible]	—	—
Cambridge . .	74,644	20	7	10.00	15.00	[illegible]	—	[illegible]
Lynn	[illegible]	20	1	10.00	5.00		[illegible]	—
Springfield . .	[illegible]	18	1	5.55	11.11	—	[illegible]	
Lawrence . .	45,910			—	—	—	—	
New Bedford .	[illegible]	19	[illegible]		31.56		—	
Holyoke . . .	40,099	6	0		16.66	—	—	—
Brockton . .	32,783	7	1	28.56	42.84	—	28.56	—
[illegible] . . .	[illegible]	11	3	—	45.45		—	—
Haverhill . .	[illegible]	[illegible]	3	—	50.00	—	—	—
[illegible] . . .	[illegible]	11	6		[illegible]	—	—	—
Malden . . .	27,252	[illegible]	1	11.11	22.22	—	11.11	—
Newton . . .	26,498			—	—		—	
Taunton . . .	26,464	14	3	[illegible]	[illegible]	—	7.14	—
Gloucester . .	26,008	11	0	9.09	18.18	—	—	—
Fitchburg . .	[illegible]					—		
Waltham . .	20,942	[illegible]	2	11.11	—		—	
Quincy . . .	[illegible]	[illegible]	1	—		—	—	—
Pittsfield . .	[illegible]	3	2	—	33.33	—	—	—
Northampton .	15,684	6	[illegible]	—	50.00	—	—	—
Everett . . .	14,745	2	[illegible]	—	50.00	—	—	—
Newburyport .	14,031	8	[illegible]	25.00	12.50	[illegible]	—	—
Amesbury . .	[illegible]	4	1	25.00	50.00			

Deaths reported 2,174; under five years of age 760; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers), 321, acute lung diseases 474, consumption 227, diphtheria and croup 128, diarrhœal diseases 57, scarlet fever 33, whooping-cough 21, typhoid fever 18, typhus fever 16, measles 15, cerebro-spinal meningitis 14, erysipelas 13, small-pox 2.

From whooping-cough Brooklyn 11, New York 9, Pittsburgh 1. From typhoid fever New York, Cincinnati and Lowell 4 each, Boston 2, Brooklyn, Washington, Fall River and Lynn 1 each. From typhus fever New York 16. From measles New York 11, Brooklyn 3, Pittsburgh 1. From cerebro-spinal meningitis New York, Boston, Washington and Somerville 2 each, Brooklyn, Worcester, Gloucester, Quincy, Newburyport and Amesbury 1 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending January 21st, the death-rate was 24.9. Deaths reported 4,924: acute diseases of the respiratory organs (London) 739, measles 114, whooping-cough 76, diphtheria 62, scarlet fever 54, diarrhœa 39, fever 34, small-pox (Manchester 6, Oldham 5, Halifax 2, London, Derby, Bradford, Leeds, Sunderland and Gateshead 1 each) 19.

The death-rates ranged from 12.8 in Huddersfield to 30.2 in Manchester; Birmingham 26.8, Bradford 23.3, Bristol 23.6, Hull 18.5, Leeds 29.6, Leicester 23.5, Liverpool 28.8, London 25.4, Nottingham 20.6, Portsmouth 24.9, Sheffield 24.8, West Ham 25.5, Wolverhampton 22.9.

METEOROLOGICAL RECORD,

For the week ending February 4, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...29	30.09	32	46	17	100	92	96	N.W.	S.W.	7	12	G.	O.	0.23
M..30	30.25	34	37	30	58	44	51	W.	W.	15	5	O.	O.	
T..31	[illegible]	30	35	24	88	47	68	N.E.	N.W.	3	12	N.	O.	0.01
W. 1	[illegible]	26	34	18	85	100	93	N.	N.W.	4	4	O.	R.	0.01
T.. 2	[illegible]	29	32	26	89	36	63	N.W.	N.W.	13	12	O.	O.	0.17
F.. 3	30.11	26	34	17	89	93	91	E.	W.	5	6	O.	F.	0.29
S.. 4	30.50	14	18	10	43	40	42	W.	N.W.	32	12	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 4, 1893, TO FEBRUARY 10, 1893.

Captain Paul Shilloch, assistant surgeon, U. S. A., promoted as such to date from January 31, 1893, in accordance with the act of June 23, 1874.

By direction of the Secretary of War, the order assigning **Captain Charles B. Ewing**, assistant surgeon, U. S. A., to duty as post surgeon, Fort McHenry, Md., is suspended until June 1, 1893, when he will comply with the order.

The leave of absence granted **Captain Junius L. Powell**, assistant surgeon, U. S. A., is hereby extended one month.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING FEBRUARY 4, 1893.

Mead, F. W., surgeon. To proceed to New London and New Haven, Conn., as inspector. February 4, 1893.

Carter, H. R., surgeon. Granted leave of absence for thirty days. February 3, 1893.

Stoner, J. B., passed assistant surgeon. To assume command of service at Portland, Oregon. January 17, 1893.

Young, G. B., assistant surgeon. When relieved to proceed to Pittsburgh, Pa., for duty. January 17, 1893.

Cofer, L. E., assistant surgeon. Placed on "waiting orders." January 23, 1893.

Eager, J. M., assistant surgeon. To proceed to Cape Charles Quarantine for temporary duty. February 3, 1893.

Stewart, W. J. S., assistant surgeon. To proceed to Norfolk, Va., for temporary duty. February 1, 1893.

DEATH.

Spencer C. Devan, passed assistant surgeon, died February 3, 1893, at Philadelphia, Pa.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 11, 1893.

B. R. Ward, assistant surgeon, ordered to Training-ship "Richmond."

George F. Winslow, surgeon, ordered to the U. S. S. "Montery."

W. F. Arnold, passed assistant surgeon, ordered to the U. S. S. "Montery."

L. L. Von Wedekind, assistant surgeon, ordered to examination preliminary to promotion.

Geo. A. Lung, assistant surgeon, ordered to examination preliminary to promotion.

THE PAN-AMERICAN MEDICAL CONGRESS.

Section on Laryngology and Rhinology.

The Section on Laryngology and Rhinology of the Pan-American Medical Congress is now thoroughly organized, with secretaries in all the countries of South America as well as in the United States and Canada.

The President, Dr. E. Fletcher Ingals, of Chicago, is making a thorough canvass to secure a large number of good papers for the Section, and, aided as he will be by the able secretaries and the corps of honorary presidents, he feels assured of the success of this department of the Congress.

All physicians interested in this Section are requested to correspond with the secretaries for the United States: Dr. J. Maron y Alonso (Spanish speaking), Las Vegas, N. M., Dr. T. Morris Murray (English speaking), Washington, D. C.

SOCIETY NOTICE.

Suffolk District Medical Society. — Section for Obstetrics and Diseases of Women will hold a meeting at 19 Boylston Place, on Wednesday evening, February 22, 1893, at eight o'clock.

Dr. Joseph H. Price, of Philadelphia, will read paper: "What Cleanliness has done in Maternity Work." Dr. W. L. Richardson will speak. Dr. Emma L. Call, in charge of Obstetrical Department at New England Hospital, will speak.

Dr. E. W. Cushing will report a case of "Hysterectomy for Large, Soft Myoma; Suture of Severed Ureter; Recovery."

F. H. Davenport, M.D., *Chairman.*
Geo. H. Washburn, M.D., *Secretary.*

APPOINTMENT.

Dr. George Haven has been elected one of the consulting physicians of the Adams Nervine Asylum.

RECENT DEATHS.

John F. Jarvis, M.D., M.M.S.S., died in Boston, February 10th, aged sixty-six years. He graduated from the Harvard Medical School in 1853, and for nearly forty years has practised at the "West End" in Boston.

Charles S. Hayward, M.D., died suddenly in New York, February 14th, aged sixty-seven years. He was the medical examiner of the Equitable Life Assurance Society.

Norvin Green, M.D., President of the Western Union Telegraph Company, died February 12th, aged seventy-four years. He graduated in medicine at the University of Louisville, Ky., in 1840, and afterward served three terms in the Kentucky Legislature. Early in life he used to travel about the Bluegrass region of Kentucky on horseback as a country doctor, carrying his medical supplies and instruments in old-fashioned saddlebags behind him. He became interested in telegraph enterprise, gave up the practice of medicine and in 1854 became president of the South Western Telegraph Company, and since 1878 has been president of the Western Union Company.

Alfred Hardy, M.D., Professor of Dermatology and of Clinical Medicine in the Paris Medical Faculty, died in Paris, January 22d, aged eighty-one years.

Lecture.

LECTURES ON SURGERY.[1]

[illegible]

II.

ANÆSTHETICS.

Surgical anæsthesia is the subject of to-day's lecture. By this we mean the power of producing, at will, unconsciousness to pain during surgical operation.

There are two kinds of anæsthesia. One is local: one is general. In the first case the patient does not lose his consciousness: in the second he does. Local anæsthetics are far preferable to any others. They are, however, unfortunately of imperfect application, and uncertain action. On the other hand, the general anæsthetic necessarily narcotizes the brain as well as the rest of the body, throws the patient into profound sleep, from which the recovery is quite slow, and sometimes quite unpleasant. The benumbing effect of a ligature or tourniquet was, perhaps, the first application of a local anæsthetic. It is quite effectual in amputating a limb. Probably if a tourniquet, or rubber twist, is put around a limb tightly and left for some little time, sensibility during the operation is very much diminished. The next that was used, and which, for a while, was quite popular and quite effectual, was freezing the skin over a limited area in order to abolish its sensibility. Any agent which evaporates rapidly and produces cold will do this. Alcohol will do this. Ether will do it better. The higher grades of petroleum oils will do it better still: and from them was manufactured an agent which was called rhigolene by the manufacturer, which had a very quick evaporating power, and produced an intense degree of cold. The disadvantage of the anæsthesia produced by cold is that the local freezing must be followed by a reaction, and that when the reaction comes on and the vessels fill again with blood, the same tingling and pain is produced as is done after any other mode of freezing. This, added to the wound which is made by the surgeon, to all appearance, produces more intense suffering in the patient, than the original relief afforded by the freezing operation. Secondly, although the rhigolene is very useful in certain cases, it is not capable of a very extended application. It may be used for a felon; it may be used very nicely indeed for a puncture, as for instance, paracentesis of the thorax or the abdomen, — over a limited space and for a short time, so that the reaction that comes on will not be too painful and too severe; but this is the limit of its application.

In the discovery and use of cocaine as a local anæsthetic we had the next best example, and the best one that we have now. Cocaine applied to the mucous membranes is quite a good local anæsthetic. It seems to affect more sensibly the eye and the mouth than it does the urethra and the rectum, probably because it is more perfectly applied. It is not, however, of much use when applied to the sound skin, and in order to produce a local anæsthesia upon the true skin, if you wish to make an incision, you are obliged to inject the cocaine solution subcutaneously into it. It has a great power in shrinking up the blood-vessels. It will drive the blood out of the parts temporarily, and in that way has quite an advantage in some minor operations, such as those about the eye-lid, the interior of the nose, throat, and gums. It has no special action apparently upon the parts themselves except this, that when injected subcutaneously it frequently gives rise to quite a rapid œdema of the tissues. Injected into the cheek for instance, to cut out a wen or a pimple, it produces a puffing up of the cheek which [illegible] more, and may be an embarrassment to the patient, and to the surgeon, unless he works speedily. Constitutionally, however, upon the other parts of the patient it does have quite a serious effect, and that effect is its specific one of a narcotic and a depressant to the heart; so that it is not always a safe agent to use in feeble persons. Had I a patient with a very feeble heart and a general condition of anæmia, I should think it safer to give him ether to breathe than to give him strong injections of cocaine under the skin. Several fatal cases have occurred. I think the statement has been made that it is not safe to *inject* more than one-half or two-thirds of a grain: but it is ordinarily used, a few minims at a time, in a four per cent. solution, upon the mucous membranes.

General Anæsthetics. — Of the general anæsthetics, which affect the whole body, we have sulphuric ether; we have chloroform; we have the nitrous-oxide gas, as it used to be called; and we have the bichloride of methylene; we have various compounds of ether and chloroform, chloroform and alcohol, chloroform and various essential oils, etc., which are called mixtures. The two great types of the class of general anæsthetics, of course, are sulphuric ether and chloroform; and the others are either more uncertain or more brief in their action than these two typical ones.

In very old times, as far back as the Greeks, the hellebore and various other drugs were used to produce insensibility to pain in surgical operations. Later, opium was used. Later, and even down to the present time or quite recently, alcohol has been quite largely used; and getting the patient intoxicated with alcohol certainly had a certain amount of effect in benumbing him to the pain of an operation.

It was in 1846 that the great discovery was made that sulphuric ether, if breathed, would produce insensibility to pain, and was not especially dangerous to life. That marked, as we all know, a great era in surgery. It was in the following year, if I am correct, that chloroform was discovered, and substituted in many countries for ether.

The advantages of anæsthesia to the patient and to the surgeon are so obvious that it is hardly necessary to dwell on them. To the patient the boon, of course, is invaluable. The result of anæsthesia has been that it has enlarged the domain of surgery very much. A great many more operations are done than formerly. A great many more patients will consent to operations than formerly. The great dread of the suffering from the knife is taken away; and it has become now so customary to give it, that it is regarded as a matter of course. The advantages to the surgeon are equally great, because it enables him to operate upon an insensible subject, without haste, without feeling, without motion.

These two great anæsthetics, ether and chloroform, have each their peculiar characteristics. Ether, for instance, is bulky and disagreeable and light; and chloroform, on the other hand, can be used in small amount, is pleasant to take, and is very heavy as a gas. Ether primarily acts by stimulating the circulation and the heart, and producing an over-action of the pulse, and a species of intoxication, followed by narcotism. Chloroform, on the other hand, acts at once on the respiration, and on the heart, rather depressing the action of the heart; quiets down the patient, throws him into a pale, uncolored sleep without excitement, and is a much pleasanter anæsthetic to give and to take.

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As regards their danger, it appears to be pretty well proven, that about one person in twenty odd thousand who takes ether may succumb to its effects and die; and one in about every two thousand who takes chloroform may meet with a fatal result. Chloroform, then, to look at the matter impartially, is apparently about ten times as dangerous as ether; and in this country and especially I should say in this community, where perhaps we may have been influenced somewhat by the fact that ether was discovered here, we hardly consider ourselves justified in giving chloroform when ether can be as well taken, thinking chloroform so much more dangerous. In some other parts of the United States, in the Continental countries of Europe, and, to a considerable extent, in England, chloroform is still largely used in preference to ether. There are certain operations which are adapted to the one, and not adapted to the other anæsthetic; that it is fair to say. Ether is very inflammable. The gas is volatile and catches fire with great facility in the air. On the other hand, chloroform is not inflammable. A match can be dropped into it and not catch fire; and it is therefore much safer to use in operations anywhere near the breathing apparatus when the cautery is to be used. Accidents have happened from the lighting up of ether in the throat with fatal effects to the patient. Fortunately they have been very few; but they have occurred. On the other hand, such an accident as this is impossible with chloroform; and for the patient who has got to have the actual cautery applied about the antrum, inside the mouth or throat, the proper agent to use is chloroform; or if ether is used, then considerable care must be taken to wait a little while after the patient is perfectly asleep, until the ether has been moderately well exhaled; then to fill the parts about the throat temporarily with a wet towel in front of the cautery, and to apply the cautery over that so that the fumes of ether, if ingited, may not be inhaled, and at worst can only burn the outer surface of the mouth. Ether is more suffocative to the patient than chloroform. Chloroform is the preferable anæsthetic to give, I think, in performing tracheotomy, if any anæsthetic is used. The child is not so alarmed at the little thin cloth or napkin held at a distance from the face containing a few drops of chloroform, as he is at the ether inhaler. Chloroform, then, in this condition is taken more pleasantly, does not produce that spasm of the glottis that ether does, and therefore is not so dangerous in doing tracheotomy. It also has one other advantage, that it is not so liable to produce that congestion of the mucous membrane of the bronchial tubes which leads to the excessive secretion of mucus, frothy mucus, in a good many patients who are taking ether.

There are some conditions where neither anæsthetic should be used; when it is not safe to use either. One of these is in the operation upon the chest when we tap it for an effusion, any of those conditions in which one lung has been disabled and doubled up and crumpled away under the pressure of the effusion, the patient breathing imperfectly with the other lung, and if then subjected to an anæsthetic, he is easily suffocated even during the brief operation; and it is now recognized, I believe, as wiser not to give ether at all, or chloroform, during operations upon the thorax attended with effusions. Rhigolene or cocaine are sufficient for the punctures and incisions which are sometimes made in that region. With this exception, there are few conditions in which ether cannot be safely given. Ether can be given safely even in quite an advanced stage of pulmonary consumption. It can be given, with care, in heart disease; and even in conditions of extreme debility, if it is not carried on too long; its earlier effect being stimulating, and its later effect prostrating. On the other hand, chloroform cannot be safely given to any patient with a weak heart, or with valvular disease of the heart; and that restriction certainly would have to be made. We are left then with the fact, so far as statistics have proved anything, that ether is a safe anæsthetic; that it is very difficult to kill a person with ether; and when you go about in our hospitals and see the freedom with which it is used you perhaps wonder that more deaths do not occur. On the other hand, it is also quite well proved, that chlorform is quite a dangerous agent; and on that account its use has been abandoned in a good many communities. It is impossible to warn against its danger. It is impossible to foresee its danger. Its action, when fatal, is almost instantaneous. The bringing-to of a patient after he is narcotized with chloroform is rare. The bringing-to of a patient after he has ceased to breathe for a moment under ether is common; and the reason is this, that chloroform is a very heavy gas. It is exhaled from the lungs with difficulty. If it is inhaled it drops down into the air cells and lies there until it slowly acts upon the blood, is changed and undergoes chemical absorption, probably, rather than immediate exhalation from the lungs themselves. On the other hand, ether is so light and volatile a gas that it cannot get into the lungs until it is largely mixed with atmospheric air in entering. It is easily exhaled, and it takes a much longer time to load up the system with it than it does with chloroform. Chloroform then is a heavy, paralyzing agent which lies in the air cells, undergoes chemical changes, has an immediate effect upon the circulation, and overwhelms fatally and speedily the feeble heart. Ether, on the other hand, is like taking alcohol. It is an arterial stimulant. Its early effects are to redden the face, flush the cheeks, stimulate the heart, throw the person into a perspiration, make him drunk, exhilarated, to carry on every vital function for a few minutes in more activity than in health. It is therefore a stimulant first before it is a narcotic. Chloroform is a narcotic from the beginning and may overwhelm the feeble person. It is impossible to estimate that class of patients with justice who are said to have feeble hearts. We hear perhaps no abnormal sound on listening. We may recognize the fact that although the heart is beating with regularity, it is not beating with any great force. We cannot tell how much of it is due, however, to mental apprehension at the moment; or how much it may be due to other causes. It is impossible to estimate just when you have got to do with one of these very feeble hearts; and it is precisely this class of cases that ether is safe for, and chloroform fatal to. A few whiffs of chloroform, and perhaps such a patient has no action of the heart; and if he revives, he revives slowly. On the other hand, if he takes ether, he has the heart stimulated, and is, in reality, after five or ten minutes of etherization, in a safer state as regards undergoing any shock, than he was before he took the ether at all. These, I think, are the great and important distinctions between the agents. The person in ordinary health and strength undoubtedly runs but little risk in taking chloroform. It is pleasanter, more comfortable, more convenient. How many deaths occurred under it on the field of battle we never shall know; probably not a great many. During our late Civil War, when the number of wounded and those who took anæsthetics was so enormous, chloroform was almost the only agent used. Chloroform must always be the agent used in war, because ether is too bulky to be transported. Four, six or eight ounces of ether are often consumed for a single case, sometimes as high as a pound. On the other hand, a drachm or two of chloroform will do the same amount of work. Chloroform in military surgery, in strong and healthy people; the same agent in cases of tracheotomy, is, and always will be, useful. But if we can have our choice, in the average of mankind, average of health and average of strength, we shall feel, with ether, ten times safer than in using chloroform. I think we have taken quite long enough for the discussion of the comparative merits of the two agents; but I wish to lay this down pretty strongly, because every few years quite an outcry is made about the danger of ether or of chloroform; and recently the London *Lancet* has conducted an inquiry for which it has sent here, to all our hospitals, for statistics as to the relative merits of the two agents. We need not be afraid of chloroform in the reasonably healthy person; but we should prefer to use ether when we can, as being ten times more safe. Ether *can* kill people however; and very easily, if we have a little neglect.

Essentials in the Administration of Ether. — The essentials in the administration of ether are these: that the patient should have a reasonably empty stomach, that he should have unrestricted room in which to breathe, and that he should be put in a position where he will not be likely to drop off faint suddenly from exhaustion, if that comes on. These three conditions are met by giving the patient nothing to eat for some hours before the operation; by seeing that the clothing about the neck, about the thorax and especially about the region of the diaphragm and waist is thoroughly loosened, and by putting the patient in a position either reclining, or at an angle of about 45 degrees. On the side is an excellent position in which to take ether, the reason being that the tongue falls naturally forward and the secretion of mucus rolls out of the mouth easily without suffocating the patient. The danger of having food in the stomach has been so often insisted on, that it seems almost idle to speak of it, but cases of suffocation occasionally occur in which the patient being seized by an attempt at vomiting while asleep with ether, having lost control of the epiglottis, is suffocated by the entrance of food into the larynx. Food in the state about to form chyme is most dangerous, because thick and pultaceous and pudding-like; it is not thrown out in masses in vomiting, but merely regurgitates over the epiglottis and so fills the larynx. Of course it goes almost without saying, that all foreign substances should be taken out of the mouth; and this is especially true of artificial teeth. Emptiness of the stomach, loosening the clothing and an easy position, — those are the great requisites. It is a good plan to tell the patient to close the eyes, if he can be induced to keep them shut, because ether is quite an irritant to the eye, and he will wonder the next day why he has got a slight degree of irritative ophthalmia from the ether.

Dangers in giving Ether. — The dangers in giving ether are of several kinds. They are quite distinct from those of chloroform. The danger from ether is danger of suffocation; and the danger from chloroform seems to be from its effect upon the heart. The first signs of danger from ether are usually shown in the breathing, and in the effects of impeded breathing upon the blood. On the other hand, the first signs of danger from chloroform are shown in the pulse, and the pallor of the skin. The ether patient, if he gets into a dangerous condition becomes suffocated. He ceases to have a bright arterial color; does not grow pale, but blue, livid. That is especially true of the ears and the finger-tips and the skin about the forehead, which can be easily watched; and if this purplish hue comes on, it is a sign that slight suffocation has taken place. There is too much ether, too little air; and the removing of the sponge, of course, promptly does away with this difficulty. While breathing quietly with ether the patient may suddenly become choked up, apparently without any cause. A little examination will reveal the fact that the stertorous condition having been reached, the palatine muscles and muscles about the throat having been paralyzed so that the tongue is no longer held forward by the genio-hyoid and hyoid group in front, it drops back upon the larynx, and suffocation takes place merely by its pressure backwards. That is very easily relieved by drawing the tongue forwards; and it should be drawn forwards in front of the teeth so as to project beyond them; or by partially disarticulating the lower jaw over the *eminentia articularis* by putting the fingers behind the angle of the jaw. This we cannot do readily in the waking state; but, when the muscles are paralyzed under ether, the jaw slips very readily forward. That you will see opens the glottis, and throws the tongue forward without the necessity sometimes of doing anything more. If this is not sufficient, the tongue is seized and drawn out of the mouth. The position of the etherized patient upon the side is the great safeguard against the occurrence of this falling back of the tongue.

The next peril that comes on, sometimes, is the excessive secretion of frothy mucus. This occurs only in a limited number of subjects. It is extremely annoying; it delays operation, delays the progress of ether, and it is also dangerous. The bronchial tubes become filled with this secretion; the mouth and throat become filled with it. Although wiped away, it continues to form; and the patient breathes with a constant gurgling through this mass. Ether produces this effect; chloroform does not. It has to be carefully watched. Ether is to be suspended, taken away, and time given for the perfect aeration of the blood; and the patient must have his throat swabbed out before the ether is reapplied.

Sometimes a peculiar tetanic setting of the muscles of the thorax occurs, which is extremely dangerous and it occurs instantly. The patient may appear to be breathing well, and although his tongue is out and the mouth open with plenty of room for the entrance of air, he instantly sets the thorax in a tetanic state, and ceases to respire. This dangerous condition is best relieved by allowing fresh air to come in, and by going through the movements of artificial respiration, rhythmically, to restore the action of the thoracic muscles.

Sometimes the patient appears to be breathing with great vigor and energy, without any noise, and yet he is growing purple. You are at a loss to explain this until you look at him. You see the diaphragm going up and down with great vigor, and he apparently is breathing, but in reality is not getting a particle of air into the lungs. This is the condition of closure of the glottis, and the diaphragm is still keeping up the pumping motion, but pumping on an empty pair of lungs. As soon as the trouble is recognized, it may be relieved by removing the ether.

The deaths which have occurred under ether have more frequently occurred in operations upon the lower extremities, or more especially upon the pelvic organs, the reason being, apparently, that the surgeon is far away from the face of the patient, that he does not have an opportunity to see what is going on, does not recognize at the moment that respiration has ceased. This, however, ought hardly to occur to one who is careful in operating about the pelvis and perineum, because the *levator ani* muscle is so perfectly antagonistic to the diaphragm, that it moves with the diaphragm in all steady and forced respiration; and in operations about the outlet of the pelvis we have only to look at this muscle directly before us, to see and count exactly the respirations going on.

When danger arises in the inhalation of ether from any of these causes the respiration ceases first, and, afterwards, if time enough has elapsed, the pulse. Most of these cases are readily brought back to life by taking away the ether, clearing out the mouth, drawing forward the tongue, opening the windows and admitting air, and by the use of artificial respiration by the Sylvester method. That, continued carefully and not too rapidly, generally speedily restores the respiration. The danger in using these artificial means of respiration is that in our haste and fear we are apt to make the motions too rapidly. They should be made only about sixteen to twenty times in the minute, so as to imitate the natural rhythm of respiration; and if made hurriedly the effect is practically destroyed. We do not give the lung time to fill thoroughly, and the air to be expelled, before we try to fill it again with these rapid and imperfect efforts. Electricity, the application of cold and heat to the nerve centres, etc., have been used with some benefit; but the taking away of the ether, admission of plenty of fresh air, sometimes the subcutaneous injection of brandy or ammonia, and artificial respiration first, last, and always, are the safeguards in giving ether. Usually the careful surgeon sees danger when it is coming, and is able to prevent it, by prompt measures, before it has occurred.

Ether is a stimulant for a while, but it is not so long; and here arises one of the dangers, I think, of anæsthesia; and especially, I may say, in the modern surgical methods and dressings that operative procedures are so much prolonged, that I think danger arises from the prolongation of the anæsthetic state. Ether when given acts exactly in this way: at first it starts all the machinery with more vigor; the heart acts more forcibly; the pulse beats stronger; the skin becomes warm; a little perspiration starts out; the patient is exalted in mind and body. Every function goes on for a few minutes with increased vigor; then the narcotic effects come on, and the patient sinks into a quiet sleep; a little further on, and comatose sleep comes on, in which the respiratory centres are affected by the action of the narcotic, and he snores and is perfectly relaxed. His cornea is entirely insensible to touch; his skin sweats profusely; and he lies in a perfect state of relaxation and coma. This condition may be kept up with safety, as regards life, for a considerable time; but after the first half-hour there begin to appear certain signs of slight collapse under the continued effects of ether. This is manifested by increasing rapidity of the pulse, which begins to mount up slowly, a few beats at a time; by shallow respirations, which are often quite marked; by drenching sweats, which come out on the patient so as to run off the face and neck in streams; and by cool extremities. Etherization prolonged in this condition and to this extent during the third half-hour produces still more markedly all these symptoms of prostration; and when the patient has reached the stage when the slightest amount of sighing respiration begins; when the respiration instead of being regular, although shallow, begins to mark an irregular measure, then a period of great danger has come on, and the time for totally suspending the ether, and for stimulation, heat, etc., has arrived. Ether the first half-hour is only a good agent; the second half-hour it is tolerable; the third half-hour it begins to be dangerous in its effect upon the patient. Now, of course, we have got to consider how much the relief of shock to the patient from not feeling the pain of an operation may be compensated for, or rather I should say its good effects done away with, by the fact, that a very prolonged etherization may lead to secondary prostration and collapse, and secondary shock from that cause alone. In other words, we can give patients ether, can put them to sleep; they will not feel our cut at all; they will be spared the terrible agony of the knife, of sewing up and sponging out the freshly cut wound: and will always remain ignorant of that shock and injury. So much saved. The secondary shock will come on from having had the ether kept up so long that the patient sinks into a state of dripping perspiration, feeble and rapid respiration and cool extremities. Ether or any complete anæsthetic, it is safe to say, diminishes the shock of an operation; but it cannot be said that it does away with the shock following an operation. Take such an example as this: a prolonged and serious operation on the abdominal cavity, whether for tumor or gun-shot wound, or any such cause. Ether enables the patient to be put to sleep and have this terrible series of processes carried through without consciousness. It does not prevent the secondary shock coming on afterwards of having had his viscera exposed, the peritoneal cavity opened, his intestines handled, the delicate sympathetic nerves in that part exposed to the air and touch, and therefore he does not escape at all the secondary shock; he has that just the same as if he had not taken ether at all. If to all this is added the fact that it may be necessary to keep him long under the anæsthetic; then you have added the prostration of the agent you are using, to the effects of the operation. I would not be taken to mean for a moment that I would not give ether in all these cases. I wish to point out the fact that it is possible to kill with it; that it is not an unmixed blessing; that it should be regarded as a powerful agent for evil as well as for good; should be used with great care in surgical operations; and should be used just as short a time as you possibly can.

Primary Anæsthesia. — This consists in that moment of temporary unconsciousness, which comes on after the patient has taken five, six, eight or ten strong inhalations of ether before he passes on to the period of excitement. He takes the sponge, breathes two or three times, is told to breathe more strongly, gives five or six forcible respirations, does not get red and stiff, but is temporarily narcotized, and at that moment a simple operation can be done without his feeling it or shrinking, and he will wake up the next moment totally unconscious of what has taken place. Complete anæsthesia, on the other hand, is when we push it to the extent of coma and stertor, in conditions where we must have absolute relaxation, as in reducing dislocations, and in prolonged operations.

It is a very curious fact that those who are in the habit of using alcohol largely are very hard to etherize. This is familiar in all hospitals. The drunkard will take an immense amount of ether before he will go to sleep; and sometimes it is almost impossible to get him thoroughly quiet. Another condition also arises in these excitable subjects, which is an uncontrollable muscular tremor, which persists after they are really unconscious and asleep. This sometimes is extremely annoying to the surgeon, and the cause of great delay and bother. It passes off after a period of twenty minutes or a half hour; and you frequently hear it said in these cases, that just as the surgeon is putting in his last stitch, the patient, for the first time is becoming perfectly quiet, and in a proper state for an operation. I do not know any way in which this can be either anticipated or prevented. It has to be endured. You take away the ether and the patient keeps on, generally; you push it and the same is true. It is well to give the ether lightly, and to expect in fifteen or twenty minutes that the patient will get into a proper state of insensibility.

I think we do not realize how soon patients lose consciousness under an anæsthetic. If you ask them after the operation is over, and they have recovered their senses, on the next day, the last thing they remembered, they will usually mention some little incident, or word, that was spoken at a time long before you thought they were fit to have an operation done; and yet mental consciousness of what was going on around them was entirely lost.

Now we ought to devote a few minutes to speaking of the recovery from ether, because that is quite an important point. The patient comes out of ether by an exactly reverse process to that in which he went in, — breathes less deeply, ceases snoring, perspiration becomes dried up; the pulse improves and grows slower; he gets a little color; finally recovers consciousness enough to open the eyes and talk; then passes into the state of intoxication, hysterical intoxication, precisely the complement of that which he had when he first got under the ether, before he fell soundly asleep; talkative and boisterous; demonstrative; he remains some time in that condition, and finally gets tired out, and then drops off into a natural sleep, which frequently lasts several hours, and need not occasion the slightest alarm provided the breathing is regular, and the pulse good. Of course, after any severe operation, during this period the patient should be carefully watched, because at the period when reaction comes on, and he wakes up and his circulation is restored, he is especially liable to have what is called intermediate hæmorrhage come on from small vessels, which had ceased to bleed in the faint condition of a prolonged etherization, but which will open and start up again when the heart resumes its power; but apart from that, and with general watching, one can feel perfectly easy about a patient who has waked up from ether, gone through the period of intoxication, and gone to sleep, for when he wakes the next time he will be rational.

There are several cautions to be used in giving ether to patients, with regard to their mental condition. One is with regard to giving ether to females; it is safer and more prudent that it should be given in the presence of some other female, as a nurse or friend, and that under no circumstances, unless those of absolute necessity, should the physician etherize a female patient alone. Various visions and dreams and unpleasant suggestions may occur to the mind of the patient in the narcotic state, and she may refer them to the person who happens to be giving the ether; and most unpleasant consequences have resulted sometimes from the assertions of the patient, the next day, of occurrences that never took place, or things that were never said. The presence of impartial witnesses, and especially one of the patient's own sex, is the best protection against the chances of such an occurrence. We must be extremely cautious when the patient is waking up not to say anything in their hearing which they may repeat to our detriment, especially points of prognosis. It is not always best that patients should know that a cancer has been removed. Their lives are made miserable. If they hear that word, they feel that it is a sentence of death, sooner or later; and it is wiser sometimes that they should be deceived, and their lives made more comfortable. Anything that is said during the anæsthetic state may be heard by the patient and repeated to you, very much to your astonishment, the next day. This is true of going under ether, and coming out, both. You should keep silence, and caution those around to do the same. The attendants and every one should observe a religious silence with regard to any statements that the patient happens to make while intoxicated. Family secrets and all sorts of things may be told under circumstances which might make infinite mischief if they were repeated. It is one of the first lessons, I think, which should be impressed on the medical student, nurse and attendant on the sick, that nothing heard in the sick-room should ever go out of it. It is fully as much for your own advantage, in after years, as for the good of the patient.

Etherizing Babies and Children. — It is best, I think, in very young children to use an open sponge without any towel; give them all the air you can. It is of no sort of use to temporize with children when they resist: it is only cruelty. Seize them, put them on the back, hold the sponge to the nose, and put them to sleep. If you yield to their entreaties, which are very pitiful, you are really more cruel than if you persevere. In the grown person it is far different. He is in possession of reason, and if he feels suffocated it is much wiser to take the ether away an instant. But so sure as you give the child another whiff of air and take off the sponge, so sure you have got to begin over again the whole process of etherization. I would not be understood to say it is not proper to take away the sponge occasionally in little children, but never in consequence of their entreating or asking; otherwise you frighten them more, hurt them more, and prolong the case. Babies and children are very quickly etherized, a matter of only a few seconds; and they speedily come out of it after the ether is taken away. I have seen in feeble children, once or twice, where ether was pushed very hard, convulsions produced. This is a very unpleasant complication, which indicates that you must take away and keep away the anæsthetic. I never heard of any dangerous consequences resulting; but unilateral epileptiform convulsions do occasionally occur in little children in the process of etherization.

Nausea and Sickness after Breathing Ether. — There again chloroform is better than ether. Patients who take chloroform are not so nauseated as those who take ether. The majority of patients who take ether have sick-stomach after it; and in some ways it is salutary. They recover from the ether quicker, get it out of the blood quicker, do fully as well, to have a sharp period of vomiting after coming out of the ether. But we can conceive that there are conditions in which vomiting after ether may be very disastrous to certain kinds of wounds and certain conditions; for instance, in the peritoneal cavity after laparotomies; and it would be very desirable if we could find some agent that would check this nausea. Unfortunately we do not know of any. Bromide of potash, at one time, had an immense reputation in this respect, but proved to be fallacious and not lasting, as a remedy. An empty stomach, the giving of cracked ice, of aromatic spirits of ammonia, of minute quantities of brandy and water, sometimes of black coffee, sometimes of tea, will settle the stomach after ether. Sometimes one agent does, sometimes another. If the vomiting after ether is a matter of an hour or two, it is generally of no consequence. In the condition of profound shock which comes on after severe operations and after very prolonged etherizations sometimes vomiting merely marks the continuance of the shock; and occasionally these patients go on with nausea persisting until the next day, and that is usually a very fatal sign.

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Original Articles.

REMARKS ON THE CLINICAL VALUE OF EHRLICH'S METHODS OF EXAMINATION OF THE BLOOD.

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(Concluded from No. 7, page 161.)

IN considering now briefly the main diagnostic points which may be obtained from a morphological examination of the elements of the blood, let us first take up the so-called diseases of the blood itself.

Ehrlich, in his address last April before the Eleventh Congress for Internal Medicine, says: "With diseases of the blood, in contrast to most other affections, we find ourselves in a favorable position in that we are able to obtain during life, and not for the first time post-mortem, satisfactory information concerning the nature of the changes taking place." Here, perhaps, the examination of the blood is of the most positive advantage, but as I shall try to show later, there are many other conditions where it may be of considerable help.

First, then, let us consider schematically the characteristics of the various types of anæmias, noting how much may be determined from an examination of the dried specimens alone.

Before taking up the essential anæmias it may be well to consider the general features common to most secondary anæmias.

Secondary Anæmias.

Oligocythæmia.

Oligochromæmia. (The relative loss in hæmoglobin being considerably greater than in corpuscles.)

Variations in size of the red elements with perhaps slight average diminution in diameter.

Poikilocytosis.

Pallor of the individual elements, that is, the point of greatest biconcavity more marked than normally.

Degenerative forms.

Nucleated red corpuscles (normoblasts).

Leucocytes. There is a leucocytosis in acute cases. In old chronic secondary anæmias the leucocytes may be about normal or even sub-normal in number, and in these cases where the course is much less favorable, nucleated red corpuscles are not nearly as numerous, and an occasional megaloblast may be seen. The following case is a good example of a secondary anæmia.

D. *Grave Secondary Anæmia following repeated Venesections* (practised by the patient herself).

Red corpuscles	1,775,000
Colorless corpuscles	10,500
Hæmoglobin	19%

Specimens of blood stained with the triple stain showed: considered difference in the size of the corpuscles; moderate poikilocytosis. Three typical normoblasts seen while making a differential count of over one thousand leucocytes. Differential count:

Small mononuclear	10+%
Large mononuclear	1.5%
Transitional forms	1.1%
Multinuclear neutrophiles	85+%
Eosinophiles	2.1%

It is easy to see that many of the most important points are to be obtained here from the examination of a dried specimen; only the actual count of the elements is lost.

Primary Pernicious Anæmia.

Oligocythæmia (more marked than in any other known condition).

Oligochromæmia, which is absolute but not relative: the relative proportion of hæmoglobin being higher than the number of corpuscles (a most characteristic point).

Great variation in the size of the elements with probably an average increase in size.

Poikilocytosis (marked).

Degenerative forms.

Nucleated red corpuscles in varying numbers, a most characteristic point being the presence of a distinct proportion of megaloblasts which, when present in a considerable proportion are almost diagnostic. Megaloblasts are to be found, as has been said above, in other "essential blood diseases," and sometimes in grave secondary anæmias. As Ehrlich has pointed out, an occasional megaloblast with a considerable number of normoblasts is a point of relatively little significance, while the presence of a small number of nucleated red corpuscles consisting largely of megaloblasts would be a grave sign. Nowhere does one see so large a proportion of megaloblasts as in pernicious anæmia, and nowhere are such typical large forms found.

Leucocytes: usually diminished in number, showing a relative increase in the small mononuclear elements (lymphocytes, small transparent forms), while the multinuclear elements are relatively diminished, sometimes being under 50 per cent.

The number of eosinophiles varies.

The following case is an example of this: The blood was from a case of pernicious anæmia with between one and two millions of red corpuscles in the cubic millimetre and a small number of leucocytes:

Small mononuclear leucocytes	[illegible]
Large mononuclear and transition forms . .	[illegible]
Multinuclear neutrophiles	[illegible]
Eosinophiles	[illegible]

Here the difference between the relative proportion of red corpuscles and hæmoglobin is an important diagnostic point, but with the presence of the marked poikilocytosis and megaloblasts, and in severe cases the changes in the relative percentage of the colorless corpuscles, the diagnosis may be made with more certainty from a dried specimen than by the blood-counter.

That there are grave and even fatal anæmias which do not fall under this heading, which show deviations from this type of blood, is undoubted. Some of the anæmias associated with an enlarged spleen ("splenic anæmia,") as well as some of the anæmias with Hodgkin's disease do not fall into this class.

The great majority, however, of the cases which have been classed clinically as progressive pernicious anæmia show this type of blood; and in this brief summary we can only mention those definite types that have been so far made out.

Chlorosis.

Oligocythæmia (variable, usually moderate). In 64 cases in which I counted the blood and estimated the hæmoglobin, the average number of red corpuscles was 4,096,544, while the average per cent. of hæmoglobin was only 43.3 per cent.

Oligochromæmia (relatively very great).

Difference in size of the corpuscles with possibly a slight average diminution in the size in severe cases.

Poikilocytosis, considerable in severe cases.

Pallor of the individual elements.

Degenerative forms.

Nucleated red corpuscles in severe cases where there is marked oligocythæmia.

Leucocytes. There is little if any increase in leucocytes. In my 64 cases the average number of leucocytes was 8,467, a very slight increase. Thus it may be seen that while the morphological characteristics of the blood in chlorosis are nearly the same as in secondary anæmia, the essential characteristic, that of the great relative diminution in hæmoglobin, cannot be entirely denied, as v. Limbeck[14] has attempted to do.

The so-called "simple anæmias," in my experience, show generally the same characteristics as the secondary anæmias. This class, as a matter of fact, simply includes those anæmias for which we can find no cause, and which do not fall into the definite class of primary pernicious anæmia. They are probably usually examples of chronic secondary anæmia.

Leukæmia is generally met with in two forms:

(I) *Spleno-Myelogenous Leukæmia.* The blood shows quite distinct characteristics.

Oligocythæmia, rarely under 2,000,000.

Oligochromæmia, relatively considerable.

Difference in size of the corpuscles with possibly a slight diminution in the average size.

Poikilocytosis, marked in severe cases.

Degenerative forms.

Nucleated red corpuscles: generally more numerous than in any other condition of the blood. Both normoblasts and megaloblasts may be found — numerous large elements in the process of division are not uncommon.

Leucocytes: generally increased in number more than under any other circumstances, while in their individual characteristics and the relative proportion of the different varieties one to another they show marked deviations from the normal.

(1) There is a very small relative proportion of the small mononuclear elements.

(2) The polynuclear neutrophilic elements are numerous, but in actual proportion often diminished. Great variations in size may be noted.

(3) The large mononuclear elements are very numerous, and among these are certain elements in which the protoplasm is filled with fine neutrophilic granules. Ehrlich has termed these elements.

(4) Myelocytes. These are found (in adults) barring an occasional unimportant exception, only in this form of leukæmia; on examining the blood-forming organs they are to be found alone in the marrow (Ehrlich), hence the name. There is also a number of large mononuclear elements with protoplasm staining deeply like lymphocytes.

(5) The eosinophilic leucocytes are present in about a normal relative proportion, that is, are absolutely greatly increased. They, too, as in the case of the polynuclear neutrophiles, show the greatest variations in size.

(Of certain amphophilic and basophilic leucocytes occurring in leukæmic blood it is not worth while to speak in this brief summary. Their practical diagnostic importance is not yet great.)

The proportion of these elements in an average case of leukæmia may be shown in the following count, from a case in Professor Osler's wards at the Johns Hopkins Hospital, in which the proportion of white to red corpuscles was as one to three.

Small mononuclear leucocytes	.96%
Large mononuclear and transition forms . .	[illegible]
Multinuclear neutrophiles	[illegible]
Myelocytes	[illegible]
Eosinophiles	[illegible]

The diagnosis of this form of leukæmia depends then largely upon the histological examination of the blood. The most characteristic points are: (1) the presence of nucleated red corpuscles; (2) the relative diminution in the small mononuclear elements; (3) the great difference in size in the multinuclear elements; (4) the presence of myelocytes; and (5) the presence of a normal proportion of eosinophiles in so extensive an increase of leucocytes. The presence of a nearly normal percentage of eosinophiles I still consider a point of some value in the diagnosis of this form of leukæmia. Many authors have, I think, entirely misunderstood Ehrlich's original statements with regard to this point. He has, so far as I know, never asserted that the presence of eosinophilic cells in leukæmia was diagnostic; and he has not, as so many have assumed, asserted that they were necessarily present in an increased relative proportion. Neither has he said that they are present in increased numbers in all forms of leukæmia. In twelve cases of typical spleno-myelogenous leukæmia, from which I have specimens of the blood, the presence of at least a normal percentage of eosinophiles has been in all a marked characteristic.

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[14] Prager Med. W[illegible] [illegible] No. [illegible]

(II) *Lymphatic Leukæmia.* This form is much rarer. It is often the most acute and rapidly fatal of the so-called blood diseases. Here the oligocythæmia is often more marked than in the other forms, while the proportion of white to red elements is commonly not so great. Nucleated red corpuscles are rare, and when present are often megaloblasts. The colorless corpuscles here show a great increase in the small mononuclear elements. In a case, for the blood of which I am indebted to Dr. F. C. Shattuck, there were found:

Small mononuclear elements (almost entirely lymphocytes)	97.9%
Large mononuclear elements	0.4%
Multinuclear neutrophiles	1.4%
Eosinophiles	0.1%

That forms of leukæmia may occur where the blood does not answer to either of these types, is true, but they are probably uncommon. In 16 cases of leukæmia from which I have specimens of the blood, 12 corresponded exactly to the first type, three to the second; while in one case, which occurred at the Johns Hopkins Hospital, where all the lymphatic glands, the spleen and the marrow were markedly affected, the proportion of white to red corpuscles being as one to twenty-five, the blood contained but six per cent. of multinuclear elements, 5.4 per cent. of myelocytes, one per cent. of eosinophlies, the large mononuclear and small mononuclear leucocytes representing the rest of the elements, 87.6 per cent.; nucleated red corpuscles were scanty. (In this case karyokinetic figures were found in the nuclei of some large mononuclear leucocytes in the blood, and in a great number of similar elements in the bone marrow; they were present, but less numerous, in the spleen, lymphatic glands, and lymphatic tissues generally. The case will be reported later.)

Some other conditions in which the examination of the blood may be of value.

All conditions associated with any inflammatory process, if it be of any extent, are accompanied by a leucocytosis; and, as has been before said, this leucocytosis in man consists generally in an increase in the relative proportion of the polynuclear neutrophiles, the increase being at the expense of the small mononuclear elements. Such conditions are *abscess, phlegmon, erysipelatous processes, acute tonsillitis, inflammations of the serous membranes, pleurisy, peritonitis (appendicitis), meningitis.* This leucocytosis varies in extent in various conditions. It varies within certain limits, proportionally to the extent of the process. The following is an example of an excessive leucocytosis:

K. *Pneumonia, Acute Hæmorrhagic Nephritis.*

Red corpuscles	5,0[illegible]4,000	1:44[illegible]
Colorless corpuscles	111,7[illegible]0	

Differential count of the leucocytes:

Small mononuclear	0.32%
Large mononuclear	1.12%
Transitional forms	1.12%
Multinuclear neutrophiles	97.44%

GENERAL DISEASES.

Tuberculosis. — In all forms of tuberculosis there is usually a relatively slight anæmia. The anæmia of tuberculosis is often more apparent than real. In the latest stages of pulmonary tuberculosis there may be a relatively high proportion of corpuscles and hæmoglobin, while on superficial examination there would appear to be grave anæmia. Leucocytosis is present to a greater or less extent in almost all forms of tuberculosis, particularly in chronic pulmonary tuberculosis. In acute general tuberculosis this is probably usually the case; and several counts by Uskow show that in his cases the increase was simply in the multinuclear elements with a relative diminution in small mononuclear elements alone. One case, which I have observed was, however, a marked exception to this rule, the colorless corpuscles being present in diminished number.

Typhoid Fever. — Here the blood shows certain quite important changes. It has been shown by various authors that typhoid fever may be followed by a grave anæmia. In one case which I observed in Professor Osler's clinic at the Johns Hopkins Hospital, this amounted to 1,300,000. The colorless corpuscles on the other hand, have been shown not only to be present in a not increased number, but actually during the height of the fever to be somewhat diminished, a fact of considerable importance from a diagnostic standpoint. This point has been verified by Dr. J. S. Billings, Jr. and myself in nearly 200 counts of the blood in typhoid fever.

Furthermore, the careful analyses of the blood by Uskow [15] and Chetagurow [16] have shown that in patients suffering from typhoid fever (1) there is a sharp falling off in the relative number of multinuclear elements, it may be under 50 per cent.; (2) this fall begins usually in the first week, is more sharply expressed in the second or third or even fourth weeks; (3) the percentage of "over-ripe" elements begins to increase about three to twelve days after the disappearance of the fever. Chetagurow finds that it does not reach the normal until the tenth or eleventh weeks. (4) The percentage of the small mononuclear elements average only one and a half times as much as that of the large mononuclear, instead of being normally three times as great. (5) The decrease in the number of the multinuclear elements depends not so much on the parallel increase in the percentage of the small mononuclear leucocytes as on the increase in the percentage of the large mononuclear cells. This point appears to be one of considerable importance, and on various occasions I have been able to make a probable diagnosis of typhoid fever when without the examination of the blood it would have been extremely difficult. In most of my counts in typhoid fever I have found the large mononuclear elements even more numerous than these authors.

Case: H. *Typhoid Fever*, 4th week:

Small monunuclear	18.1%
Large mononuclear	22.4%
Transitional forms	4.5%
Multinuclear neutrophiles	53.1%
Eosinophiles	1.9%

The differential diagnosis thus between typhoid fever and tuberculosis in its various forms, or the various inflammatory conditions, and particularly pneumonia, of which we shall speak next, is made materially easier.

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[15] Prager. Med. Woch., 1891, No. 10.

[16] Pathologisch Anatomische Veränderungen des Blutes bei Typhus Abdominalis, Diss. St. Petersburg, 1891; cf. Vir. Archiv, Bd. 120, F. xii, B. vii, 187.

Pneumonia. — That a leucocytosis of considerable extent occurs in pneumonia has long been known. The researches of Uskow,[17] Kikodse,[18] and others have led to interesting results. Kikodse's conclusions are as follows: (1) The number of white blood corpuscles in the blood of a patient with pneumonia exceeds the normal one, two, or three times.[19] (2) In severe cases which threaten a fatal result, there is no leucocytosis to be observed. This is therefore of great prognostic importance. (3) The number of colorless blood corpuscles increases largely through the increase in the multinuclear elements. (4) These changes in the blood appear at the beginning of the disease, and, indeed, before very important changes have developed in the lungs, remaining without marked variation until the crisis. (5) The most constant change in the number of leucocytes is observed on the day before the crisis when there is an increase in the percentage of the multinuclear elements. (6) The development of the leucocytes, as also the increase in the number of multinuclear elements in the blood, takes place *pari passu* with the increase of the temperature. (7) The morphological elements of the blood during the fever of acute pneumonia seem to be delayed in their progress towards final destruction. (8) At the time of the crisis in the temperature there is a crisis in the number of the white blood corpuscles, which fall sharply to normal and often under normal, the percentage of multinuclear elements becoming at the same time less. (9) On the day of the crisis the colorless corpuscles show a special tendency to degeneration.

The most valuable point here shown is the fact that pneumonia is usually associated with an extensive leucocytosis, which is coincident with the fever. That in some fatal cases this leucocytosis has not been observed is of great interest, but of how much importance we cannot yet be sure.

Among other diseases which are generally associated with a leucocytosis, in which, however, no other important changes have been noticed, are *diphtheria*, *acute rheumatism*, *endocarditis*, and *small-pox*.

In *scarlet fever* Kotschetkoff[20] found in an analysis of 20 cases, that there was a considerable anæmia coming on gradually, and that there was an extensive leucocytosis: in several fatal cases, over 30,000. This leucocytosis appeared from two to three days before the eruption, and reached its maximum two or three days after its disappearance, where it remained for several days to fall gradually. The percentage of the polynuclear elements with the eosinophiles was at all times markedly increased, in some cases as high as 98%. All the cases which he observed, with over 95% of "over-ripe" elements died. A leucocytosis of over 30,000 was a grave symptom. The behavior of the eosinophilic cells was particularly typical. In mild cases the number of eosinophilic cells was normal or even sub-normal in the beginning. From the second or third day it gradually increased until it reached its maximum (eight to fifteen per cent.) in the second or third week of the disease. It then gradually sank until it reached its normal point about the sixth week.

In severe cases the opposite took place, namely, the number of eosinophiles fell rapidly and disappeared perhaps in two or three days. The percentage of the small mononuclear elements fell in the first part of the disease to two or three per cent., and gradually returned to normal. The percentage of the large mononuclear elements showed nothing characteristic. These variations in percentage were so typical that the author believes that a prognosis may be based on their course.

New Growths.— In some rapidly growing tumors a considerable leucocytosis has been noticed.

In almost all neoplasms at an advanced stage there is a considerable degree of anæmia; the blood showing the changes typical of a secondary anæmia. In some cases of obscure abdominal trouble the evidences of a grave secondary anæmia may be of considerable value in differential diagnosis, particularly between tuberculosis, where the anæmia is usually slight, and carcinoma, where it is generally severe.

Parasites and Bacteria.— It is hardly within the scope of these remarks to enter into particulars concerning the various organisms which may be found in the blood. Suffice it to say, that most of the basic stains will demonstrate bacteria or the malarial parasite. For the malarial organism the various combinations of eosin and methylene blue give particularly good results, though the examination of fresh, unstained specimens is, I think, more satisfactory.

Returning then in conclusion to the original theme, the value of these methods of contrast staining, we may, I think, justly assert that, in the first place, the red corpuscles may be in almost all respects as satisfactorily studied as in the fresh specimen. Degenerative (?) and regenerative forms, which are difficult or impossible to demonstrate by other methods, are here easily studied.

The leucocytes we have been enabled to analyze and classify in a manner heretofore impossible.

Well-prepared specimens can, as Mueller[21] says, be subjected to every method of examination that has been applied to microtome sections. By the practising physician the blood-counter and the hæmometer are not easily carried about and applied at the bedside; a fresh specimen often spoils before one reaches the office; it is, however, easy to carry two small forcipes, a few cover-glasses, and a small vial of alcohol in the pocket, and a dried specimen once made can be examined at leisure.

The classification of leucocytes may at first seem complicated, but a little study soon clears it up. That one cannot become familiar with such methods in a day or in a week is true, but few valuable clinical methods are introduced into medicine which do not require study and practice before one can appreciate them and apply them intelligently.

I believe that no one who devotes himself for a time to acquiring proficiency in these methods of examination of the blood will fail to find them of considerable assistance in his daily work.

These particular methods have given us valuable hints as to the nature of some of the so-called diseases of the blood; they have given us the most reliable means of diagnosis in some of these processes which we now have; they have opened a large and hopeful field for observation in many other pathological processes. Here some may be disappointed to find few, if indeed any, changes in the blood pathognomic of any particular disease; but from the few examples I have cited in this short review of the subject, we may, I think, justly hope to add to our present knowledge more of these small points which, though they may not of themselves be diagnostic, form by their accumulation the symptomen-complex, as the Germans call it, of a specific disease.

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[17] Loc. cit.

[18] Centralblatt f. allgem. Path. u. Path. Anat., [illegible], p. [illegible].

[19] [illegible]

[20] Centralblatt f. allgemeine Path. und Path. Anat. [illegible], No. 11.

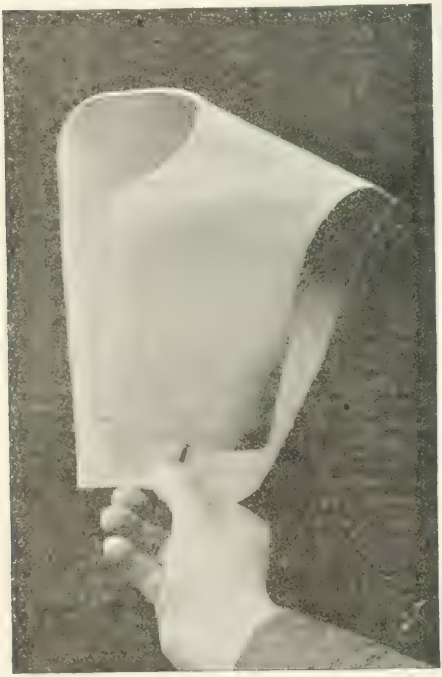
[21] Loc. cit.

◆

AN APPARATUS DESIGNED FOR THE TREATMENT OF DISLOCATION (UPWARD) OF THE ACROMIAL END OF THE CLAVICLE.

BY EDWARD A. TRACY, M.D.,
Fellow of the Massachusetts Medical Society.

The essentials of such an apparatus are power to keep the parts affected in apposition, and that for such time as may be required for their reunition.

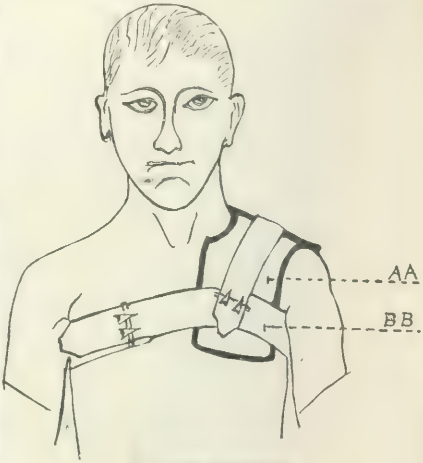


Claviculo-Scapular Splint.

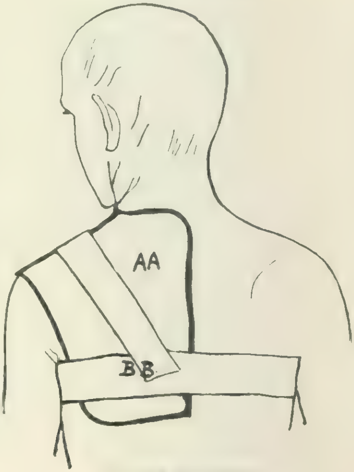
Hamilton,[1] after narrating a case of clavicular dislocation wherein anchylosis and atrophy of the whole arm occurred, which he attributed to "too long and too tight bandaging of the arm and especially to the pressure of the axillary pad," asks, "Is it worth while, then, to incur the dangers of too long confinement and of excessive bandaging for the purpose of attaining the always uncertain result of maintaining the bone in its socket?"

I feel justified by these remarks in bringing to the notice of surgeons a method of treatment which obviates the dangers mentioned.

The shoulder is looked upon as a pyramidal body, with its apex at the head of the humerus. If a part of its walls accidentally separates outward, a rational method for retaining it in its normal position would be to splint the sides, and maintain thereon a steady pressure toward the base of the pyramid. This appears also to be feasible.



Front view of apparatus.



Back view of apparatus.

The apparatus devised with this intent consists of two parts, as shown in the engraving.

A A represents a shoulder-splint, moulded over the upper chest wall, the clavicle, and the scapula. It can be made of any good plastic material. (At present I am experimenting on a new material which promises well; later on, I hope to publish the results of these experiments.)

B B illustrates the belting to retain the splint and the shoulder system in position. It consists of a chest-strap, made partly of strong webbing and partly of elastic webbing, and having attached to it a shoulder-strap made of strong elastic webbing.

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[1] Fractures and Dislocations, seventh edition, p. 681.

The illustrations show the splint and strapping as it appears when applied.

(The shoulder can be held down more forcibly, if desired, by passing a band over the shoulder-splint and attaching it to a hip-band having a perineal strap. A sling, to support the wrist, and to serve as a reminder to the patient to favor the injured side, will generally suffice.)

The above-named authority, Hamilton, writing of the more successful apparatus used in the treatment of this injury (in which the arm is fixed and pressure brought to bear on the end of the clavicle by means of a band over the clavicle and the elbow) states: "The practical difficulties are: (1) the sensibility and consequent inability sometimes of the point of the elbow to bear the requisite pressure; and (2) the even greater sensibility of the skin over the top of the clavicle; (3) the tendency of the bandage to slide off from the shoulder and, also to become displaced from the end of the elbow; (4) the gradual relaxation of the bandages, which, when existing even in the most inconsiderable degree, is sufficient sometimes to allow the bone to slip out from its shallow socket; (5) the impossibility of fixing the scapula, upon whose immobility as well as upon the immobility of the clavicle the retention depends; and, finally, (6) the great length of time requisite to unite firmly the ligaments, if indeed they ever again become actually united."

These difficulties are minimized in my apparatus, for these reasons: (1) The elbow is not used as a *point d'appui*. (2) The pressure on the clavicle is not localized, but distributed over the bone by the moulded splint. (3) There is no tendency for the shoulder-band to slide, for it acts on the clavicle at right angles. (4) There is no gradual relaxation of the bandage, for the elastic webbing keeps things taut. (5) While perfect immobilization of the scapula is impossible, I believe that, with a plastic material, practical fixation can be secured, and that we can keep the ends of the clavicle and the acromion in apposition; if we do this, a slight mobility of the shoulder as a whole is not much to be feared. (6) The difficulty in regard to the length of time necessary for the treatment of the injury disappears, for this apparatus is worn with comparative comfort and without any danger, as the following case has demonstrated:

J. M., a well-built man of thirty, while riding a bicycle over a defective roadway, fell into a ditch, striking on his left shoulder. Ten days after receiving the injury he came to me, meanwhile have done nothing for it but apply a liniment. On examination, the outer end of the left clavicle was found about one-third of an inch above the acromion, causing a marked deformity of the shoulder contour. Dr. M. F. Gavin saw the patient in consultation, and because of the time elapsed since the reception of the injury deemed treatment unadvisable.

I felt that reunition of the ligaments was out of the question; but since my patient complained of weakness in the injured shoulder, I determined to try what a prolonged retention of the parts in a position as near to normal as possible would effect.

For this purpose I constructed an apparatus, as described above, which he wore during four weeks without discomfort, riding a bicycle and exercising otherwise daily. Then, without consulting me, he took off the apparatus, considering himself cured. I saw him two weeks after, and to the eye, there was scarcely any deformity perceptible. The clavicle appeared to have united with the acromion, a callous-like mass being readily felt. The apparatus was not then reapplied. Three weeks later, after free daily exercise with dumb-bells and the like (my patient had "put up" a fifty-pound weight several times without feeling pain or weakness in his injured shoulder), I found the clavicle as regards position and fixation in a similar condition, but not so bad in degree as when I saw him at first. I advised rest and a reapplication of the apparatus. He wore it for a short time; and after resting the shoulder for eight weeks, I found, on inspection (with the patient standing upright and hands hanging at his sides) a slight rise of the shoulder outline just over the end of the clavicle, with a slight amount of play between the clavicle and the acromion; there being a marked improvement over the previous condition of the parts. He uses the arm freely and without any twinge or weakness to recall to him his accident.

I desire to record this case more for the demonstration it affords of the availability of this apparatus for use in clavicular injuries rather than for any brilliancy in the results achieved. The fact that ligaments when separated for a week or more do not reunite when again brought together, ought not to require any emphasis from the writer.

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ON THE DISTRIBUTION OF THE PARALYSIS IN THE LEAD-POISONING OF CHILDREN.

BY JAMES J. PUTNAM, M.D.,
Harvard Medical School.

In the course of an article on "The Lead-Paralysis of Children," published in the fourth volume of Keating's "Encyclopedia of the Diseases of Children," I called attention to the fact that, so far as we can judge from the few cases on record (which are those appended in tabular form), it is as common to find paralysis of the feet and legs, as of the arms, in the lead-poisoning of children; whereas among adults it is unusual to see paralysis of the feet and legs at all, though it does sometimes occur.

The natural conclusion was that, in childhood, the influence of greater and more complex use has not made its appearance to increase the susceptibility to disease, of the neuro-muscular apparatus of the upper extremity. The probability that the generalization from these few clinical observations was correct, has since then received support from the report of a case of drinking-water paralysis, in a child of eight, published by Dr. Sinclair White, in the *British Medical Journal* for 1890, Volume I, page 18.

The subject gains in interest, also, in another direction. Dr. Leopold Stieglitz, in the course of a recent paper describing an important series of experiments upon lead-poisoning in animals,[1] points out that the occurrence of this more generalized form of paralysis in children, if it should be found to be the rule, would support his view of the propriety of reasoning from animals to man, in deciding certain questions of pathological anatomy. He could refer to but one case —

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[1] Arch. f. Psychiatrie, etc., vol. xxv, [illegible]

that reported by Duchenne de Boulogne[2] — and regrets that no more had been published, not having seen the cases above referred to.

The essential point of Stieglitz's own results was, that in animals who become paralyzed from lead, the ganglionic matter of the spinal cord is regularly found diseased.

This would easily explain the changes which are found also in the motor nerves; but, besides these, changes are also found in the posterior, sensory nerve-roots, and it cannot as yet be asserted whether the latter lesions are primarily of the nerve-roots, or primarily of the inter-vertebral ganglia, from which the posterior nerve-roots mainly take their rise.

◆

Medical Progress.

RECENT PROGRESS IN PATHOLOGY AND BACTERIOLOGY.

BY W. T. COUNCILMAN, M.D.,
Professor of Pathology in the Harvard Medical School.

PATHOLOGY.

In the past year a number of articles have appeared by Professor Grawitz of the University of Greifswald and his pupils, on the origin of the cells in inflammation. He seeks to establish a new theory of inflammation which represents an extension of the Stricker theory. The three most prominent theories which have been advanced in the past forty years are:

(1) That of Virchow, who held that inflammation consists essentially in altered nutrition of the cells. In consequence of the inflammatory irritant and the increased amount of the nutritive fluid which was given to the cells, they undergo various changes which may result in increased functional activity, or they may multiply and new cells and pus be formed from the old fixed cells of the inflamed part.

(2) The theory of Cohnheim, that the new cells in inflammation come exclusively from the blood-vessels, and represent the white corpuscles of the blood which have migrated through the cells of the vessels. Cohnheim and his pupils supposed that tissue formation could take place from these corpuscles. At the hands of most pathologists this theory of Cohnheim's has been modified to this extent, that in all acute inflammations there takes place an immigration of the leucocytes from the blood-vessels. These leucocytes undergo no progressive change. They either remain in the tissues and are absorbed and find their way back into the circulation by means of the lymphatics, or they undergo regressive metamorphosis. A number of cells, however, in all inflammations are formed from the fixed cells of the tissue and appear in the forms of the so-called round-cell infiltration, which is seen in the periphery of the inflammatory area.

(3) The theory of Stricker. In accordance with Stricker's theory, inflammation consists essentially in the return of the tissue to its former embryonic condition. Pus cells are not only formed by multiplication of the fixed cells, but there is also a free cell formation, or as he describes it, a return of the intercellular tissue to its embryonic condition. The theory which Grawitz has advanced, is essentially an extension of the theory of Stricker. In the various articles Grawitz makes no mention of the work of Stricker, although most of the reviewers have called his attention to Stricker's work. Grawitz appears to have been led to hold this idea of inflammation by investigations which he has made in the last few years on various forms of suppuration. He was led by his work here to believe that there is no essential difference between the leucocytes and the cells which are formed from the tissue.

The first article immediately bearing on this subject is an article by Viering,[1] on the healing of wounds of the tendon. The experiments were performed on rabbits. The Achilles tendon was used, and this was sometimes split longitudinally and sometimes cut across. The operation was done with antiseptic precaution, and suppuration took place in only three of the thirty-eight cases. The object of the investigation was to see the character of the inflammatory reaction which the tendon undergoes, and the part which its tissue takes in the formation of a cicatrix. The wounded tendon was investigated microscopically after various intervals of time. When the sheath of the tendon is cut at the same time, there first takes place a proliferation of cells from the sheath, which forms a granulation tissue which fills up the loss of substance made by the separation of the cut tendon. The reaction in the tissue of the tendon begins to take place four days after the section. It is first seen in the neighborhood of the vessels, and then gradually extends into the surrounding tissues. The first change in the tendon appears to be a swelling of the fixed cells. They begin to proliferate later than do the cells of the loose connective-tissue of the sheath.

The cells of the tendon, as we ordinarily see them, appear as spindle-shape elements with a brightly staining, rod-shape nucleus. On section of the tendon, the first change seen is the formation of a granulation tissue rich in cells, which appear to grow from the tendon sheath into the spaces left between the cut ends of the tendon. Four days after section, changes begin to appear in the tissue of the tendon itself. Both progressive and regressive changes are seen in the cells. In the regressive changes the cells swell up to an enormous size and various alterations in the cromatin are seen. These large cells do not appear to undergo any further change. The spindle-shape elements of the tendon also become enlarged, protoplasm appears around the nucleus and anastomosing processes between the cells become visible. These cells then begin to multiply, and new cells are formed from them. In addition to these cells, new cells, at first very small and intensely staining, appear in the homogeneous ground substance of the tendon, where no cells were previously visible. The ground substance of the tendon is composed of cells whose nuclei are not visible by any means of staining which we possess; and under the influence of a greater addition of nutritive fluid these cells become visible. Little or no change takes place in the tendon until its tissue becomes loosened up by the inflammatory exudation. Viering's conclusions of the source of the cells in the inflamed tendon are made as follows: First, cells from the tendon sheath; second, leucocytes; and, third, cells formed from the intercellular tissue of the tendon.

The next article bearing on the subject is by Grawitz[7] himself on the slumbering cells of the connective-tissue. Grawitz was led to take up the question of the various changes in the connective-tissue and their relation to progressive changes from having seen in the specimens of Viering, rows of cells which appeared to come directly from the tissue of the tendon, and not from the cells. It seems most probable to the author that the cells found in the connective-tissue and which are ordinarily described as small-cell infiltration, may come neither from the fixed cells of the connective-tissue and their derivatives, nor from a wandering in of leucocytes. These cells may be derived from the intercellular substance itself which appears to be free from cells, but really contains cells which lie concealed in a condition in which neither the cell body nor nucleus is visible. These inactive cells he describes as slumbering cells and believes that under certain conditions, as when they receive a greater supply of nutritive material, they gradually awaken and become visible. The nucleolus first appears and then small granules of chromatin appear forming the nucleus, which rapidly increases in size. A slight amount of granular protoplasm appears around the nucleus and gradually a small spindle is formed. The granular substance becomes more abundant, and the cells at first spindle-shaped, change into a stellate or into a round form with processes. He thinks the reason why this condition of the cells has been so long overlooked, is that the tissue is not investigated at the proper time. These cells appear before any change takes place in the nuclei of the fixed cells which would indicate cell proliferation. The changes are best seen in aseptic inflammations in which the tissue lesions are not complicated by the presence of leucocytes. The first change which is seen in the intercellular substance of the tendon is the appearance of nuclei in the very fine spaces which are seen between the swollen fibrillæ. These nuclei stain intensely with hematoxylin and no protoplasm or cell body can be seen about them. In œdematous tissues the connective-tissue corpuscles may undergo such a change that it is difficult to distinguish them from polynuclear leucocytes, and the newly formed cells of the tissue can also become changed into similar cells. The author has investigated these changes in all sorts of inflammations. He previously accepted the idea commonly held that the fibres of the connective-tissue should be regarded as a secretion product of the cells, but his investigations led him to believe that in the embryonic development of the connective-tissue, the cell substance itself becomes changed into bundles of fibrillæ. When fresh granulation tissue and cicatrices are stained with certain of the analine colors, long spindle-formed nuclei with no trace of cell body can be seen. The nucleus simply runs into a fine bundle of primative fibres which represents the body of the cells. In acute inflammation of the subcutaneous tissue, as in the formation of the furuncle, changes take place in the connective-tissue due to the action of a stronger lymphoid circulation and also to the entry of leucocytes into the narrow spaces of the tissue. The bands of fibres become softened, and in these fibres there appear numerous nuclei which were previously invisible, and which after the fibres have vanished, become swollen and form cells. As soon as the cells are formed they can undergo cell multiplication by the ordinary indirect division of the nucleus. In addition to this, direct division of the nucleus can also take place. The foci of cell infiltration consists principally of these newly awakened cells and their derivatives. In a chronic abscess which developed in the subcutaneous tissues of the abdominal wall, progressive disturbances of nutrition of tissue cells up to the formation of the pus cells could be followed without any complication by the presence of leucocytes. He also investigated the various inflammatory processes due to pus organisms, and in these the same thing was seen. Grawitz believed that the strong pressure under which the pus is frequently found in abscesses can only be explained by this new formation of cells. Transudation would not explain it, because the pus is frequently under higher pressure than that of the blood. He thinks that we may have a process of suppuration which is similar to the puriform softening which is described by Virchow in the thrombus. This takes place when a fibrinous exudation is formed in the course of an acute inflammation and afterwards undergoes softening. The typical pus with its viscid stringy character is only seen in the abscesses in which there is a solution of the intercellular substance.

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[2] Arch. gén. de méd., 1864, t. iv, p. 193.

[1] Dr. W. Viering: Ueber die Heilung von Sehnenwunden, Virch. Arch., Bd. 125.

The author's conclusions are as follows: In the embryonic developments of the connective-tissue and in the formation of cicatricial tissue from granulation tissue, many cells pass into fibrous tissue. This transformation is not a destruction of the cellular nature of the tissue but a slumbering condition from which the cells can again awaken; then the nuclei first appear within the fibres and the cell body is gradually formed around this. These cells are capable of division just as the normal fixed cells. The awakening of the slumbering cells in the connective-tissue substance shows an active nutritive process as much as does the nuclear figures of the permanent cells. The cause which produces this change is the inflammatory irritant. The beginning of all progressive processes in the connective-tissue is the same, and it consists in an increased activity of the cells and intercellular substance. Only the further course can decide whether healing or hypertrophy, or acute productive inflammation, or a tumor will be the result.

The next article is by Schleiffarth[8] on inflammation of the serous surfaces and the membrane of the brain. The author applies to inflammation in these parts the ideas of Grawitz. In inflammation of the serous surfaces he says the change into the embryonic condition, the transformation of the cells, can take manifold shapes according to whether a small amount of nutritive fluid is conveyed into the lymph channels, or whether the tissue is saturated with exudation. In the first place there is only an increase in the size of the permanent cells and an appearance of nuclei inside of the connective-tissue and elastic fibres, and finally multiplication of all of these cellular elements. In the second case the irritant acts so on the walls of the lymph spaces, they are pressed apart by the œdematous fluid and the cells forming the walls of these spaces appear and take on the abortive forms which are characteristic of the polynuclear leucocytes. The author does not believe that the fibrin which is formed on the free surface of a serous membrane or in the pia should be regarded as a exudation, but he thinks that it is a direct transformation of the inflamed tissue into fibrin. The cell protoplasm is changed directly into filamentous fibrin. He calls attention to the fact that in inflammation of the pia mater, the exudation is never on the surface, but is in the meshes of the pia arachoid. In an acute dry pleurisy where the fibrinous exudation is very slight he thinks that it is formed entirely by a fibrinous metamorphosis of the upper layers of the acutely inflamed tissue. Where the process is more chronic there is formation of new connective-tissue, and this, just as the cells in the more acute form, undergoes transformation into fibrin. Both processes may be seen along side of one another. Inflammation consists first in an awakening of the sleeping cells of the pleura, and the transformation of the cells into fibrin. He says that the reason why there is no formation of fibrin on the surface of the pia mater in cases of meningitis, is that the pia on the outside has a thin but tolerable firm layer of fibrous tissue. Within, however, there is a soft tissue containing numerous lymph spaces and vessels, and since the irritant acts on this, there is a transformation of fibres into nuclei and cells in the wide spaces of the connective-tissue. (It would seem more probable, however, that the reason why the inflammatory exudation is infiltrated in the meshes of the pia arachnoid and not formed as a membrane on the surface, is that the agent causing the inflammation acts here on the tissues and there is an abundance of space for the exudation to collect here. It is just as obvious why the exudation should collect here in the loose meshes of the tissue and force them apart, as it is that in the inflammation of the lung the exudation takes place within the alveoli.)

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[7] Prof. Dr. P. Grawitz, [illegible] Zelle [illegible] Entzündungen und die Veränderungen [illegible] progressiven Ernährungsstörungen, Virch. Arch., Bd. [illegible]

[8] Dr. C. W. Schleiffarth, Ueber die Entzündung der serösen Oberflächen und der Gehirnhäute, Virch. Arch., Bd. [illegible]

In the acute suppurative peritonitis due to the action of organisms, the author thinks that the suppuration should not be regarded as a process, taking place on the surface, but as taking place in the tissue itself, and the suppuration is really a breaking down of the tissue of the peritoneum. The newly-formed cells may arise both from the awakening of the cells which have undergone transformation into fibrous tissue, and also from the cells which line the lymph passages.

In an article on emphysema of the lungs[4] Grawitz follows out his theory of inflammation. The fact that emphysema is so frequently found on the edges of the lungs must lead us to believe that the cause of the dilatation of the alveoli is not to be sought in increased pressure within the alveoli, but in the relations of the circulation in the different parts of the lungs, the edges being more liable to slight disturbances of nutrition than the interior of the lungs. In the interior of the lungs there are numerous anastomosis of the bronchial and pulmonary arteries. In rabbits which are poisoned with phosphorus, the lungs became œdematous. When an animal continuously inspires small quantities of phosphorus gas for some weeks a true emphysema is developed in the edges of the lungs. The author designates the atrophy of the lung-tissue produced by œdema, as dropsical emphysema, and it is frequently found in man in cases of cardiac weakness. In this form of inflammation of the lungs there are various transformations of the connective-tissue of the lung, in the course of which it becomes converted into cells capable of amœboid motion. This explains the disappearance of the pigment from the emphysematous portion. The lymph spaces become widened and the granules of pigment appear within the spindle and round cells of the lymph passages. After the end of the inflammatory process, new cells free from pigment are found in the place of the cells containing pigment. The chronic emphysema which develops slowly without a preceding inflammation, can be explained by the transformation of the connective-tissue into cells, which may be a regressive change. Since the disturbances of nutrition constantly take place on the sharp edges where the weakest circulation is, so the atrophic emphysema also begins here first.

Grawitz gave a more extended description of his views at the Twenty-first Congress of the German Surgical Association in Berlin, June, 1892. He does not regard inflammation as the specific reaction of the tissue to a normal stimulus, but he groups it with other pathological processes, as with regeneration and tumor formation. In the inflammatory process the cells have generally been regarded as derived from the proliferation of the fixed cells of the tissue, or from the wandering of leucocytes into the tissue. The probability that they could come from a metamorphosis of the tissue itself into cells had been entirely overlooked up to the time of Grawitz. In inflammation of a fresh wound or in an abscess, the microscopic appearance can only be explained by the assumption that the connective-tissue ground substance itself becomes succulant and softened and changed into cells. This method of cell formation appears both in the purulent and productive inflammation. The fibrin on the serous surfaces in pleurisy and peritonitis does not represent a single deposit of fibrin on the surface but a change of the newly-formed tissue itself into fibrin. Even in cartilage under pathological conditions, cells can be formed from hyaline ground substances. The muscular fibre is also, according to Grawitz, formed by the confluence of cells whose nuclei have vanished. In the inflamed muscle the new cells appear in the interstitial tissue between the muscle, but they are also formed by a direct return of the muscle to its embryonic condition. This same thing may take place in the nerves.

Schmidt[5] has investigated the condition of the cells in the tissue of the fat, both under normal and pathological relations. The author first takes up the embryonic formation of fat. He finds that the old ideas on the subject are wrong and that the fat is not to be regarded as lying in a single cell, but what appears as a single cell represents a group of cells. According to the author, what we regard as a single fat cell is due to the union of a number of cells, and he speaks of the fat cell as a cell band. In the formation of the band, the nuclei of the cells first vanish and the fat drop then appears to be surrounded by a homogenous fine membrane which actually consists of a number of cells which can no longer be clearly recognized. The formation of the fat takes place in the same way in the bone marrow. When a lean individual becomes fat, the process of formation of fat cells is the same as in the embryo. The cellular tissue undergoes a transformation into cells and these cells take up the fat and then pass into a slumbering condition. In inflammation the process is exactly the reverse. The cells which are invisible again become visible. Nuclei appear in the membrane surrounding the fat cell and finally new cells are formed everywhere in this membrane. No nuclear figures are seen, and no evidence of cell formation in the ordinary way can be seen in these cell bands. Only after the previously quiescent cells have again appeared is there any evidence of nuclear division. The fat can also take part in the formation of the cicatrix, cicatricial tissue being formed directly from these embryonic cells. When the fat is undergoing atrophy new cells appear in the tissue around the fat drop and consume the fat. This produces diminution in the size of the fat drops, then the cells become separated from the fat bands and undergo a transformation into fibrilæ and elastic tissue.

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[4] Prof. P. Grawitz: Ueber Emphysem der lungen, Deutsche Med. Woch., No. 10, 1892.

[5] Dr. Hermann Schmidt: Schlummernde Zellen im normalen und pathologisch veränderten Fettgewebe, Virch. Arch., Bd. 128.

Kruse[6] has contributed an article on the development, structure and pathological changes of the cornea. The author first takes up the literature on the subject of the development of the cornea. He thinks that in its earliest condition it is cellular, and that the ground substance is formed not by a secretion from the cells, but from a direct transformation of the cells into the ground substance. He finds in the normal cornea two sorts of cells, one which represents the ordinary fixed corneal corpuscles in the spaces, and another which is connected with the fibrilæ of the cornea. In the formation of the fibres from the cells, it is not necessary that one cell should grow out into a single fibre, but the fibres are more probably formed by metamorphosis of long rows of cells. The author also investigated inflammations of the cornea and the healing of simple aseptic wounds of the tissue. In the healing of slight wounds there is simply a new formation of tissue to take the place of the defect, which is produced by embryonic cells formed by a rejuvenescence of the slumbering cells. In more extensive inflammations the process is complicated by the appearance of leucocytes in the inflamed tissue.

At the end of the article he reviews the literature of keratitis and finds that so far as the process has been described by various authors, especially where they give plates illustrating their ideas of the process, that their results essentially agree with his. The long lines which are formed in the fibres of the cornea, he regards as the newly-awakened cells. The author says that in the cornea as in the other tissues in which careful investigation has been made, there is a close connection between the histological appearances found in embryonic development and all sorts of pathological processes. In the course of development the corneal corpuscles pass into a condition of slumber in which they are no longer recognizable as cells. The cells which undergo the transformation into fibres first pass into the condition of slumber. The fibres are not formed as the excretion product of the cells, but by direct transformation of the cells into fibres, and between the fibres, cells remain which by proliferation may produce new fibre-forming cells. When the formation of fibres has reached a certain stage the remaining cells undergo analogous processes and pass into the condition of slumber. Even the lymph spaces of the cornea only appear without cells, because the cells forming them have passed into a condition of slumber and cannot be made visible by staining. Only a relatively small part of the corneal cells persist in the cellular condition. There are three sorts of these cells in the cornea which can again appear: First, cells which lie in the spaces and form part of the process of the fixed cells. Secondly, the cells which form the walls of the lymph spaces, and consequently lie on the fibres. Thirdly, the cells which have undergone a direct transformation into the fibres. In the course of inflammation those cells first awaken which lie inside of the lymph spaces, and when the process lasts long enough the fibres themselves pass into cells.

Dr. Heideman[7] has an article on the origin and the significance of the small-cell infiltration in carcinoma. The author regards the small-cell infiltration between the masses of cells which form the alveoli of the carcinoma, and which is so conspicuous a part of the carcinoma, as due to the awakening of the connective-tissue cells. He thinks that this may play quite a part in favoring the advance of the carcinoma. Newly-formed lymph spaces appear in this tissue surrounding the masses of carcinoma cells, and with the formation of lymph spaces, a way is given for the extension of the carcinoma. He regards this as playing a very essential part, and believes that the carcinoma will not extend into the tissues which have not undergone this change, thereby weakening their resistance.

The last article in the series is by Kickhefel[8] on the histology and the metamorphosis of the mucous tissues. There are two ideas about the formation of the mucous tissues: One is that of Virchow, who regards the mucus in the tissues as a substance derived from the secretion of the cells, believing that it is in this way analogous to the formation of the fatty tissue. Köster believes that the mucous tissue simply represents œdematous tissue. There is no more mucin in this tissue than in the ordinary connective-tissues, but the mucin is swollen by the infiltration of the mucous tissue, both in the embryonic state and in the adult. Kickhefel finds that it can arise in a number of ways, that it is partly derived from a direct transformation of the cells into this tissue and also by a change of the fibrillæ of the connective-tissue itself. It can all undergo a mucoid metamorphosis. In the process of the mucoid metamorphosis of the tissue the slumbering cells first awaken, the cells which ordinarily formed the walls of the nutritive canal appear, the nutritive canals are again formed in the tissue, and with the increased amount of nutritive plasma in the tissue the cells may again appear.

(The grounds which Grawitz adduces in support of his theory does not appear to us to be sufficient. There is no doubt but that the question as to the new formation of cells in inflammation, especially the small-cell infiltration, is not sufficiently cleared up, but it is probable that they arise from the old cells of the part, especially from the walls of the blood-vessels. When this cell-formation is taking place, we see numerous nuclear figures indicating cell division in these tissues; but it must be said that their number is not sufficient to show that all of the cells are formed in this way. It is probable that many may arise from a direct division of the nuclei. We cannot help thinking that there is something very fanciful in this idea of Grawitz, and that it took a rather active imagination to conceive of it. It is true that the process is not altogether wanting in analogy, but the analogy comes from the realms of fable, and not from pathology and embryology. The analogy to which we refer is seen in the beautiful story of the prince and the sleeping beauty. The tissues may be compared to the palace in which all slept; and the mysterious irritant which comes into the tissue and restores activity to all of the quiescent cells, might be compared to the kiss of Prince Charming which fell on the maiden's cheek. Under the influence of this the beauty awoke, the cock crew and the cook let fall the suspended blow on the scullion's ear; and although the fable does not tell us so, it is perfectly justifiable to infer that the awakened beauty proceeded at once to increase and multiply, just as do the newly-awakened cells.)

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[6] Dr. Alfred Kruse: Ueber Entwickelung, Bau und pathologische Veränderungen des Hornhautgewebes, Virch. Arch., Bd. [illegible]

[7] Dr. Heideman: Ueber Entstehung und Bedeutung der Kleinzelligen Infiltration der Carcinome, Virch. Arch., Bd. [illegible]

[8] Dr. G. Kickhefel: Zur Histologie, [illegible] und Stellung der schleimigen oder gallertigen Gewebe des Menschen, Virch. Arch., Bd. 129.

In the twelfth volume of his *Beitrage*, Zeigler gives a valuable review on inflammation. He speaks of the difficulties which are met with in attempting to define inflammation. The difficulty of the definition is that the term embraces not a single phenomena, but a sum of pathological processes. He then takes up the essential phenomena of inflammation and the various ideas which have been held with reference to them. An attempt to give a precise definition of the nature of inflammation must always take into consideration the entire process which the clinician designates as inflammation, and not single pathological phenomena. Metschnikoff, in studying the relation of the tissue towards foreign irritants, regards the collection of phagocytes or leucocytes around the irritating body as the essential moment. In many cases of inflammation this process of phagocytosis which he regards as characteristic of inflammation does not take place, while on the other hand, extensive phagocytysis is seen in processes which should not be classed with inflammation. There are two phenomena which are always present in inflammation, the local degenerative disturbances of nutrition and pathological exudation from the blood-vessels. The injuries which excite inflammation first affect the tissues, but they can also have an immediate action on the walls of the vessels. This latter takes place when the injurious material is contained in the blood and from there comes in contact with the walls of the vessels. All injuries which are followed by the clinical phenomena of inflammation produce a local degeneration of the tissue, and the disturbances of the circulation are in some way connected with the degeneration. Not all local disturbances of the circulation can be considered as inflammation, but only those in which there is at some time a pathological exudation of the constituents of the blood. The essential disturbance of the circulation which we meet with in inflammation is characterized by a slow blood-current in widened arteries, and by the exudation at the same time of a fluid relatively rich in albumin and colorless blood-corpuscles, sometimes also containing red blood-corpuscles.

In the formation of the pathological exudation there are three different processes which may be separated from one another. The exit of the colorless blood-corpuscles, of the fluid, and the red blood-corpuscles. The author then takes up the various views as to the cause of the emigration of the colorless blood-corpuscles and the manner in which this takes place. Most of the authors at the present day regard an alteration of the walls of the vessels as a necessary prerequisite to the emigration of the leucocytes, but it is not possible to define exactly what sort of alteration of the vessels takes place. Whether nerve influence plays a rôle in the exudation it is impossible to decide. It is possible to imagine that the capillary secretion is influenced by the nerves, but still nothing is known of the presence of such nerves and there are no pathological processes which can explain the phenomena of exudation by nerve influence. The alterations of the tissue are in the first place degenerative, and only degenerative processes belong to inflammation. It is perfectly well known that multiplication of the tissue cells always takes place in inflammation, but this is not a necessary and essential part of the process. Most of the tissue changes in inflammation are to be regarded as degenerations which are brought about by the cause of inflammation or by the disturbances of the tissue produced by the inflammation, so that the growth of the tissue is only an accompanying phenomena which is not necessary to inflammation and can be entirely wanting. The first appearance of the growth of the tissue takes place, at the earliest, eight hours after the action of the inflammatory cause, but in most cases much later, as in two or three days. In severe inflammations a large portion of the new cells of the tissue are destroyed. The exudation coming from the vessels in the first place is accumulated in the spaces of the tissue and in the lymph vessels or on the surface of an inflamed tissue and organs, but it must be added that a part of the exudation is also contained in the tissue itself, that is, in the cells. The older theories of inflammation only concern themselves with the free exudation. Virchow was the first to show that the exudation could be contained in the tissue itself, and the importance of this. Of late, the idea that the inflammation has a purposeful character, having for its object the removal of the conditions which were exerting an injurious influence on the tissues comes more and more to the front. Thus Leber says, that, in consequence of the action of external injuries, certain vital phenomena of the organisms are aroused, which serve to take away the injurious influences or their effects, just as the absence of oxygen by excitation of the respiratory centre causes increased respiration. This idea is not a new one, however; it is found in many of the older theories of inflammation, and Virchow in his first publication on inflammation expresses a similar view. The primary action of all inflammatory causes is seen, in the first place, in the production of a solution of continuity or a defect. Even electricity can only excite inflammation when it destroys tissue; and heat and cold also can only excite inflammation by producing a necrosis of tissue. At the present time all are earnestly seeking some means of opposing the action of the infectious bacteria, and many assume that inflammation is one of the most valuable means for the removal of a local infectious focus. Most investigators consider that the favorable action of inflammation consists in the accumulation of cells, which by phagocytosis, and in other ways, destroy the injurious organisms. Others lay more stress on the fluid exudation, which washes out the bacteria from the tissue and sends them to the surface, or renders them inactive and destroys them.

A New Confidence Game. — As a stranger stepped from a train at a railway station in Paris during the recent cholera period, a man came up to him saying that he was a sanitary agent and asked if he had been disinfected. Being told that he had not, this agent led him to a neighboring house, put him in a room by himself, told him to take off his clothes, which were taken away to be disinfected. After waiting for some time the stranger finally investigated and found that he had been made the victim of a new confidence trick.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A stated meeting was held at the Medical Library, Boston, on Wednesday, February 1, 1893.

The meeting was called to order at eleven A. M., by the President, Dr. James C. White. One hundred and four Councillors indicated their presence by signing the roll.

APPOINTMENT OF DELEGATES AND COMMITTEES.

On nomination by the Chair the following delegates to other State Medical Societies were appointed:

Maine: Drs. E. W. Cushing, of Boston; F. W. Anthony, of Bradford.

New Hampshire: Drs. E. B. Harvey, of Westboro'; C. P. Morrill, of North Andover; T. H. Gage, of Worcester.

Rhode Island: Drs. J. L. Hildreth, of Cambridge; W. N. Swift, of New Bedford.

Connecticut: Drs. J. A. Gordon, of Quincy; F. W. Chapin, of Springfield.

New Jersey: Drs. L. R. Stone, of Newton; L. F. Woodward, of Worcester.

Committees were appointed:

To Audit the Treasurer's Accounts: Drs. E. P. Gerry, H. L. Burrell.

To Examine the By Laws of District Societies: Drs. S. D. Presbrey, F. W. Chapin, H. J. Barnes.

To fill the Vacancy in the Committee on Medical Diplomas: Dr. E. N. Whittier.

The Committee on Publications reported, recommending the following, which was adopted:

> That the Triennial Catalogue to be issued this year shall contain the names of all past and present members of the Society, so far as known.

The Committee appointed in February, 1892, to report on what changes, if any, may be necessary or expedient to secure uniform examination of candidates for Fellowship, reported through Dr. Burrell, as follows:

> Your Committee have carefully considered many plans for the establishment of a uniform examination of candidates for admission to this Society. The present status for admission is somewhat as follows: Different standards are established by eighteen different Boards of Censors, not acting in concert, and having only in common the welfare of the Society. The objections to this plan are the following:
>
> (1) That in certain Districts a comparatively severe examination is held for admission to the Society; that in other Districts a comparatively easy examination is held.
>
> (2) That the Boards of Censors, as a rule, are composed of young men but a few years out from the Medical School, who are naturally sharper critics than the older Fellows of the Society.
>
> (3) That at present the Boards of Censors know very little of the requirements for admission into other State Societies.
>
> (4) That there are many excellent regular practitioners scattered throughout the State, and that their number of late has been increasing, who are not members of the Society. This is owing to neglect on their part to present themselves for admission to the Society, and this neglect is due to their wishing to avoid the rigor of an examination conducted by young men; in many instances by rival practitioners.
>
> We believe that it will be for the interest of the Society to establish a uniform standard of examinations throughout the Commonwealth, and further that such examinations shall be elastic at the discretion of the Censors, in order that practitioners of established reputation shall not be hindered from entering the Society.
>
> This, we think, can be accomplished by what may be considered by many to be a radical change in the methods already pursued. The proposed change will consist in establishing a Board of eighteen Censors, one Censor to be elected annually by each District Society; six of whom shall meet in the eastern, six in the western, and six in the central part of the State. They shall hold an annual meeting, and shall convene at such times and places as shall be decided by the Council. Applications to the Board of Censors must be sent in at least ten days before examination to the Secretary of the Section of the Board by which the meeting is to be held, and it shall be his duty to investigate the personal character of the applicants.
>
> Such a plan will establish a Board of Censors on which it will be an honor to serve. Your Committee would recommend that no Fellow be eligible to be elected a Censor until he has been five years a member of the Society. The advantages of this plan are manifest to the Committee. The State Society will then have a uniform standard for entrance; and its doors will be guarded by judicious men, with full powers to waive the examination, if considered expedient, in particular cases.
>
> In order to accomplish this object your Committee respectfully suggest the following changes in the By-Laws:
>
> (1) By-Law I to be changed by striking out part of line 21, on page 9, and lines 22 to 26 inclusive, and substituting the following words, so that the By-Law shall read, "and, by such further examination as the Censors shall deem expedient." And also by striking out the word "three" in line 1, on page 10, and substituting the word "four," so that this clause shall read, "to the satisfaction of at least four of the Censors present."
>
> (2) By-Law II to be changed by the omission of the words "Society of the District," in line 11, and substituting the words "Board of Censors of the section," so that this clause shall read, "Application for examination or re-examination must be made to the Secretary of the Board of Censors of the section in which the candidate resides."
>
> (3) By-Law XIII to be changed by erasing the words "five Censors," and substituting the words "one Censor," and by erasing the words "in that District," so that this clause shall read, "and at the same time one Censor for the examination of candidates."
>
> (4) By-Law XIX to be changed by inserting after the word Librarian the words "and three Secretaries for the Board of Censors," that this By-Law shall read, "at their annual meeting the Councillors shall choose by ballot the following officers of the Society: viz., a President, Vice-President, Corresponding Secretary, Recording Secretary, Treasurer, Librarian, and three Secretaries for the Board of Censors."
>
> (5) By-Law XX to be changed by striking out in line 8 the words "hereinafter designated, or," so that this line shall read, "The Censors shall meet at such times and places as the Councillors may direct;" also by erasing the lines 10 to 24 inclusive. By-Law XX to be further changed by erasing the words "for each District," in line 29, and the words "the Recording Secretary of the District," in line 30, and inserting the words "the Secretaries of the Board of Censors," so that this clause shall read, "The Board of Censors, including the Secretaries of the Board of Censors, shall receive," etc.
>
> (6) By-Law XXI to be changed by erasing the word "three," and substituting the word "four," so that this By-Law shall read, "Four Censors shall constitute," etc.
>
> (7) By-Law XXII to be changed by erasing line 5, and substituting the words "Three Secretaries, one for each section of the Board of Censors, shall be elected annually from the District Secretaries by the Councillors," and also by omitting in line 10 the words "in the record book of the District Society," and substituting the words "in a

book provided for that purpose," so that this clause shall read, "He shall keep a faithful record of the meetings and transactions of the Board in a book provided for that purpose."

(8) The Boards of Censors shall meet for the examination of candidates, and also for the purpose of ensuring uniform methods of examination, at such times and places as the Councillors may direct.

(9) All By-Laws or parts of By-Laws which are in conflict with the foregoing are hereby repealed.

Thos. M. Durell,
George C. McClean,
John H. McCollom,
Herbert L. Burrell.

After discussion, it was voted that the report be laid on the table, put in print and sent to all members of the Council.

The Committee to whom was referred the subject of the passage of a resolution in favor of a bill for the creation of a Cabinet Officer of Public Health, reported through Dr. Walcott:

We believe that the need of some properly constituted national public health authority is generally admitted by the medical profession.

A National Board of Health was created in 1879. The statute establishing the Board has never been repealed, but no appropriations of money have been made in recent years for the use of the Board, and it has practically ceased to exist.

For several years the work of that Board was of a useful and distinguished character, but it had not sufficient political power to protect itself against the intrigues of other authorities at Washington and elsewhere.

Various plans have been suggested for the creation of a national sanitary authority.

(1) A National Board of Health, constituted by delegates from the State Boards of Health. Such an organization would possess evidently a very strong influence even at Washington, and its control over such subjects as quarantine would be unquestioned.

(2) A Bureau of Health — attached to some existing department — that of the Interior.

(3) A Cabinet Officer of Health.

It is not apparent to your Committee that a position in the Cabinet would increase the efficiency of a public health officer. In fact, it seems to them a decided disadvantage that this officer should be subject to any political test.

We therefore recommend the passage of the following resolution:

That the Congress of the United States be requested to create a national sanitary authority which shall be independent of the Army, the Navy, or the Marine-Hospital Service.

H. P. Walcott,
Henry Jackson,
Samuel W. Abbott.

Voted, That the report be accepted and its recommendations adopted.

Dr. Cheever, in behalf of a Committee from the Suffolk District appointed to consider the question of the desirability of further sanitary legislation, presented resolutions which were adopted.[1]

Voted, That these resolutions, together with those of the Committee on a Cabinet Health Officer, be forwarded to the appropriate authorities at Washington.

A recent press despatch announces that Mrs. Langtry's physician states that, although the lady is suffering from a relapse of her malady, it is not to be considered as serious, being merely "perityphlitis."

CAMBRIDGE SOCIETY FOR MEDICAL IMPROVEMENT.

ALBERT H. TUTTLE, M.D., SECRETARY.

Regular meeting, Cambridge Society for Medical Improvement, Monday evening, January 23, 1893, the President, Dr. H. O. Marcy, in the chair.

Dr. Wm. H. Baker, of Boston, read a paper on

MODERN TREATMENT OF RETROVERSIONS OF THE UTERUS COMPLICATED WITH ADHESIONS.

Following the great advance made in abdominal surgery, the treatment of retroversions of the uterus has recently become greatly modified. When the writer first employed packing the vagina with cotton to stretch adhesions, he supposed that he was the originator of that method; but, as shown by Dr. J. W. Elliot, a physician in Georgia had been practising the method long before him.

In the treatment of this displacement of the uterus, an accurate diagnosis to determine the exact condition of the peritoneum, adhesions, and sensitiveness of the organ, is essential for success. It is presupposed that there has been an inflammation, giving out an exudate which has later become organized and converted into adhesions between the opposing surfaces of the peritoneum covering the uterus and surrounding organs and parts. In a recent condition, this adhesion is easily overcome, but an attempt to restore the uterus to its normal position is attended with great risk from hæmorrhage by rupture of vessels in the newly-formed tissue, which at first is very vascular. At a later period, the adhesions are less, and in fact, very little vascular and not so sensitive; but they are much firmer and are overcome with considerable difficulty. The movements of the uterus drag on and stretch the plastic exudate, converting it into various degrees of thickness and strength, from a delicate, spider-web-like mesh, to a cord-like structure of great strength. After the adhesions have become completely organized, danger in overcoming them arises from the injury to the attached organs. The adhesions are a result of a peritonitis, which in the majority of cases, is due to septic infection transmitted through the Fallopian tubes. In a small percentage of cases, it may arise, in young girls, from imprudence or neglect at the time of the menstrual period.

The extend and character of the adhesions can only be determined by an attempt to replace the uterus. These adhesions are shown by modern abdominal surgery to be less frequent then was formerly supposed. An attempt to replace this organ is contra-indicated when there is any evidence of active inflammation of the tubes or ovaries, an elevation of temperature, or irritation of the peritoneum. Under these circumstances the uterus is very sensitive.

In the absence of the above contra-indications, an attempt should be made to replace the uterus by the finger, with the patient in Sims, or the knee-chest position, so as to take advantage of the weight of the uterus and the pressure of the atmosphere in the vagina. If the vagina is long, and the uterus catches on the promontory, a tenaculum should be hooked into the cervix, and the uterus drawn down on a full inspiration, carrying the neck backwards into the hollow of the sacrum, at the same time lifting the cervix with the instrument on a forced expiration: by such means the organ will drop into its normal position, if the adhesions are not great. In case this does not succeed, gentle pressure can be exerted with the forefinger, sufficient to overcome slight adhesions. If these means do not succeed, and it becomes necessary to use an instrument as a repositor, a sound should not be used, but a Jennison's flexible probe is recommended because the spring in it is insufficiently strong to tear away any great adhesions, and therefore it cannot do much harm, and is safe.

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[1] See Journal of February 9, 1893, p. 149.

If now one is unable to replace the uterus, the adhesions are considerable, and must be overcome by some other means. There are then four methods of treatment:

(1) Schultze's. The patient is etherized, and the fundus of the uterus carried somewhat forcibly upwards by means of one or two fingers inserted into the rectum; the cervix being forced backward simultaneously by the thumb in the vagina, and with the other hand, the fundus is held up against the abdominal wall and worked forward, if possible, a little anterior of its normal position. A Thomas modification of the Albert Smith pessary with a large bulb at the top (constructed of soft rubber) is then inserted, the patient put to bed and kept there a week, attended as carefully as if she had undergone a serious operation.

(2) The method of packing the vagina may be resorted to, and is attended with good results, but requires a long time and great patience. The packing should not be maintained constantly for too great a period, but intermitted for a few days as often as once a month at some time other then the menstrual period, and the vagina douched with an astringent during this time, to help the parts regain their normal tone. Electricity can be employed with great advantage in restoring the relaxed condition of the vagina.

(3) The treatment by internal massage, using the left forefinger for the left side, and the right for the opposite side, may be of use in some patients; it should be employed for two to five minutes at the beginning, and later for eight to ten minutes. Counter-pressure should be exerted over the abdomen. It is to be remembered that this treatment may cause sexual excitement, and on this account is to be used with great caution.

(4) When it is necessary that treatment shall be done rapidly, and in severe intractable cases or in such as prove intolerant of vaginal supports, abdominal section must be resorted to. The abdomen is opened, the patient placed in the Trendelenberg posture, the adhesions brought into view and severed, the uterus drawn down and forward into an exaggerated position and fastened to the abdominal wall by passing a silk ligature through the broad ligament close to the uterus and including a part of the round ligament, and bringing it up through the peritoneum and transversalis fascia about an inch from the median line. The old adhesions seldom give any troublesome hæmorrhage when severed or require tying. The uterus should be scarified on its anterior surface to facilitate the formation of plastic adhesions. In no instance in his experience has the uterus loosened since this method was adopted. In one instance where the abdomen was reopened two years after the operation, the uterus was found just as it was left. The adhesions stretch somewhat with time, and allow the uterus to drop a little nearer its normal position, but never to fully regain it. There should not be over three per cent. of failures from all sources.

Alexander's operation cannot be considered in the treatment of these cases, unless the adhesions are first overcome.

Dr. Nichols thought Schultze's method a very nice one, and had used it to good advantage many times. Abdominal operations could not be considered by the average practitioner in the treatment of these cases.

Dr. Jones thought the danger of hemorrhage from recent adhesions should be reinforced upon the mind of the physician, since a hematocele can easily be produced when one little knows what he is doing. He was opposed to the treatment by massage. Adhesions were not so common as he formerly supposed. Recently, while removing the ovaries from a woman in the Trendelenberg posture the patient was lowered to the horizontal position to facilitate flushing the abdomen with hot water, when syncope immediately supervened. The abdomen was flushed without improvement, and it was only after restoring the patient to the Trendelenberg position that she regained the normal action of the lungs and heart. Hanks lost two cases from this cause which he attributed to flushing, and in a third case saved his patient's life by restoring her to the original position.

Dr. Stevens frequently employs packing the vagina and finds many cases of retroversions are thereby benefited. He considers this the best line of treatment for the general practitioner.

Dr. Palmer asked what became of the uterus if later pregnancy occurs.

Dr. Crocker has used tampons in conjunction with electricity. He finds the galvanic current of considerable value in dissolving adhesions.

Dr. Driver: We should not lose sight of any of the methods of treatment, and they should all be exhausted before the patient is exposed to the dangers of a surgical operation. The patient's life should not be risked until all other means of treatment, non-surgical fails. We should not be tempted to do a brilliant operation which has a mortality of even three per cent.

Dr. Marcy, in using the Schultze method, often inserted his whole hand into the rectum. This is an advantage if the hand is small. The value of a correct diagnosis cannot be overestimated, yet it was attended with great difficulty and required much experience. Blunders had often been made after the abdomen was opened. He had learned much during the past two years in the recognition of pelvic diseases. Clearness of the field of operation was essential for success, and "blind surgery was bad surgery." A great deal of harm can be done by a minor operation. He thought the bilateral operation of fixation of the uterus, as recommended by Dr. Baker, the best, because it brought the uterus nearer its normal position than the central operation, and was more like shortening of the round ligaments, and normal provision of nature.

Dr. Baker, in closing the discussion, said that the treatment of retroversions and retroflexions was the same, and that either condition did not exist simply, but was complicated by the other. He had found trouble at times in placing the patient into Trendelenberg's posture, and recommended that the change from one position to the other be made slowly. The operation selected should always be the one attended with least risk of life, and it was only in the most intractable cases that abdominal section was to be recommended. In case pregnancy supervened, there would be less tendency to abort with the anterior fixation than if the uterus was retroverted. He found galvanism, using a weak current of thirty to fifty milliampères, of great value in promoting absorption and diminishing the pain and sensibility in the parts.

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Recent Literature.

Human Embryology. By Charles Sedgwick Minot, Professor of Histology and Human Embryology, Harvard Medical School. Four hundred and sixty-three illustrations. New York: William Wood & Co. 1892.

This solid volume of some eight hundred pages is a great work in more than size. It contains the results of many years' labor by one of great powers of observation, perfectly familiar with all technical methods, and accomplished in their use, of wide reading, and of indomitable perseverance. All these qualities are shown in this book, which at once claims a place by itself in English literature. The general plan of the work is as follows: The author begins with an introduction in which the histology of the mucous membrane of the uterus is discussed, followed by an account of the decidua which is cast off in menstruation, or which in pregnancy is preserved to undergo a remarkable series of changes. This is followed by a short chapter on the general outline of human development, after which the essential part begins. The first part treats of the genoblasts, and of the theory of sex. The following lines on the former furnish a good example of the author's originality and independent method. Though, as we have said, of wide reading, he is far from showing it by a docile following of others. "The term genoblast is used to designate the sexual elements. I apply it exclusively to sexual elements proper, and not to the accessory parts with which those elements are associated. The spermatozoon is a genoblast; a spermatophore is not. The egg-cell after maturation is a genoblast, but not before." We may here mention a peculiarity in style which at first is a little strange. When introducing a new statement the author speaks in the first person; when dealing with those previously published he refers to himself as Minot. The pages on sexuality, heredity, etc., are extremely interesting. We must observe, however, that this discussing and advancing of theories materially enlarges the book. We are not sure that this aspect of the subject should be treated in a book of this kind, which might perhaps better have been limited to recording observations, leaving theories and views for discussion elsewhere.

After this, several chapters are devoted to the germlayers, with a section on the history of the theory. Then comes the account, in six chapters, of the early development of the embryo. Part IV treats of the fœtal appendages, and finally Part V, or about half the book, is devoted to the fœtus. The illustrations which are very numerous, are in a great measure original, and deserve great praise. The diagrams are clear and the cuts of microscopic sections of tissues are excellent. Many seem to us to be practically just as good as the original sections. Although treating of human embryology the book contains a great deal from observations on animals. This, of course, was inevitable, and perhaps not to be regretted.

As the reader will perceive, we have confined ourselves in this notice to an attempt to give an idea of the nature and scope of this work. It can hardly be called a text-book; it is rather a treatise, which at times is almost encyclopædic. At the end of the book, just before the index, a bibliography of thirteen closely-printed pages contains abbreviated titles of only the articles actually referred to in the work, but the author publishes in the Memoirs of the Boston Society of Natural History, a full bibliography of over three thousand titles of vertebrate embryology.

T. D.

Syphilis and the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S. Small octavo, pp. 131. P. Blakiston, Son & Co. Philadelphia: 1892.

It is fortunate that the Lettsomian lectures of 1890 are at last placed before the profession in this convenient form. The name of the lecturer and the importance of the subject might well justify their republication, but the value of the lectures themselves should commend them to every practitioner. They are, however, not so much a presentation of the facts relating to syphilis of the nervous system as a consideration of the methods by which the subject should be studied. The first lecture not only presents a brief review of the pathology of nervous syphilis, but it points out the lines to be followed in the future investigations as to the syphilitic nature of certain phenomena of doubtful origin, where the direct evidence from autopsies is often lacking. Here we must obtain evidence not only from treatment, but also from the sequence; a series of cases is needed to show in what percentage a clear history of syphilis precedes the conditions in question. So, too, in the lecture on diagnosis, a careful presentation of the methods of diagnosis is given, rather than an elaborate array of symptoms. Syphilis he holds to be an incurable disease. The effects are largely under control, but "no treatment, however thorough, will bring syphilis, as a disease, to an end, so that the patient does not suffer again from any of its direct effects." Iodide he believes to have a powerful influence apart from mercury, but he does not favor giving it more than eight or ten weeks at a time. If continued for many months, he thinks that there is danger that the patient may become so accustomed to it that it will lose its effect. Written with all the author's well-known clearness, the little volume should be carefully studied by every physician.

Practical Pathology. By G. Sims Woodhead. Edinburgh and London: Young J. Pentland. Philadelphia: J. B. Lippincott Co.

The best part of this book is to be found in the plates. These are admirable, and reproduce more closely the exact appearance which is seen under the microscope, than any which have ever appeared in a work on pathological histology. They were evidently most of them drawn with the camera lucida, and by one familiar with the pathological processes. The general make-up of the book, the paper and the printing are most admirable. There are many excellent chapters in the book, and it is one to be recommended.

Governor Flower of New York, during the cholera excitement, furnished the money to buy Fire Island, trusting to the State to reimburse him. He has recently sent in his bill with interest added at six per cent., which the representatives at Albany immediately reduced to five per cent.

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THE ANNUAL REPORT OF HARVARD COLLEGE.

The annual report of Harvard College is really the sum total of the reports of all the departments which go to make up the University. As far as the title is concerned we have an instance of a part containing the whole. The President submits his report as the President of the "University"; the Treasurer submits his report, which is equally concerned with all other departments as well as the academic, as the Treasurer of the "College." This want of uniformity and of definiteness is perhaps characteristic of a certain vagueness as to whether Harvard is a college or a university, perhaps of a still-continued transition state between the old and the new. However that may be, we find as usual between the covers of the report of "Harvard College" the report of the deans of the Medical School, of the Veterinary School and of the Dental School, and comments upon the condition of those schools in the report of the President of the "University," as well as a statement of their finances in the report of the Treasurer of the "College." It is with the reports of these schools that we are especially concerned.

The principal change in the Medical School of Harvard University was the establishment and elaboration of the details of the four-years' course, which is now in actual operation since the commencement of the October term. The University of Michigan has a four-years' course in its medical department, Harvard has a four-years' course, the University of Pennsylvania is getting ready to have one; and we hope another year to add other names to the list. There has been no falling off in the number of students in consequence of this change.

The departments of pathology, physiology, histology and bacteriology have been enlarged in their scope and strengthened in their teaching force. In anticipation of the comment that these additions are all to the scientific side of medical instruction, the President emphasizes the view that those are the sciences on which all real improvements in medicine must be founded; and that the imparting to the medical student of the true scientific spirit in research is the most important service to be rendered to him during his education. "The medical student who becomes thoroughly imbued with the modern scientific spirit through the careful pursuit of experimental sciences will be sure to make, both in the medical school and in after life, a productive use of his clinical opportunities. The student who does not catch that spirit had better never have studied medicine."

The Dean calls attention in his report to the diminution in the proportion of college-bred men who have entered the school since the year 1884, in which year the maximum of 53.9 per cent. was reached. Since that year there has been a steady diminution in this proportion, until in 1892 the ratio was only 28.2 per cent., a ratio which with one exception is less than any year since 1872. This diminution is true of graduates of colleges and scientific schools generally, as well as of the holders of the Harvard A.B. degree. Dr. Bowditch in commenting on these figures, says:

> The cause of this relative diminution in the number of what must be regarded as the most desirable class of our students is doubtless a complicated one, but among the influences that have contributed to this result it is fair to assume that the increasing demands of our colleges upon the time of the undergraduates, and a growing conviction of the importance of beginning professional studies at an earlier age than that at which most students obtain the degree of A.B., have played an important part. This view derives confirmation from the fact that there is a large and apparently an increasing number of students in every entering class who have received a certain amount of collegiate education, but have left their colleges without taking a degree.
>
> There are, of course, many reasons which induce students to leave college without taking a degree and it is very unsafe to draw general conclusions from the variations in the total number, but the fact that this class of students has increased in such a striking manner during the past three years, taken in connection with the recent great falling off in the number of college graduates in our entering classes, certainly suggests the possibility that there is a growing class of students who have reached the conviction that the degree of A.B. may be too dearly purchased if it involves so much delay in entering upon a chosen profession. If this is the case it may be hoped that the wants of this class of students may be to some extent supplied, as far as Harvard University is concerned, by the course in Anatomy, Physiology and Physical Training, recently established in the Lawrence Scientific School, but it would perhaps be well for those who are responsible for our methods of university education to consider whether, in the effort to raise the standard of college education, the academic curriculum has not lost a good deal of its value as a preparation for a professional career, and whether it may not be desirable in the interests of a broad, liberal education, to shorten the period of academic training to meet the wants of the professional schools, and to provide by a greater development of the graduate department for the highest kind of liberal training in as many different directions as possible. The A.B. degree would then become the mark, not of a liberally educated man, but of one who has taken the first step in the direction of liberal training, the second step being the acquirement either of a professional degree, or of that of A.M., Ph.D., or such other degree as may be adopted to indicate the completion of a course of liberal study in the graduate department.

An inquiry into the way in which the proportion of college-bred men has varied in the College of Physicians and Surgeons of New York (Columbia), the only large school in the country for which data are at hand for making a comparison of this sort with the Harvard school, shows that between the years 1872 and 1887 the number of students having a collegiate education varied from 16.5 to 24.6 per cent. of the whole number of students, but that during the last four years the ratio has been much larger, rising in 1891 to 34.7 per cent. The fact that the ratio of college-bred men has been rising in the New York school while it has been falling at Harvard might suggest the conclusion that this class of students finds superior attractions in the former institution. There are, however, Dr. Bowditch states, circumstances connected with the recent history of the New York school, which serve to explain much of the recent rise in the percentage of college graduates. The year 1888 was the first year in which an entrance examination was required. This reduced the total number of matriculants from 809 to 701, but did not affect the college-bred men; hence the percentage rose. 1890 was the first year in which the State of New York took charge of the entrance examination, applying it to all schools alike. The total matriculants again fell from 619 to 534, causing as before, a relative increase in the college men. The increased percentage of the last two years is, however, associated with an increased and not a diminished number of students, and is therefore a source of gratification.

President Eliot suggests as one reason why the experience of the Medical School of Columbia has been the opposite, in this respect, of the Medical School of Harvard, is that the average age at which the degree of A.B. is taken at Columbia College is decidedly lower than the corresponding average age at Harvard College.

Whatever the explanation of these fluctuations in the proportion of students entering the medical schools of the country with college diplomas, the facts are worthy the attention of all interested in medical education or in methods of university education in general.

Dr. J. S. Billings, in a recent article on "Medicine as a Career,"[1] arranges the preparatory years of one who would fit himself for the medical life, as follows:

> My young friend whose attention I wish to direct to medicine as a career will have spent five years at a good intermediate school as a preliminary to entering the university, which he does when he is about seventeen years old. He spent three or four years at the university, four years at the medical school, one and one half years in the hospital, and two years in travel and special studies. When, therefore, he is ready to begin work he will be about twenty-eight years old, and his education, living, books, etc., will have cost about eight thousand dollars from the time he entered the university. It can be done for less, but this is a fair average estimate.

If this imaginary young friend went to Harvard, he would be more nearly nineteen than seventeen on entering the undergraduate department; he would be about twenty-three on entering the Medical School with an A.B. degree; he would be twenty-seven when he secured his M.D. degree; and if he spent eighteen months in a hospital and two years in travel and special studies, he would be fully thirty years of age when ready to begin the practice of an arduous profession, the first years of which are apt to be years of patient drudgery. For turning such years to profitable account, the hopefulness, the enthusiasm, the elasticity of youth are most essential. But at the age of thirty, for most men, the sun is already high above the horizon, the dew is off the grass, and the first freshness has gone from the morning air.

Dr. Billings's programme is a little too elaborate for the average medical aspirant, for whom it is hardly meant; but if this is true, in a still greater degree is it true that the double Harvard degrees (A.B. and M.D.) with their present requirements, are luxuries suited for a small number of exceptionally placed men.

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THE RELATIONSHIP OF NEURASTHENIA TO DYSPEPSIA.

The relationship of neurasthenia to dyspepsia has been expressed from several different standpoints. Neurasthenia has been regarded by some as always of gastropathic origin, while by others dyspepsia has been defined and treated as a manifestation of neurasthenia.

Abundant facts can be cited to support either of these extreme views; the latter is doubtless finding favor with most pathologists of the present day.

Among the theories which have been proposed by authorities ancient and modern, to subordinate neurasthenia to dyspepsia, none has appeared so reasonable and been so generally accepted, as that of auto-intoxication taught by Bouchard. The dyspepsia comes first, poisons the blood and the nerve-centres by the vitiated products of digestion, and the neurasthenic manifestations follow. Mathieu,[1] in his recent fine treatise shows that the germ of this theory is found in Galen, and the humoral doctrine of atrabile. The organs of the hypochondrium, disordered in their function, fabricate an *atrabile* which is taken up by the blood and distributed to the economy, making its noxious presence especially felt by the brain and nervous system.

According to Bouchard, the primordial lesion is the dilatation of the stomach, which in a greater or less degree, he says, exists in all neurasthenics. This gastrectasy is the consequence of a congenital, often hereditary, weakness of the muscular fibre of the stomach, which entails deficient peristalsis, and resulting stagnation of liquids — mucus, saliva, gastric juice, alimentary detritus — in the gastric cavity. The gastric juice being in minimum quantity, there is little to oppose fermentations in the liquid mass contained in the stomach; soluble toxic products resembling ptomaines are the result of these decompositions. Being absorbed, these toxines give rise to a sort of systemic poisoning, the symptoms of which are continually renewed with each process of maldigestion. The various manifestations of gastric suffering are accentuated; the heart is oppressed in its function; the kidneys are overcharged with the products of defective metabolism; various cutaneous diseases and constitutional diatheses may result; the nervous system gives expression to the irritation and malnutrition in vertigo, melancholic depression or inability to perform mental labor, rachialgia, and other painful manifestations.

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[1] Forum, February, 1893.

[1] La Neurasthenié, épuisement nerveux, Paris, 1893, p. 134.

Bouchard's theory doubtless has its application to a certain number of cases, but clinical experience hardly sanctions its application to all. As Mathieu remarks, it cannot be affirmed that stagnation of the gastric contents exists in all cases of atonic dyspepsia in the neuropathic, and the use of the stomach sound has proved that complete emptiness of the stomach at some period between meals is not a rare event even in the chronic dyspeptic. Nor has it been possible to show that dilatation of the stomach or a pronounced dyspeptic condition have always preceded manifestations of a neurasthenic kind. Certainly, we oftener see the nervous symptoms and the dyspeptic symptoms come into being and run their course synchronously. Mathieu refers to instances where the neurasthenic and the dyspeptic state have appeared after strong emotion, severe disappointment or other moral shock, and even after a traumatism. In the last influenza epidemic, it was not an uncommon thing to witness the simultaneous appearance in individuals of both neurasthenia and dyspepsia as the result of a severe attack of influenza.

Charcot makes this objection to the theory of intoxications of gastric origin: How does it happen that many patients who have great dilatations of the stomach with considerable stagnation — victims of cancer of the pylorus, for instance — never have the series of nervous symptoms attributed to the subjects of protopathic dilatation? How is it that they rarely, if ever, know anything about gastric vertigo, a symptom so common to neurasthenic dyspeptics? Are they not exposed to all the conditions of abnormal fermentations and the formation of "auto-poisons"? He also makes much of the argument that some neurasthenic patients have neither dyspepsia nor dilatation of the stomach, hence cannot have derived their neuropathic condition from prior gastric troubles.

Mathieu has made many careful examinations of the contents of the stomach in patients affected with gastrectasis, and he has found that absence or deficiency of hydrochloric acid is by no means a constant fact, sometimes, even, an excess of hydrochloric acid is the rule. He insists that no constant train of symptoms can be referred to dilatation of the stomach. There are patients, however, affected with gastrectasis, who do have all the symptoms which Bouchard has described as associated with this condition of the stomach. Bouveret and Devic have demonstrated the existence of toxic substances in the dilated stomach — strange, to say, however — in connection with an excess of H cl. Such toxic substances, Mathieu says, are not products of fermentation (an excess of H cl. would prevent morbid fermentations) but toxalbumins; the toxic agent being peptone in excess, mal-elaborated, perhaps.

Similar considerations have been urged in reply to the even more ancient view that neurasthenia is dependent on vitiation of general nutrition, the result of dyspepsia. "*Morborum fere omnium*," says Benedetti, "*causa est stomachi infirmitas.*" Baglivi adds: "*Dum viget stomachus vigent omnia.*" Broussais and Bean carried this notion to the extreme. The first made gastritis the cause of almost all ailments; the second referred them to dyspepsia. Neuropathic manifestations were, necessarily, from this standpoint, attributed to deranged stomachic action. Bouchard's theory, above given, only states this view more scientifically. Hayem and Winter, in their recent work on "Gastric Chemism," also favor the same way of thinking by the emphasis which they place on morbid fermentations of gastric origin in the causation of general neuropathy.

With regard to this entire conception of pathogeny, the obvious criticism would be (and it is substantially the one which Mathieu makes *àpropos* of Hayem's position) that too much importance has been assigned to the rôle of the stomach in the digestion of food. It is very probable that the most important part in the elaboration of assimilable nutrient products is performed in the small intestine, under the influence, chiefly, of the pancreatic juice.

It is a very artificial and one-sided manner of thinking, to separate the stomach from the intestine in the general conception of the digestive process, and it is easy to overlook the fact that the short-comings of the former organ are often compensated in the latter. "From the fact," says Mathieu, "that we more readily explore the stomach than the intestine, which at present is almost beyond the reach of our means of investigation, it does not follow that the general theories of nutrition and of diathetic states are henceforth to be subordinated to the researches which we are enabled to make in elucidation of the functions of the stomach by virtue of a *technique* still very rudimentary. We must not forget that these technics attack only in an indirect and partial manner the difficult problem of digestion and assimilation.

"It is certain that the vitiation of the operations of gastro-intestinal digestion must influence directly the nutrition of the organs, but we must remember that we understand very imperfectly in what this vitiation consists, and that it is not yet demonstrated that in neurasthenia and other similar states the depreciation of the gastric chemism is the primordial, pathogenic factor.

"Clinical experience, on the contrary, renders more probable this notion that in nervous dyspepsia we have to do, especially at the onset, with a simple nervo-motor disorder, without important disorder of the digestive secretions."

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

THE HARVARD DENTAL SCHOOL. — The number of students in this school during the past year has been fifty-one. A three-years' attendance is hereafter compulsory. The increase in the number of students and in the length of the course has necessitated an increase in the number of instructors. The Dean in his annual report refers again to the project of a new building in a more central situation and better adapted to the growing necessities of the school.

THE HARVARD VETERINARY SCHOOL. — The report of the Dean of this school, contained in the annual report of the President of the University, states that: The school has now been ten years in existence. It began with gifts for immediate use amounting to $2,500, and has never received any more. It began with ten students and now has forty, notwithstanding the fact that it has constantly labored under the disadvantage of fighting the battle for a long curriculum against a well-established short one. It has a three-years' course, the largest corps of instructors and the widest range of instruction of any English-speaking veterinary college. The institution of courses in pathology, helminthology, and meat inspection is recommended. It has built up a successful hospital practice which supplies its students with the necessary clinical opportunities. Finally, it has contracted a debt of $19,153.-65, about $16,000 of which represents the cost of an addition made for school purposes to the original hospital building. This original building was erected by private owners, and is only hired from year to year.

THE CHARITY CLUB HOSPITAL. — A large and well-attended fancy-dress ball was given at the Mechanics Fair Building in Boston last week, in aid of the Charity Club Hospital, which has recently built a new building on Parker Hill, Roxbury.

THE DANGER OF FIRE IN MASSACHUSETTS INSTITUTIONS. — The burning of the Insane Asylum in New Hampshire, described in last week's JOURNAL, has already called attention to the condition of similar institutions in this State. The Committee of the Legislature on Charitable Institutions, now in session, appear to bear this accident in mind. In asking for an appropriation, the trustees of the workhouse at Tewksbury appear to believe that at present it might be impossible to get the inmates of that institution out in case of fire. The Bridgewater Asylum wants an appropriation for the building of fire-proof rooms for criminals and insane paupers. The buildings there now are in good condition to provide against fire. In both these institutions great care is taken; no matches are allowed the inmates, and smoking is carefully regulated.

TYPHOID FEVER IN LAWRENCE, MASS. — At a recent meeting of the Water Board the following letter was read from Mr. H. F. Mills, of the State Board of Health: "The deaths from typhoid fever in the present month are appalling, showing that every two days that the completion of the work is deferred, means the untimely death of a citizen of Lawerence from typhoid fever. In the present month up to the 11th, when the last report was received, these deaths occurred on the second, third, fifth, seventh, ninth and eleventh days of the month. This is probably as many as have died from this disease in the same time in the whole State of Massachusetts, outside of Lowell and Lawrence, and they are directly attributable to the large number of deaths (20) which occurred in Lowell the previous six weeks. The filter can be completed and water supplied through it to the city in six weeks, and I hope the committee will have the energy and business ability to see it accomplished." The committee unanimously voted to begin work anew at once. The mayor was authorized to solicit bids for excavating and filling-in the filter.

NEW YORK.

TYPHUS FEVER. — During the past week the number of cases of typhus fever and of deaths has considerally diminished, although new cases are still reported almost every day. The Board of Health has recently been successful in securing, through its counsel, the conviction of six lodging-house keepers for allowing their places to be over-crowded.

THE GERMAN HOSPITAL. — At the annual meeting of the Board of Trustees of the German Hospital, held February 13th, it was announced that a building was about to be constructed for the use of the training school for nurses connected with the institution, at a cost of $75,000. By the will of the late Louis Wilkins $5,000 has been left to the German Hospital.

REPORT OF QUARANTINE COMMITTEE OF THE ACADEMY. — At a meeting of the Academy of Medicine held February 16th, the committee recently appointed in reference to the establishment of a national quarantine, of which Dr. T. G. Thomas was chairman, submitted its report. It was given as the opinion of the committee that the granting of quarantine powers beyond those prescribed in the Harris law by the federal government, beneficial as such a course might be, might easily become a source of danger should the cities and towns throughout the country be led to relax their vigilance as regards their individual sanitary conditions. It was declared that the prompt suppression of cholera during the past autumn in England and in the city of New York showed most clearly how little there was to fear from the occurrence of scattering cases of the disease if only the local health authorities were alert, if proper sanitary regulations were enforced, and if the water-supply was unpolluted. The committee believed that the time would come when more reliance for protection against infectious diseases would be placed upon personal cleanliness officially enforced than upon crude general measures like rigid quarantines. It was urged that it was the duty of the Academy of Medicine to ascertain whether the sanitary conditions in the city were such that the coming season could be looked forward to with the assurance that the means for coping with cholera and other infectious diseases are all that they should be. To determine whether this was so or not it was suggested that a statement be solicited from the Health Department.

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Miscellany.

NATIONAL QUARANTINE LAW.

The following is the text of the United States Quarantine Act, which has passed both Houses of Congress and received the signature of the President:

AN ACT granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any merchant ship or other vessel from any foreign port or place to enter any port of the United States except in accordance with the provisions of this act and with such rules and regulations of State and municipal health authorities as may be made in pursuance of, or consistent with, this act; and any such vessel which shall enter, or attempt to enter, a port of the United States in violation thereof shall forfeit to the United States a sum, to be awarded in the discretion of the court, not exceeding five thousand dollars, which shall be a lien upon said vessel, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

Sect. 2. That any vessel at any foreign port clearing for any port or place in the United States shall be required to obtain from the consul, vice-consul or other consular officer of the United States at the port of departure, or from the medical officer where such officer has been detailed by the President for that purpose, a bill of health in duplicate, in the form prescribed by the Secretary of the Treasury, setting forth the sanitary history and condition of said vessel, and that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary condition of the said vessel, its cargo, passengers and crew; and said consular or medical officer is required, before granting such duplicate bill of health, to be satisfied that the matters and things therein stated are true; and for his services in that behalf he shall be entitled to demand and receive such fees as shall by lawful regulation be allowed, to be accounted for as is required in other cases.

The President, in his discretion, is authorized to detail any medical officer of the Government to serve in the office of the consul at any foreign port for the purpose of furnishing information and making the inspection and giving the bills of health hereinbefore mentioned. Any vessel clearing and sailing from any such port without such bill of health, and entering any port of the United States, shall forfeit to the United States not more than five thousand dollars, the amount to be determined by the court, which shall be a lien on the same, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

Sect. 3. That the Supervising Surgeon-General of the Marine-Hospital Service shall, immediately after this act takes effect, examine the quarantine regulations of all State and municipal boards of health, and shall, under the direction of the Secretary of the Treasury, coöperate with and aid State and municipal boards of health in the execution and enforcement of the rules and regulations of such boards and in the execution and enforcement of the rules and regulations made by the Secretary of the Treasury to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, and into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia; and all rules and regulations made by the Secretary of the Treasury shall operate uniformly and in no manner discriminate against any port or place; and at such ports and places within the United States as have no quarantine regulations under State or municipal authority, where such regulations are, in the opinion of the Secretary of the Treasury, necessary to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and at such ports and places within the United States where quarantine regulations exist under the authority of the State or municipality which, in the opinion of the Secretary of the Treasury, are not sufficient to prevent the introduction of such diseases into the United States or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, the Secretary of the Treasury shall, if in his judgment it is necessary and proper, make such additional rules and regulations as are necessary to prevent the introduction of such diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and when said rules and regulations have been made they shall be promulgated by the Secretary of the Treasury and enforced by the sanitary authorities of the States and municipalities, where the State or municipal health authorities will undertake to execute and enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations the President shall execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose.

The Secretary of the Treasury shall make such rules and regulations as are necessary to be observed by vessels at the port of departure and on the voyage, where such vessels sail from any foreign port or place to any port or place in the United States, to secure the best sanitary condition of such vessel, her cargo, passengers, and crew; which shall be published and communicated to and enforced by the consular officers of the United States. None of the penalties herein imposed shall attach to any vessel or owner or officer thereof until a copy of this act, with the rules and regulations made in pursuance thereof, has been posted up in the office of the consul or other consular officer of the United States for ten days, in the port from which said vessel sailed; and the certificate of such consul or consular officer over his official signature shall be competent evidence of such posting in any court of the United States.

Sect. 4. That it shall be the duty of the Supervising Surgeon-General of the Marine-Hospital Service, under the direction of the Secretary of the Treasury, to perform all the duties in respect to quarantine and quarantine regulations which are provided for by this act, and to obtain information of the sanitary condition of foreign ports and places from which contagious and infectious diseases are or may be imported into the United States, and to this end the consular officer of the United States at such ports and places as shall be designated by the Secretary of the Treasury shall make to the Secretary of the Treasury weekly reports of the sanitary condition of the ports and places at which they are respectively stationed, according to such forms as the Secretary of the Treasury shall prescribe; and the Secretary of the Treasury shall also obtain, through all sources accessible, including State and municipal sanitary authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall prepare, publish, and transmit to collectors of customs and to State and municipal health officers and other sanitarians weekly abstracts of the consular sanitary reports and other pertinent information received by him, and shall also, as far as he may be able, by means of the voluntary coöperation of State and municipal authorities, of public associations, and private persons, procure information relating to the climatic and other conditions affecting the public health, and shall make an annual report of his operations to Congress, with such recommendations as he may deem important to the public interests.

Sect. 5. That the Secretary of the Treasury shall from time to time issue to the consular officers of the United States and to the medical officers serving at any foreign port, and otherwise make publicly known, the rules and regulations made by him, to be used and complied with by vessels in foreign ports, for securing the best sanitary condition of such vessels, their cargoes, passengers, and crew, before their departure for any port in the United States, and in the course of the voyage; and all such other rules and regulations as shall be observed in the inspection of the same on the arrival thereof at any quarantine station at the port of destination, and for the disinfection and isolation of the same, and the treatment of cargo and persons on board, so as to prevent the introduction of cholera, yellow fever, or other contagious or infectious diseases; and it shall not be lawful for any vessel to enter said port to discharge its cargo, or land its passengers, except upon a certificate of the health officer at such quarantine station certifying that said rules and regulations have in all respects been observed and complied with, as well on his part as on the part of the said vessel and its master, in respect to the same and to its cargo, passengers, and crew; and the master of every such vessel shall produce and deliver to the collector of customs at said port of entry, together with the other papers of the vessel, the said bills of health required to be obtained at the port of departure and the certificate herein required to be obtained from the health officer at the port of entry; and that the bills of health herein prescribed shall be considered as part of the ship's papers, and when duly certified to by the proper consular or other officer of the United States, over his official signature and seal, shall be accepted as evidence of the statements therein contained in any court of the United States.

Sect. 6. That on the arrival of an infected vessel at any port not provided with proper facilities for treatment of the same, the Secretary of the Treasury may remand said vessel, at its own expense, to the nearest national or other quarantine station, where accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers, and cargo; and after treatment of any infected vessel at a national quarantine station, and after certificate shall have been given by the United States quarantine officer at said station that the vessel, cargo, and passengers are each and all free from infectious disease, or danger of conveying the same, said vessel shall be admitted to entry to any port of the United States named within the certificate. But at any ports where sufficient quarantine provision has been made by State or local authorities the Secretary of the Treasury may direct vessels bound for said ports to undergo quarantine at said State or local station.

Sect. 7. That whenever it shall be shown to the satisfaction of the President that by reason of the existence of cholera or other infectious or contagious diseases in a foreign country there is serious danger of the introduction of the same into the United States, and that notwithstanding the quarantine defence this danger is so increased by the introduction of persons or property from such country that a suspension of the right to introduce the same is demanded in the interest of the public health, the President shall have power to prohibit, in whole or in part, the introduction of persons and property from such countries or places as he shall designate and for such period of time as he may deem necessary.

Sect. 8. That whenever the proper authorities of a State shall surrender to the United States the use of the buildings and disinfecting apparatus at a State quarantine station, the Secretary of the Treasury shall be authorized to receive them and to pay a reasonable compensation to the State for their use, if in his opinion they are necessary to the United States.

Sect. 9. That the act entitled "An act to prevent the introduction of infectious or contagious diseases into the United States, and to establish a national board of health," approved March third, eighteen hundred and seventy-nine, be, and the same is hereby, repealed. And the Secretary of the Treasury is directed to obtain possession of any property, furniture, books, paper, or records belonging to the United States which are not in the possession of an officer of the United States under the Treasury Department, which were formerly in the use of the National Board of Health or any officer or employee thereof.

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Correspondence.

[From our Special Correspondent.]

LONDON LETTER.

An Ideal Centenarian. — The Arch-Druid of Wales. — The British Institute of Preventive Medicine. — Voluntary Nurses for Cholera. — A Museum of Hygiene. Swearing in England. — The Presentation Fund to Sir George Buchanan.

London, January 24, 1893.

On January 8th a reception was given to pay tribute to Dr. Severin Wielobyski, on the occasion of his 100th birthday. He is of Polish birth, but a naturalized British subject, who was expelled from Poland after having fought in thirty-six battles. He lived for ten years in Nova Scotia, and for the last twenty-seven years in London. He has never used tobacco, and for more than sixty years has been a total abstainer, and until two years ago took a long walk early every morning. His only infirmity is deafness. He is a great find for the "Society for the Study of Inebriety." Miss Frances Willard made an address in which she said that the venerable doctor was a magnificent object-lesson, and his life had been a type of what women wished men to be. The Vegetarian Society appear to have come in for a share and were well represented. Dr. Wielobyski in returning thanks, said that in order to live a hundred years and more, it was necessary to know how to live. He then gave three rules. The first was not to take intoxicating drinks, which affected the brain and the nervous system, congested the liver, and caused apoplexy. The second was not to use tobacco, which was a very poisonous drug. It injured the eyes, caused blindness, and brought on cancer in the lips, and paralysis. The third was not to take much animal food, which caused many diseases, some arising from parasites and other disease in the animals eaten.

There has recently died, at Llantrissant, Dr. William Price, a member of the Royal College of Surgeons, at the age of ninety-two. His eccentricities for many years have been well-known in Wales. He called himself the Arch-Druid of Wales, and would wear a whole fox-skin on his head, light green trousers trimmed with scarlet at the bottom and scalloped, a scarlet waistcoat and a light cloak. One of his children he named Jesus Christ, and another one who died he cremated on the top of a hill. He was prosecuted in court for this latter action, but was acquitted, and apparently as an act of revenge cremated all his dead cattle in the same public place. He has left strict orders in his will that his body should be cremated on this same hill.

The British Institute of Preventive Medicine owes its origin to a meeting held on July 1, 1889, at the Mansion House, when Sir James Paget and others spoke of the good which had arisen from the work of Pasteur, in Paris. The Institute is governed by a council of thirteen, some of them being nominees of the members, the others chosen to represent biology, chemistry, medicine, veterinary and agricultural science. London has been decided upon as the best site for the Institute, and a public subscription has been started to obtain the necessary funds, which are estimated at [illegible], a large part of which has already been raised.

A month ago the Lord Mayor formally opened a museum of different appliances connected with hygiene. It is situated in Highgate and contains several rooms, with an area of [illegible] square feet, and about [illegible] exhibits, consisting of various forms of closets, apparatus for the disposal of excreta, and several models of glass houses, showing approved systems of drainage and ventilation. Permanent exhibits of this kind cannot fail to be of use from an educational point of view, and efforts will be made to establish similar ones in other places.

As an aid in combating a possible epidemic of cholera in the spring, an association is formed for the registration of voluntary nurses, who, upon joining, sign the following promise: "I hereby request that my name may be placed on the roll of volunteer nurses for cholera, and in the event and in consideration of my request being complied with, I promise to undertake the nursing of cholera patients in whatever part of the United Kingdom the Special Committee for Cholera Nursing of the Royal British Nurses' Association may decide that my services are required; and I agree to be bound by the rules of any institution, and to act under the orders of any sanitary authority, or the authorized medical officer of any sanitary authority, or any registered medical practitioner to whom I may be delegated."

The mediæval custom of kissing the bible in formal swearing in courts of law has always been retained in England, although in Scotland the more cleanly method of holding up the hand has superseded it. Parliament, some time ago, made this latter method of swearing optional, but until recently it has not been much used. Within the last few months a movement has been started, especially by medical men, to substitute the raising of the hand, and this promises to be soon the prevailing custom. A few magistrates appear not yet to have been informed of the legal validity of hand-raising, since, at a recent trial in London, a physician who objected to kissing a dirty bible on sanitary grounds, compromised with the court by opening the book and kissing the inside.

It has been decided that the Presentation Fund to Sir George Buchanan shall be used for founding a gold medal to be given every two or three years by the Royal Society for distinguished services to sanitary science. Sir George Buchanan will be asked to define the conditions under which the medal shall be given. The sum collected is about £350.

B. B.

METEOROLOGICAL RECORD,

For the week ending February 11, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.	1	5	[illegible]	[illegible]	
M....6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	[illegible]	[illegible]	O.	O.	0.15
T....7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	[illegible]	[illegible]	O.	O.	[illegible]
W....8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	W.	[illegible]	[illegible]	C.	C.	
T....9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	10	[illegible]	F.	O.	
F...10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	63	82	S.	W.	[illegible]	14	R.	O.	[illegible]
S...11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	73	70	W.	E.	[illegible]	[illegible]	O.	C.	
☞	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							1.27

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 11, 1893.

Cities.	[illegible]	[illegible]	[illegible]	[illegible]				
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New York . .	1,827,396	864	303	16.68	20.76	[illegible]	[illegible]	[illegible]
Chicago . . .	[illegible]	526	246	19.10	26.22	[illegible]		
Philadelphia .	1,092,168	445	[illegible]	[illegible]	[illegible]	[illegible]		
Brooklyn . .	[illegible]	422	[illegible]	11.28	27.35	[illegible]	[illegible]	[illegible]
St. Louis . . .	[illegible]		—	—		—		
Boston . . .	[illegible]	234	[illegible]	8.60	27.09	—	[illegible]	2.58
Baltimore . .	461,139							
Cincinnati . .	[illegible]							
Cleveland . .	[illegible]	[illegible]	[illegible]	12.21	22.20	1.11	[illegible]	1.11
Pittsburg . .	[illegible]	108	49	[illegible]	[illegible]	5.52	6.44	[illegible]
Milwaukee . .	[illegible]	[illegible]	54	11.11	16.65	1.11	[illegible]	—
Washington .	[illegible]	[illegible]	38	14.84	21.20	2.12	[illegible]	
Nashville . .	87,754			—	—	—		
Charleston . .	56,048	[illegible]	[illegible]	14.80	3.70	—		
Portland . . .	40,000	17	[illegible]		[illegible]	—		—
Worcester . .	92,313	[illegible]	[illegible]		[illegible]			
Lowell . . .	[illegible]	[illegible]	[illegible]	6.90	20.70	[illegible]	—	
Fall River . .	[illegible]	40	21				—	
Cambridge . .	74,644	16	[illegible]	[illegible]	[illegible]			[illegible]
Lynn	60,809	16		—	18.75		—	—
Springfield . .	47,052	18	[illegible]		[illegible]		5.55	
Lawrence . .	45,910				—			
New Bedford .	[illegible]	21	8	9.52	9.52	—		
Holyoke . . .	[illegible]	16	7	6.25	18.75	—	[illegible]	
Brockton . .	32,783	[illegible]	[illegible]				—	
Salem	31,495	9						
Haverhill . .	30,165	10	2	40.00	40.00			
Chelsea . . .	29,479		0			—		
Malden . . .	[illegible]		2	28.56	14.28	—		[illegible]
Newton . . .	26,498	9	3	11.11	11.11		11.11	—
Taunton . . .	26,464	14		14.28	28.56	—	[illegible]	[illegible]
Gloucester . .	26,008	11	[illegible]	—	54.54	—	—	
Fitchburg . .	25,444							
Waltham . .	[illegible]	8		[illegible]	25.00		—	12.50
Quincy . . .	[illegible]	10		20.00	[illegible]		[illegible]	[illegible]
Pittsfield . .	18,294	2	1	—	100.0			
Northampton .	[illegible]	3	0			—		
Everett . . .	[illegible]	4	1		[illegible]		—	—
Newburyport .	14,031	[illegible]	1	—	20.00	—	—	—
Amesbury . .	[illegible]	1	0	—	—	—	—	—

Deaths reported 3,229: those under five years of age 1,204; principal infectious diseases (measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 443, acute lung diseases 715, consumption [illegible], diphtheria and croup 178, scarlet fever 63, diarrhœal diseases 48, typhoid fever 42, whooping-cough 26, cerebro-spinal meningitis 23, erysipelas 21, measles 20, typhus fever 14, malarial fever 5, small-pox 3.

From typhoid fever Chicago 11, Philadelphia 9, New York 5, Pittsburgh 4, Brooklyn and Boston 3 each, Cleveland, Washington and Charleston 2 each, Chelsea 1. From whooping-cough New York 13, Brooklyn 5, Charleston 2, Chicago, Philadelphia, Pittsburgh, Milwaukee, New Bedford and Haverhill 1 each. From cerebro-spinal meningitis Chicago 7, Washington 6, New York 4, Brooklyn 2, Philadelphia, Cleveland and Medford 1 each. From erysipelas New York [illegible], Chicago [illegible], Philadelphia and Brooklyn 2 each, Boston, Milwaukee and New Bedford 1 each. From measles Chicago 11, New York 3, Philadelphia 2, Brooklyn, Boston, Pittsburgh and Malden 1 each. From typhus fever New York 14. From malarial fever New York 3, Brooklyn 2. From small-pox New York, Chicago and Brooklyn 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 11, 1893, TO FEBRUARY 17, 1893.

Leave of absence for one month is granted First-Lieut. Isaac P. Ware, assistant surgeon, U. S. A.

Colonel Joseph R. Smith, assistant surgeon-general, U. S. A., granted two months' leave with permission to leave the United States.

Major J. V. D. Middleton, surgeon, will, in addition to present duties as post surgeon of the Presidio of San Francisco, Cal., perform the duties of medical director, Dept. of California, during the absence of Colonel Joseph R. Smith, assistant surgeon-general, U. S. A.

First-Lieut. Frederick P. Reynolds, assistant surgeon, is relieved from duty at Fort Monroe, Va., and assigned to duty at West Point, N. Y. Par. 1, 2 and 4 of S. O. 34, A. G. O. February 14, 1893.

The suspension of the order assigning Captain Eugene L.

Swift, assistant surgeon, U. S. A., to Fort Yates, North Dakota, is removed.

A board of medical officers to consist of Colonel Charles H. Alden, assistant surgeon-general, Lieut.-Col. George M. Sternberg, deputy surgeon-general, Major John Van R. Hoff, surgeon, Captain Guy L. Edie, assistant surgeon, is constituted to meet at New York City on the 27th day of March, 1893, or as soon thereafter as practicable, for the examination of candidates for admission to the medical corps of the Army, and for such other business as may be brought before it.

Leave of absence for one month, with permission to apply for an extension of one month, is granted First-Lieut. Charles Willcox, assistant surgeon.

EXAMINATION FOR ASSISTANT SURGEONS, MARINE-HOSPITAL SERVICE.

Washington, D. C., February 11, 1893.

A board of officers will be convened at Washington, March 20, 1893, for the purpose of examining applicants for admission to the grade of assistant surgeon in the United States Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) physical, (2) written, (3) oral, (4) clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order, as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons eighteen hundred dollars and surgeons twenty-five hundred dollars a year. When quarters are not provided, commutation at the rate of thirty, forty or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address:

Walter Wyman, *Supervising Surg.-Gen. M.-H. Service*,
Washington, D. C.

ELEVENTH INTERNATIONAL CONGRESS OF MEDICINE.

Rome, September 24 to October 1, 1893.

The inauguration of the Eleventh International Congress will take place the 24th of September, 1893, in the presence of H. M. the King of Italy.

The work of the Congress will begin in the nineteen sections on the morning of the 25th of September. It will be continued in accordance with the arrangements to be made and published both for the general sessions and the sections. Some of the general sessions will be devoted to scientific addresses delivered by scientists of all nations.

List of the Series. — (1) Anatomy; (2) Physiology; (3) General Pathology and Pathological Anatomy; (4) Pharmacology; (5) Internal Medicine; (6) Diseases of Children; (7) Psychiatry, Neuropathology and Criminal Anthropology; (8) Surgery and Orthopedy; (9) Obstetrics and Gynæcology; (10) Laryngology; (11) Otology; (12) Ophthalmology; (13) Odontology; (14) Military Medicine and Surgery; (15) Hygiene; (16) Sanitary Engineering; (17) Dermatology and Syphilidology; (18) Forensic Medicine; (19) Hydrology and Climatology.

Any physician may become an active member of the Congress by fulfilling the conditions of membership, inscribing his name, and securing his admission ticket.

Scientists of other professions who, through their special studies, are interested in the labors of the Congress, may acquire the rights and assume the duties of active members, and participate in the work of the Congress, both by communications and discussions.

The fee for admission to the Congress is twenty-five francs, or five dollars. It entitles to a copy of the Transactions of the Congress, which will be forwarded to the members immediately after publication.

Papers for and communications to the Congress must be announced on or before June 30, 1893. A brief abstract of every paper and communication, with their conclusions, must be sent to the committee on or before July 31st.

The official languages of the sessions are Italian, French, English and German. The regulations, programmes and daily bulletins will be published in the above four languages.

International Exhibition of Medicine and Hygiene. — On the occasion of the Eleventh International Medical Congress, an Exhibition of Medicine and Hygiene will be inaugurated in Rome, which will gather all that may practically interest physicians and specialists. A special committee has already insured the coöperation of all the most important manufacturers of the world.

RECENT DEATHS.

John J. Craven, M.D., once prominent in military and scientific circles, who superintended the building of the first telegraph line between New York and Philadelphia, died at Patchogue, Long Island, February 14th, at the age of seventy-one. He was an eminent physician and served through the late war in various important positions. As brigade surgeon he accompanied General Sherman in his march to the sea, and after the fall of Atlanta was made medical director of the Tenth Army Corps. In 1865 he was assigned to duty as medical purveyor of the Department of Virginia and North Carolina, with headquarters at Fortress Monroe. While in this position he was the medical attendant of Jefferson Davis when he was confined in the fortress as a prisoner of war. In 1846, when he constructed the telegraph line from New York to Philadelphia, the difficulty of overcoming the grounding of the wires at the poles was still unsolved, and it was he who first used the now familiar glass balls. The cable is said to have been his original idea and he first proposed the submersion of telegraph wires.

Charles F. Heywood, M.D., died in New York, February 14th. He was born in Boston in 1823, and graduated from Harvard College in 1843. Three years later he received the degree of M.D. from the Medical Department of Harvard. After three years' service in the Massachusetts General Hospital, he spent five years in study at Paris, when he returned to this country. Dr. Heywood had practised in New York for forty years. For ten years he was one of the visiting physicians to St. Luke's Hospital, and of late has been a member of the medical board of the Equitable Life Insurance Company.

Otto Kahler, M.D , Professor of Clinical Medicine in the University of Vienna, died January 24th, aged forty-four years. In 1882 he became professor in the University of Prague and in 1889 was called to Vienna to succeed Bamberger. The same year he was operated on for cancer of the tongue, but finally died from the disease. His medical writings have been largely on diseases of the nervous system.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, February 27, 1893, at the Medical Library, 19 Boylston Place, at 8 p. m.

Dr. J. W. Farlow: "Is not too Much Importance Attached to the Condition of the Tonsils?"

Dr. Edward Reynolds: "Early Diagnosis and Prompt Treatment of Puerperal Septicæmia."

Dr. Farlow expects to show a patient with dysphonia spastica.

John T. Bowen, M.D., *Secretary*.

Surgical Section of the Suffolk District Medical Society. — This Section will hold its regular monthly meeting, Wednesday evening, March 1, 1893, at 8 o'clock, at 19 Boylston Place, Boston.

Dr. Paul Thorndike: "Diseases of the Seminal Vesicals."

Dr. E. H. Bradford: "Recent Developments in the Treatment of Lateral Spinal Curvature."

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

BOOKS AND PAMPHLETS RECEIVED.

Fel Bovinum as a Therapeutic Agent. By D. H. Bergey, M.D. Reprint. 1893.

Abscess Around the Rectum. A Lecture at the Clinic for Diseases of the Rectum, at the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprint. 1893.

Original Articles.

CASES OF CHRONIC INTESTINAL OBSTRUCTION: WITH REMARKS.[1]

BY MAURICE H. RICHARDSON, M.D.,
Visiting Surgeon, Massachusetts General Hospital.

It is very difficult and often impossible exactly to determine the nature and situation of the lesion in cases of chronic obstruction. After middle age the chances favor very much the existence of a malignant stricture, usually though not always situated in the sigmoid flexure. In one case operated on by Dr. Homans at the Massachusetts General Hospital, the constricting ring was at the splenic flexure, and in another occurring in my own service the disease involved the ileo-cœcal valve. In another case, which I recently saw with Dr. Snow, of Newburyport, the ascending colon was involved some inches above the ileo-cœcal valve. With these exceptions, malignant obstructions, in my experience, have been situated in the sigmoid flexure. Occasionally a gradual closure of the intestinal canal depends upon causes other than cancer, and the obstruction may be located at any point. But in order to apply the appropriate treatment, it is not necessary to know the exact nature of the lesion. If complete obstruction exists, the course is clear: to prolong life, it is necessary in some manner to relieve the distended intestines. In most cases the disease, if malignant, will be found so extensive that only temporary relief can be offered by the formation of an artificial anus. At times, however, such a stricture is annular and confined to the inner coats of the bowel, conditions under which radical and permanent relief may be attempted by excision and suture. Whatever the lesion may be, an exact knowledge of its situation is of great importance to guide us in selecting a place for incision. It is impossible to determine this point by physical evidence, except rarely, because the tumor, even if a large one, may be entirely masked by the existing distention. If the stricture is annular and the disease not advanced, its presence cannot be made out by the most careful examination, even in a collapsed abdomen. We must, therefore, depend almost wholly upon the history of the case and the subjective symptoms, as the only means of forming a correct opinion. In most of the cases which I have seen there has been pain caused by spasmodic intestinal contractions. This is intermittent, and follows a variable course, but ends at the point of constriction. I have heard this symptom detailed so many times that I give it great value in selecting the site for opening the bowels. Inasmuch as the stricture is usually situated in the sigmoid flexure, the pain is generally described as running down into the left groin, ending in a certain fixed point which the patient indicates with his finger. With such a description of pain one is quite justified in opening the abdomen in the left groin. Occasionally, however, there is a large and movable sigmoid flexure, so that the stricture may be situated in the median line, or even on the right side. Another method of determining the site of the stricture is by the injection of fluid *per anum.* This method, however, is not absolutely conclusive. If situated at the ileo-cœcal valve or at the splenic flexure, a larger quantity of fluid may be injected than if it be at the sigmoid flexure. But it does not follow because one can inject a large amount of fluid that the stricture is situated high up. There may be a valve-action at the point of constriction which will allow the passage of fluid upward, but not downward. In doubtful cases I think it is well to make a median incision long enough to explore the abdomen with the hand in all directions. If the stricture is found to the right or to the left the operation may be completed very intelligently through a second small incision. By this method we may also ascertain not only the situation of the lesion, but, with a full knowledge of its extent, complications and metastases, select the most appropriate operation. This plan was successfully adopted in one of my later cases, that of Mr. W., of Rockport. There is a very little, if any, additional danger, and the results are much more satisfactory.

My chief object in presenting this paper is to advise operations for relief in most cases of chronic intestinal obstruction. A policy of non-interference is advocated by many, on the ground that on the whole the sum of suffering is less. It seems to me that if we ever advise operation in hopeless disease, for the purpose of relieving suffering and prolonging life, we ought to urge such procedure in the cases under consideration. Life, useful, endurable, and even enjoyable, may be prolonged months or even years. When death comes, as far as I have been able to observe, it has been peaceful and without pain. In cases unrelieved by surgical art the suffering is very great. The pain and distress are constant, even under the influence of opiates. The great distention interferes with the thoracic viscera, and breathing becomes labored and painful. At first nothing can be taken by the mouth. Nausea follows, with persistent vomiting. The contents of the small intestine become regurgitated into the stomach, and are expelled by the mouth. Finally, if the patient has not succumbed to starvation and exhaustion, the foul and decomposed contents of the bowel reach the stomach and are vomited — a situation most loathsome and repulsive. If it is ever justifiable to perform tracheotomy in cases of obstruction to breathing for the purpose of giving a peaceful end, it is certainly quite as justifiable in cases of chronic intestinal obstruction. A rapid operation of moderate severity, almost always successful, gives immediate relief to pain: respiration becomes tranquil, vomiting ceases, and the patient rapidly gains in health and strength. After a short time the artificial anus becomes well regulated and causes but little annoyance.

But we can go farther than operations for palliation in some cases. In several there was nothing except an annular stricture of the intestines. With the improvement in the technique of intestinal resection and the small mortality in non-septic cases, I think we can offer under certain conditions the hope of a permanent cure. In the cases of Prof. M., of Amherst, and Mrs. D., of Fitchburg, there was no evidence whatever of disease except in a constricting ring in the sigmoid flexure. I believe that the disease in these cases might have been excised with as great chance of permanent success as in cancer of the breast. The immediate danger from such an operation, of course, would have been much greater than in breast amputations, but the mortality would probably not exceed that of vaginal hysterectomy for uterine cancer. In many of the cases where the disease had invaded more than one coil of intestine, or where there was evident metastasis, the question of such an operation was not considered. Under such conditions, if there is no chance of a permanent cure, we may at least offer relief by palliation.

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[1] Read before the Boston Society for Medical Improvement, December [illegible].

It is always important to explore before the obstruction has become complete, because it is very difficult indeed to get a clear idea of the existing conditions in the presence of great distention. Under such circumstances, as soon as the peritoneum is open the bowels should be emptied as much as possible by aspiration. This procedure, however, is not without danger. I have repeatedly seen fæcal matter escape through the needle-wound made in the distended coil. The intestinal coats are so tense that they cannot slide by each other and prevent extravasation. The needle should be used very sparingly through the abdominal wall and a very small one selected. Too much confidence, however, should not be placed in the use of the needle. In chronic obstruction the intestinal contents have been churned into a yeasty, homogeneous mass. There are no large collections of gas to be emptied by aspiration, and the small needle becomes quickly clogged and useless.

I have included under the head of chronic obstruction all cases in which the symptoms have been gradual in their appearance, or in which the obstruction has been of more than a week's duration. Acute obstructions dependent upon the sudden closure of a fully patent bowel are so rapidly fatal, if unrelieved, that I have never known a patient to survive more than three or four days. To chronic obstruction, though finally complete, the patient gets accustomed, so that he may live many weeks with the intestinal canal totally occluded.

The following cases have been selected from a large number because they present the clinical features of most of the varieties of chronic obstruction. In one the diagnosis was beyond question, from the existence of certain rectal conditions. In most, however, there was no physical evidence of a positive character, so that the diagnosis was somewhat uncertain. In all my cases where I have operated, or examined post-mortem, with one exception the diagnosis of cancer was correct. In this case there was a band relieved by operation. In another case, that of a young man, cancer was not suspected, but found at the autopsy.

Case I. On October 17, 1889, I saw Prof. R. H. M., aged fifty-four, of Amherst, in consultation with Dr. Fish, of Amherst, and Dr. Cooper, of Northampton. The personal and family history were exceptionally good. During the previous spring he began to be troubled with constipation, though previously the bowels had been in perfect order. For this he was treated by Dr. Fish. The movements were preceded by considerable pain in the left side. In July he had his first attack of sharp pain, which was followed by faintness. After using a cathartic, the bowels were loose for some days, but he still had these twinges of pain in the left side. There were two subsequent attacks of similar character. The present attack began after the use of Carlsbad salts, and has been more severe than ever before. The pain has ended right in the middle, but has started as before in the left side. (The stricture was found, post-mortem, a little to the right of the umbilicus in a large sigmoid flexure.) Nothing has passed by rectum except small quantities of watery fluid and one small fæcal mass. There has been slow but not marked emaciation. The injection of twelve ounces of fluid by rectum through a tube introduced twelve and a half inches caused pain. There was no escape of gas. With the present attack there has been nausea and vomiting. The vomitus has been brownish and contains bile. There has been no other constitutional disturbance.

Examination. — A well-developed, well-nourished man. Pulse 100, temperature 99.5. Abdomen distended moderately. In the right lower quadrant there was more resistance than elsewhere. This region was tender and tympanitic, and suggested an enormously distended bowel. (It proved to be the caput cœci.) At a point to the right of the median line, a little below the umbilicus, the termination of the pain was located. Rectal and thoracic examination was negative; urine normal. Malignant stricture was strongly suspected, probably seated in the sigmoid flexure; and the question of operation submitted to the patient and friends.

October 21st, Dr. Fitz in consultation confirmed the above opinion, and advised exploration. There had been no passage whatever of gas or flatus since the 17th. An incision was made in the left lower quadrant parallel to Poupart's ligament, starting at the outer border of the rectus. A dark, tense tumor presented, the greater portion of which seemed to be situated towards the right, and continuous with the mass previously described in the right lower quadrant. The distention was so great that the bowel looked almost gangrenous, being of dark chocolate color, with a greenish tinge. I supposed this to be the distended sigmoid flexure, above the obstruction. Nothing could be felt indicating the nature of the constriction. The distended gut was therefore brought into the wound and stitched to the abdominal parietes. This was accomplished only with difficulty, apparently because the greater portion was so far to the right. The bowel was immediately opened and there was a considerable escape of fæces, but by no means as much as was expected. This fact suggested the possibility that the bowel had been opened below the constriction. Recovery from the operation was rapid and complete. The fæcal discharges became more abundant, pain ceased, and there was much improvement in his general health. His appetite was voracious. He was able to resume his work to a limited extent at Amherst College. Death from exhaustion took place six months later.

At the autopsy I found a stricture in the sigmoid flexure. This was situated to the right of the umbilicus, the flexure being very large, and its mesentery long and loose. The disease was precisely where the stopping-point of pain had been described. The artificial anus had been made in the caput cœci, which had been drawn over to the left. There was a cancerous mass in the liver. The ascending, transverse and descending colons contained enormous fæcal masses. Prof. M. told me some months after the operation he had "never had any kind of pain. The discharges come with perfect ease and without pain. Life is endurable and even enjoyable."

It is remarkable that the adhesions in this case were strong enough to keep the cœcum to the left. An opening in the descending colon was intended, and it was supposed to be there until the autopsy. The artificial anus was quite as serviceable, however, and its position had no subsequent bearing on the history. The situation of the constricting ring, the free mobility of the sigmoid flexure and absence of adhesions, even at the time of death, have suggested interesting questions as to the possibility of a complete resection at the time of operation. I think it might reasonably have been anticipated that a successful resection, with removal of the cancerous ring, would have prolonged life indefinitely. Such an operation would have been extremely difficult at the time because of the enormous dilatation of the bowel above the disease. This condition not only interferes very greatly with all explorations and manipulations, but it necessitates the suture of a recently distended gut with a collapsed one.

The proposed operation certainly has its limitations. One of these is that resection should not be undertaken except in a collapsed abdomen either before complete obstruction or secondary to the temporary relief and artificial evacuation through an intestinal fistula. Another method which was considered was that of intestinal anastomosis. This measure requires that there should be easy access to the bowel above and below the stricture, and is to be used only where the various mechanical devices for its performance can be securely applied. In this case anastomosis was impracticable. It might have been performed with the knowledge subsequently obtained; but I am convinced that the immediate danger would have been much greater than in the operation which was selected. The only successful cases of intestinal anastomosis in this community, as far as I am aware, are those of Drs. Homans and Conant. In Dr. Conant's cases the anastomosis was preceded by a complete resection of the cœcum for malignant disease. On the other hand, there have been several failures. I have never seen a case in which it seemed to me best to use this method.

Case II. Mrs. A. F., aged thirty-seven, I saw in consultation with Dr. Rice, of Fitchburg, November 23, 1889. Personal history good. Her father died with a stoppage; mother living and well. There had been a miscarriage some weeks before. In August, while in apparent health, was taken with quite severe pain in the left inguinal region, running down into the left hip. This was accompanied by vomiting. There was no rise in temperature. The pain lasted two days, was severe, and associated with tenderness over the abdomen. For a week she did not pass gas, nor for two weeks fæcal matter, though there was constant tenesmus. At the end of two weeks there was free discharge of loose fæces. Before this attack there had been a severe diarrhœa, with bloody discharges and pain. About this time riding and jolting were painful. Three weeks ago the present attack began, with pain and constipation. "The pain starts in the left side all the time. It comes up and stops in the navel. It feels as if it would burst there. When the pain gets there, it will gurgle and make a noise. It never comes further than the navel. The bowels have been bloated more or less for a year, but they have been generally regular."

Examination. — A very large and lax abdomen, in which nothing could be felt by external examination. There was tenderness in the lower part, over the bladder, rather to the left side. Vaginal and rectal examination was negative. The general appearance was good, though there was some emaciation. No tumor could be felt, although a very thorough and satisfactory examination of all parts of the abdomen could be made. There were no constitutional symptoms, and no evidence of disease elsewhere.

Diagnosis. — Chronic intestinal obstruction, possibly of malignant origin. I did not advise exploration, because the symptoms had been so frequently relieved by medical treatment. The subsequent history will show that the disease might have been excised with the greatest ease, and with a strong probability of permanent cure.

February 8, 1890, was the time of my second examination. She went two weeks after my previous visit without any fæcal passage. At first gas began to escape, and then there were more abundant and satisfactory movements than at any time since the beginning of her illness. Her appetite returned, and she was able to be up and about the house. For a month there was no pain requiring morphia. In the middle of January she began to have pain in the same region as before, with nausea and slight fever; distention soon became general and excessive. There had been more or less constant vomiting, once or twice with fæcal odor.

The patient was apparently in great distress, with marked emaciation, sunken eyes and flushed cheeks. Pulse 180, temperature 100.8°. The abdomen was enormously distended, very tense and tympanitic. Vaginal and rectal examinations were negative. She was apparently moribund. I found it impossible to pass the rectal tube more than thirteen inches, and there was no escape of flatus. A small aspirating needle was introduced into the transverse colon, through which about one gallon of gas was withdrawn. This was very offensive and burned with a bright yellow flame. There was a marked reduction in the size of the abdomen, and she expressed much relief. The pulse improved, and before the next morning she had passed seven quarts of yeasty fæcal matter. In the differential diagnosis of this case I was of the same opinion as before — that the obstruction was due to a cancerous stricture.

On the evening of February 10th, Dr. Fitz confirmed my diagnosis and advised immediate laparotomy. Littre's operation was performed by an incision in the left groin, parallel to Poupart's ligament. The descending colon, with its longitudinal fibres, presented in the wound. Her condition did not justify any prolonged exploration; I therefore sewed the intestine to the abdominal wall without delay, and opened the gut. During the night she passed a great deal of gas and fæcal matter, and on the following morning seemed very comfortable indeed. In the course of a few days the artificial anus became well established, and the abdominal symptoms were relieved. On the fourth day after the opertion, the pharynx and fauces became diphtheritic. She was unable to swallow, and died ten days after the operation. At the autopsy I found an annular stricture two feet above the anus, situated in an enormous sigmoid flexure, a little to the right and below the umbilicus. A probe was passed with difficulty through the stricture. The growth was limited to the mucous coat of the intestine, and no evidence of metastasis could be found.

In this case the conditions found at the autopsy were unusually favorable for excision and suture. If the exploration had been made in November, when there was no distention and when her strength was good, the radical operation would probably have been successful. With the unfavorable conditions of February nothing more than a palliative operation was justifiable, The existence of a malignant obstruction was so probable early in the disease that I ought to have urged an exploration at that time.

Case III. C. B. S., aged sixty-two, dentist. This gentleman I saw April 13, 1890, with Drs. Choate and Johnson, of Salem. Five weeks ago, in apparent good health, he was seized with paroxysms of colicky pains.

The bowels, which had been regular, ceased to move, and with the exception of occasional slight watery discharges have been occluded ever since, though one day there were several movements copious enough to empty the large intestine. There have been nausea, vomiting, and hiccough. At one time large quantities of coffee-colored liquid were vomited, and his condition seemed desperate.

Examination. — The general appearance at this time was good, and the strength fair. The abdomen was distended, but there was no evidence of tumor by external or rectal examination. The diagnosis was malignant stricture of the sigmoid flexure, and operation for relief was advised.

Soon after this visit the general and local conditions improved very much, and the idea of operative interference was abandoned.

On Monday, May 12th, I found that there had been complete obstruction for some time. There had been progressive emaciation and through the thin abdominal walls the outlines of the moving and distended intestinal coils could be seen. In the left side of the abdomen there was a large, tense, and tympanitic mass, evidently the distended bowel just above the stricture, which seemed to be located in the sigmoid flexure.

On Sunday morning, May 18th, I opened the abdomen in the left groin, and fastened the descending colon to the abdominal wound. There was considerable ascites, but nothing abnormal could be felt. I opened the intestine, and there was an immediate discharge of gas and fæces. He recovered speedily from the operation, was very much relieved by it, and said that he was very glad indeed that it had been done. He improved very much in his general health, was able to take large quantities of nourishment, and there was no pain. He died in the summer of 1891, from exhaustion and extension of the disease through the intestines. Before death, with my finger in the artificial opening, I was able to feel the cancerous disease. At the autopsy I found the intestines matted together about the sigmoid flexure, with extensive cancerous infiltration.

The operation of inguinal colotomy, as performed in this case, is very brief, and adds little to the existing dangers. The bowel may be opened at once with but slight chance of peritonitis. The wound is shut off from the peritoneal cavity, not only by the sutures, but by the pressure of the distended coils. So gradual is the evacuation of the colon that some days elapse before the abdomen becomes flaccid. In the meantime the adhesions are firm and the anus well established. It is surprising, however, to observe that the bowel may be easily separated by the fingers from the abdominal wound, even after a year or more. I have never known such separation to take place accidentally. The occasional disappearance of the obstruction I have observed in malignant cases. In the present instance, a year after the operation, there were large movements by rectum. In other cases I have known the abdominal wound to close entirely, and the dejections to take place through the natural channel. This phenomenon is undoubtedly due to ulceration and disappearance of the cancerous ring.

(To be continued.)

THE United States Government has invited different European countries to hold a meteorological conference at Washington, to consider a scheme for international co-operation in obtaining data for weather forecasts.

EYE-AFFECTIONS FROM KIDNEY DISEASE, AND IN PREGNANCY.[1]

BY EDWARD SWASEY, M.D., WORCESTER, MASS.,
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I HAD intended, at first, to cover a larger range of eye-affections than is implied in the title of this paper; but I believe it will be of more interest and profit to concentrate our attention on some of the lesions of the eye accompanying kidney disease, and especially the nephritis of pregnancy, and the significance of some of the danger-signals at that time. There are different degrees and phases of eye-troubles coming with Bright's disease; but practically the whole force of the lesion is spent on the deep structures — the retina and the optic nerve — and hence they are open to study only to one who is familiar with the use of the ophthalmoscope, and the appearances of the normal fundus, as well as the different lesions found there.

Regarding cataract, is it caused frequently by kidney disease? One authority (Deutchmann) has arrived at the conclusion that it is the result in many cases of chronic Bright's disease. Becker, on the other hand, has made very extensive investigations of this subject, and as a part of his study consulted the records of 250,000 autopsies of Bright's disease, found in the Vienna hospitals, to see how often cataract was found. As a result of these studies, he says it cannot be justly claimed that cataract is the result of kidney disease, although it may occur with it.

The *chronic* form of Bright's disease that is most productive of eye-complications is the contracted kidney. It may, of course, be found with other forms, the lardaceous kidney and others. But it is with the contracted kidney more than all others combined, that we find lesions of the retina and optic nerve. They occur in about one-fourth of the cases of Bright's disease in sufficient degree to produce a decided symptom to be seen with the ophthalmoscope. Eares and some others have found one-third of the cases of albuminuria with changes in the retina, though in many of these no defect of sight had occurred. These are not probably late and last changes to come in Bright's disease; and were the ophthalmoscope used earlier in nephritis it would probably show early signs here. Many cases are on record where this instrument was the first to suggest kidney disease. Regarding the first and primary causes of contracted kidney, and of chronic nephritis, the tendency seems to be to lay the fault at the door of malassimilation, and imperfect oxygenation, resulting in waste products, uric acid, oxaluria, etc.

A paper on this subject has just been read and discussed at the New York Academy of Medicine, in which the author regards the kidney as simply an end organ, and it was more clear to his mind that Bright's disease was not a disease of the kidney at all. Another said that what had often been regarded as a disease of the kidneys, was in reality simply a local manifestation of an underlying condition. He had been led to believe that this artero-renal disease is often found to be primarily due to defective assimilation.

DaCosta has an article in the January number of the *American Journal of Medical Sciences* on this same topic. He traces the pathological process of some forms of chronic Bright's disease back to this same source of malassimilation, and the kidneys are kept in a state of irritation and congestion, in the effort to excrete the waste products that have no right in the uriniferous tubules, and should have been burned up in Nature's laboratory. He says: "In other words, the primary fault is not in the kidney. It is held by some that all, certainly most, cases of Bright's disease originate in uric acid acting locally." But DaCosta regards this view as somewhat too sweeping.

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[1] Read before the Worcester Medical Association, January 25, 1893.

Although the retina is not an excretory organ like the kidney, it is an end organ, so to speak, and its arteries are terminal arteries, and do not anastomose. For this reason they are early affected, in some degree, by any noxious elements in the blood, and also they are not easily relieved in time of extra-arterial pressure. The changes here are like those found elsewhere in the body associated with contracted kidneys. They show hyaline degeneration, become brittle, obstructed, and permit extravasation. Compare this condition, at one end of the arterial system, with the hypertrophy of the left ventricle, which is so commonly found also in contracted kidney, at the other end, and it is not strange that a delicate, web-like structure as is the retina, should early and frequently suffer. Hence it is that retinal hæmorrhages are among the most frequent and earliest of lesions of renal retinitis. Noyes says: "Hæmorrhages appear in more than half the cases; and in certain exceptional instances they are the conspicuous and almost exclusive lesion." Professor Panas, of Paris, says: "It might even be said that ninety out of every one hundred cases of hæmorrhagic retinitis are from albuminuric origin."

This percentage is much higher than I find given by any other authorities. It should not be forgotten, of course, that other discrasiæ produce hæmorrhages here — syphilis, diabetes, pernicious anæmia, malaria, chronic lead-poisoning; these all stand in an etiological relation to retinal hæmorrhages. They most frequently occur in the neighborhood of the optic nerve, and near the large vessels. The region of the macula is very frequently the seat of these extravasations, and here it is that they produce the most serious effect on the vision. When you recall how little, or even no, albumen may appear in the urine in the contracted kidney, you may well believe that the fundus of the eye may show well-marked changes before any other organ, or even before vision is impaired. DaCosta mentions a case in which this form of nephritis was found well-marked at post-mortem, in which albumen was found only once in eight examinations.

Retinal hæmorrhages are significant, and early changes of chronic nephritis, but there is a form of retinal change that is regarded as almost pathognomic of Bright's disease. "Clustered about the macula and also the optic-nerve entrance will be seen a number of small yellow and yellowish-white masses, quite distinct and separate from each other. Of these there may be from four to seven or eight in number, and with the disposition to assume a circular or stellate arrangement around the macula. Again, the picture may be of large plaques, where a number of these points have coalesced and formed white areas, which may be so large as to seem to cover the major part of the fundus. The zonular character of the white plaques differs from that of other forms of retinitis in which the exudation and degeneration are less diffuse and more longitudinal in extent, and which correspond more closely with the direction of the larger vessels" (Loring). Similar appearances are sometimes seen, it is true, in other forms of retinitis as a late production. Diabetes, for example, may give rise to changes here that very closely simulate this picture of Bright's retinitis. But their comparatively early appearance in Bright's disease, and their late appearance in other forms of retinitis; their soft and more yellowish look at first in Bright's, while their white and more glistening color is characteristic of the later changes of other forms of retinitis. Moreover, diabetic retinitis is characterized by the rapid participation also of the optic nerve in the transfer, and the papilla quickly becomes atrophied. Fatty degeneration of the tissues, and principally of the radiating fibres that are here about the macula, is the cause of these changes and appearances in the retina in nephritis. Hypertrophy of the connective-tissue has occurred, as well as hypertrophy of nerve-tissue, and the latter change accounts for the large white plaques, and both this appearance and these structural changes are late to arrive.

But of what practical importance is all this, and in what way may these changes and appearances be utilized in your efforts to benefit your cases of chronic Bright's disease? Unfortunately its utility is not universal, or of wide spread application. Every symptom, however, is of importance in an obscure case; and even a negative evidence is not without weight, both in diagnosis and in prognosis. In the first place, it may serve wonderfully to clear up a doubtful case, and the ophthalmoscope may give a more decisive answer in a supposed case than any other instrument, and the retina show more clearly than any other organ what you have to deal with. It should not be forgotten that, "The course of albuminuric retinitis is insiduous, and may be absolutely latent. The patient feels no visual troubles in such cases, and we are often astonished in our ophthalmoscopic examination to find the lesions so strongly marked. We should make it a rule to examine frequently the eye of all albuminuric patients" (Panas).

Not long ago a middle-aged man was in my office for examination of his eyes. He had been feeling ill for some time, though not really sick. He was nervous and worried about himself, and I am quite sure he was apprehensive that he had commencing kidney disease. He was under the care of another physician, and I cannot say what may have been found. But he was a good deal relieved and rejoiced, I feel sure, when I told him his eyes and his retinæ were free from any sign of kidney complication.

Again, as a prognostic sign, it certainly has an important place. Some observers have predicted very closely the length of time these patients would live by the appearance of the retinæ. The following case, in brief, is on record by a competent observer:

A man, age twenty-nine, of good habits, noticed his eyesight was becoming blurred. He called upon an oculist to see what could be done to remedy this by glasses. These gave no improvement. The oculist then says: "The ophthalmoscope quickly pointed to the deposits and the extravasations of blood in the fundus of the eyes. 'Have you had any trouble with your kidneys?' was asked of him. 'No,' he replied, 'I never had better health in my life, and I weigh twenty pounds more than I ever did.'" Albumen was found in abundance in the urine. He was advised to consult a physician at once, but neglected to do so because he saw no real cause for so doing. In a little less than a month he did call in a physician, but he soon had a convulsion, and in a month's time from the first visit to the oculist he died in convulsions.

This case shows that these lesions are not by any means among the last and latest appearances in the great drama of Bright's disease. Dr. Webster, of New York, was once called upon to examine the eyes of a patient, both for a diagnosis and for prognosis. The patient was about to start on a trip south for his health. Dr. Webster told his physician that the man was liable to have a convulsion at any time and die in it. In less than thirty-six hours he did have a convulsion, and that was the end. I well recall a case I saw in New York. A man, about fifty-five years of age, had been for some months gradually failing, and for the past few weeks had been kept from his business. His physician had diagnosed Bright's disease, but evidently had not taken a very grave view of the case; not only predicting he would live some time, but encouraging the patient to plan to take his summer vacation as usual. He was allowing him to sit up a good deal with insufficient covering, and in a rather cool room. He had left his patient some trifling directions and then gone out of town on a two weeks' vacation. It was at this time that the patient's brother asked me to see him and give my opinion. His appearance and condition were certainly not encouraging. Only in a casual way was any reference made to the eyesight. But an examination with the ophthalmoscope showed these large white patches at the fundus, well-marked. On our way home I gave it as my opinion, without an examination of the urine, that the patient had but a few weeks at most to live, possibly six weeks. In less than a month he was dead. I confess I did not prognosticate wholly from the retinal appearances, but it was an important part of the examination.

In the line of diagnosis the following case is illustrative: A woman, aged about forty years, came to the clinic at the Manhattan Eye and Ear Hospital to have glasses fitted for gradually failing eyesight. She made no complaint of her general health, but the examination of the fundus of the eye showed a beautiful illustration of the "Duck's nest" about the macula, so much so that it was passed about as a typical illustration of the first stages of Bright's retinitis. The yellowish-white points nestled about the macula are quite suggestive of a nest with eggs in it.

So much for the retinal changes in the chronic forms of Bright's disease. But we have also forms of retinitis following acute nephritis, as sequelæ of scarlet fever, diphtheria and other eruptive fevers, and also in pregnancy. Retinitis, taking on at first more of a simple hyperæmia and inflammation, and of a neuro-retinitis, will characterize these changes. The retina will appear blurred, hazy and œdematous; the optic nerve will appear blurred in its outline, and almost indistinguishable from the surrounding retina; and sometimes a well-marked papillitis will exist. The arteries will be reduced in size and become thread-like; the veins large, congested and tortuous; and the whole picture at once suggestive of constriction at the optic-nerve entrance, from inflammatory deposits. This appearance of the fundus is also a part of the retinal change seen very often in chronic nephritis. Although serious impairment of vision may follow from scarlet fever nephritis and retinitis, yet, in the majority of cases, recovery will follow with the improvement in the nephritis. The chief danger will be, if continued too long, that these changes of retina and optic nerve will be followed by atrophic changes of the nerve, and permanent blindness follow. Restoration of the healthy tone and function of the kidneys will be your chief care and course of treatment, trusting that the eye complications will improve *pari passu*.

But I believe the visual disturbances arising in the course of pregnancy form the most important part of the discussion to-night, especially to those in general practice. I hope to hear the topic discussed and observations related. This, at least, is a live topic; and I have purposely left it for the last division of the paper. You all know that blurring of sight and perhaps quite decided forms of blindness do come on in the latter part of pregnancy. These symptoms may come as early as the third month; they may come on after labor. Practically the subject may be considered under two heads:

First, a quite sudden, more or less transitory, and more or less complete, loss of sight. Perhaps the attack has been preceded by some feeling of malaise, headache and nausea; possibly it has had no precursors. Ophthalmoscopic examination might show no change at all in the fundus. It is a case of uræmic amaurosis, so called. The seat of the trouble is believed by some to be the central nerve ganglia. Loring thus expresses himself on the subject: "You may speak of uræmic amaurosis, and if so, what and where is the lesion? In a great many of them I am induced to think that there is a retro-bulbar neuritis as the initial lesion, which may show itself at a later day as an atrophy of the disk. Still we know very little about the matter."

In the second division we have retinal changes identical with those seen in chronic Bright's disease. Here the failure of sight is more or less gradual, not the sudden blindness of uræmic poisoning. It is this last insidious, progressive form that may and most often does bring lasting and disastrous results. Many a mother has given up her life needlessly, or, if not her life, something as precious as her life, her eyesight, by waiting too long for relief. The ophthalmoscope alone can distinguish these two forms of retinal trouble.

Ought premature labor or abortion ever to be performed to restore the eyesight? I will ask you to bear with me in a few histories to shed light on this subject. Dr. Loring, of New York, was the first, some ten years ago, to advise abortion for threatened permanent blindness. The patient was thirty-five years of age; she was completely blind in her left eye from optic-nerve atrophy, induced by three previous pregnancies. In each of these she had had impairment of vision. She was pregnant for the fourth time, and again her eyesight was beginning to fail. The optic nerve was commencing in the right eye to show atrophy. Abortion was induced at the third month; her former vision returned; the atrophy was checked. Yet repeated examinations of the urine had failed to detect albumen; and Dr. Loring himself did not believe the case depended on kidney disease. It was, in fact, a case of optic-nerve atrophy, resulting from some unrecognized blood-poisoning, or induced by repeated pregnancies in a way unknown.

Again, take the following case: The patient, age thirty-six, had convulsions ten days before confinement, and became totally blind. Six weeks after confinement she was examined, and found totally blind in both eyes. The pupils were widely dilated; there were characteristic exudations about the macula in each eye; and retinal hæmorrhage. Six months later still she was totally blind, and optic-nerve atrophy was well marked.

Or yet another case: Impairment of vision at five months of pregnancy. At six months the ophthalmoscope showed well-marked neuro-retinitis and urine highly albuminous; no other signs of kidney disease. Abortion advised, but deferred; still more failure of sight. Subsequently labor was induced; no convulsions. Her health was restored, but her eyesight completely lost from optic nerve atrophy.

The following case is not so bad in its results as the foregoing: Patient thirty-six years of age. Permanent dimness of sight came on at the very end of pregnancy. Previous to this, at various times, she had had during her pregnancy attacks of dimness of vision, with nausea, headache and albumen in the urine, and attacks of so-called uræmic amaurosis. At the end of labor there was a well-marked neuro-retinitis and deposits in the retina. After the lapse of three months her eyesight was restored. We can hardly say why this patient was not doomed to fall into the class of those just recorded, and become blind from optic-nerve atrophy, except the one element of the labor following soon after these symptoms appeared. We would almost expect such a result in lesions lasting so long. It was regarded by its recorder as a fortunate escape from blindness (Pooley).

In Eastlake's case the patient was thirty-four years of age, and had had at this early age no less than nine children at full term. On the second day after the birth of her second child she suddenly became blind, which lasted more or less completely for three to five weeks. These attacks of blindness were repeated in all of her seven subsequent confinements. Examination, a long time subsequent, showed the arteries contracted (the last stages of albuminuric retinitis) and a white optic nerve.

In Haleme's case the patient was thirty-five. In the sixth month of pregnancy, albuminuric retinitis developed. She was totally blind in each eye, and the retinæ showed the œdematous pale look mentioned above; the disk was hazy and indistinct. In the right eye there was a detachment of the retina on the temporal side. There was albumen in the urine and general anasarca. Premature delivery was advised. Six years later there was a large deposit of pigment where the detachment had occurred, and a good deal of choroidal atrophy in the left eye. This patient could read, and had vision one-third of normal.

Other cases could be cited; but these, taken from the literature on the subject, will serve the purpose to point the lesson, namely, that there are certain cases of amaurosis coming on in the latter part of pregnancy that should receive your serious concern. The uræmic amaurosis generally comes in company with other rather sudden symptoms, and your patient's life will be more your concern than will be her loss of eyesight.

I cannot do better than to repeat here the conclusions arrived at by Dr. Howe, of Buffalo, N. Y.: "When the vision begins to be impaired only in the last two weeks of pregnancy, recovery follows almost invariably. Of those described as being in the eighth month or thereabouts, when the retinitis commences, not one-half recover, and several did not materially improve. Again, when this began earlier than was estimated — as the middle of the seventh month, when nature did not interfere by bringing on a miscarriage, and when the patient escaped with her life — it was only to remain blind forever afterward."

Noyes regards these conditions as judicious. It should not be forgotten that these lesions of the retina and optic nerve may have been in existence long before visual troubles appear; so long, in fact, that secondary atrophic changes may result. Especial danger pertains to those patients in whom, in previous pregnancies, there has been even a partial loss of sight, which has not been restored after labor. In these there is likely to be atrophic changes coming with each subsequent pregnancy that may result in permanent blindness.

Another lesion that occasionally, though rarely, results from the nephritis of pregnancy is *detachment of the retina*. A few cases are on record; and the retina may return to its normal position subsequent to labor. Visual troubles may come on during lactation. Nettleship has reported such cases. Atrophic changes were seen here; but whether they were the result of some previous renal and retinal changes, or whether caused from lactation, *per se*, as in the same way that Loring regarded his case as due to some unknown cause resulting from pregnancy, is not fully stated.

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SOME INDICATIONS FOR EXTERNAL URETHROTOMY.[1]

BY JOHN C. MUNRO, M.D.

The following four cases of external perineal urethrotomy are ordinary routine cases coming under my care at the Carney Hospital, taken without selection; nevertheless, they seem to point some lessons that it may not be amiss to emphasize, and with that in view they will be used simply as texts.

In reviewing the literature of this operation one is impressed by the growing tendency to enter the bladder over the pubes. That is as it should be, provided the perineal route is not neglected. Although Harrison has placed perineal operations on a definite, rational basis — a basis established less than ten years, in fact — there is still a tendency to disregard or to fail to appreciate the simpler surgical indications in cases requiring interference.

My first case might be prefaced by this quotation from Watson: "Once a deep stricture is beyond control of dilatation it seems to me best treated by external urethrotomy, — not reserved until retention or extravasation are actual, present dangers, but while the urethra is still permeable to a guide."

The patient, a sailor, thirty-nine years old, with a gonorrhœal history, had been dilated three times (at least two of these being by rapid divulsion), and each time contraction rapidly followed. At entrance he had the swollen, indurated perineum of extravasation, with difficult, painful micturition, high fever and the general appearance of a very sick man. As he refused any urethral treatment, I contented myself with thoroughly opening and curetting the perineum and scrotum; and in a short time he was discharged with the wounds healed. He returned soon after for further treatment, when examination showed anterior strictures of 22 and 16 F. calibre and a filiform stricture at four and one-quarter inches. Under ether the posterior bulbous urethra was opened on a whalebone guide. From this point the dissection was carried backward for an inch without a guide through a mass of cicatricial tissue until the bladder was opened. The anterior strictures were cut internally to 30 F., and the bladder drained through the perineum. Convalescence was uneventful; and two months later the urethra took a 30 sound without trouble.

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[1] Read before the Boston Society for Medical Improvement, December 12, 1892.

In this case, when it was found that recontraction rapidly followed dilatation, it was worse than useless to employ rapid divulsion, because ragged tears of unknown depth and direction must of necessity have been made into the peri-urethral tissues; and occurring in the sagging part of the urethra, everything septic within reach would certainly drain into the lacerations. The healing process would become one of inflammation and disease. When extravasation had taken place, external, thorough division of the whole of the deep constriction was the only thing to do. In this way a physiological rest would be assured "by enabling us," as Bangs says, "to abrogate the functions of the diseased urethra by draining away the urine drop by drop without any effort on the part of the urethra or perineal muscles." When one considers the part that the perineal muscles play in respiration, defecation, micturition, different positions of the body, etc., it is easy to understand how important it is to obtain all the quiet possible in this region when inflamed and to obtain it by as early an operation as possible.

Moreover, where there is abundant perineal exudation, nothing will do any good that does not have in view the absorption of as much of the exudation as possible. The original irritant must be removed without leaving another in its place, which is bound to occur with leakage into a ragged, peri-urethral tear. By free incision there can be no retention of blood, which is almost invariably septic in such cases as the one under consideration; or of urine, which Harrison has shown to be as potent as blood in spoiling tissue.

Of the advisability of combining an internal with the external urethrotomy I will speak later on.

The second case, a Portugese, fifty years old, had had chronic cystitis with occasional exacerbations for three years. Internal treatment had failed to help him; and at entrance he was passing at frequent intervals a stinking, stringy urine. On sounding, no stone was found, and the bladder was carefully irrigated for two weeks with only slight improvement. Under ether a stricture of 20 F. calibre was found in the deep bulbous urethra, which was cut by external incision. On exploring the bladder with the finger, nothing was found beyond a very slight sinking of the floor, which was filled with tenacious pus. After thorough washing, the bladder was drained by a Watson tube. No stricture was found anteriorly. In a week healthy urine was passed, the tube was removed, and with the exception of a temporary cloudiness that yielded to alkalies, convalescence was uneventful, the patient being discharged about three weeks after operation, passing healthy urine at normal intervals through a urethra of 30 calibre.

In this case there was a possibility of a stone undetected by the sound, a prostatic bar or an accompanying pyelitis. Digital examination eliminated all doubts. The bladder, for the time being a pus cavity, could be best drained at the same time that the stricture could be best removed. The latter would in all probability have yielded readily to dilatation, but the slightest break in the wall of the urethra would have merely served as an entrance for septic germs. Had there been no stricture nor cystitis, except what might be due to harboring the results of a pyelitis, it would not have been amiss to drain externally. Had there been a prostatic bar, as seemed likely, a few days' drainage would have been a surgical preliminary to prostatectomy by either route.

The third case, a gaunt, spare man of seventy-two, with no genito-urinary trouble since an attack of gonorrhœa when eighteen years old, began last year to have frequent micturition followed a month ago by retention. Voluntary micturition followed the use of the catheter after a week or so, until shortly before entrance, when he suddenly and without known cause passed considerable blood. When I saw him he was mildly delirious, passing almost pure blood, with ecchymoses over the perineum, scrotum and inner side of the left thigh. A large catheter passed easily into the bladder, if it did not enter a false passage which led into the left thigh. After stimulation the bladder was opened on a staff and the lateral lobes were found by the finger much enlarged, but of themselves offering no permanent bar to a complete emptying of the viscus. Exploration of the latter's walls showed nothing beyond moderate trabeculation. Hæmorrhage, that had been constant up to operation, ceased as soon as an opening was made. No stricture was found. For two or three weeks the patient was hard to control, frequently tearing off the dressings and getting out of bed. The tube was kept in a week; but leakage persisted about three weeks longer, that is, until his physical and mental condition had materially improved. In about eight weeks he went home, passing normally a good stream of healthy urine and taking without trouble a 30 sound.

This case emphasizes several points. He looked and acted like one suffering from toxæmia, and I expected him to die on the table because of his wretched condition; in spite of the extensive laceration there was no pus; the sudden bleeding suggested a secondary hæmorrhage following rough catheterization. Whatever else existed, one would expect to find an œdematous, congested prostate that would best be relieved by drainage. Although in somewhat less than one-third of the cases of enlarged prostates can the bladder be thoroughly explored with the finger, there can be no objection to surgical rest pending a future exploration over the pubes. Fortunately everything in this case could be learned from below. Hæmorrhages from the bladder, whether from growths or lacerations are often best controlled by cystotomy. The endoscope can at times be used through the perineum; it was tried in this case, but the bleeding was too free to allow anything to be seen.

The fourth case opens up a wide field for argument. A carpenter, forty-nine years old, contracted gonorrhœa during the war, but denied any subsequent attacks. Two years ago he noticed a narrowing stream; and for the last six months he has dribbled constantly, day and night. There was the characteristic shrivelled meatus; percussion showed the bladder only two inches above the pubes; and all attempts without ether to pass a whalebone guide failed. The urine unfortunately was not collected, so that the renal condition was not known except in so far as his general good health would indicate sound kidneys. Failing to gain anything by hot baths, opium, etc., he was etherized; and after patient trial with a bunch of filiform guides, one was passed into the bladder, and the posterior bulbous urethra was opened on a grooved sound, thereby freeing the tightest stricture. Carrying the incision backwards a little, the bladder was explored, but nothing pathological found. Of course, upon opening a way, the urine gushed forth before the wound could be plugged; but considering the small degree of distension of the bladder, I did not feel apprehensive of any bad result. The series of anterior strictures of which the smallest measured No. 10 F., were cut to 32 with the Otis urethrotome, and the bladder drained through the perineum after thorough irrigation. Recovery was uneventful; and he returned home in two weeks with a healed perineum, and taking a 32 sound with ease.

One of the objections to treating a deep, permeable stricture by external incision is the enforced rest in bed due to the position of the wound, and the chance of a fistula. But in a case like this, with a clear urine, the patient is confined very little longer than in an internal urethrotomy or a divulsion; and where aseptic treatment is carried out, the risks of a fistula are very small. Had there been renal degeneration an external operation was indicated rather than the opposite, because it is not uncommon for albumen and casts to disappear as soon as backward pressure is relieved; and even with considerable organic change in the kidney, the destructive process must be temporarily abated.

With regard to recurrence, authorities differ. Syme, Moullin, Bickersteth, Harrison and others report autopsies from two to twenty-six years after external urethrotomies, where not only recurrence had not taken place, but the urethra at the point of incision was actually somewhat enlarged, possibly due to the giving away of the cicatrix in the mucous membrane or to the tension of the cicatrix in the peri-urethral tissues. Chavasse says, "When no precautions are taken, I am satisfied that narrowing of the urethra takes place much more slowly after a free external division than after any other means of treatment." Harrison records the largest proportion of permanent cures from external operation in a large series of cases taken indiscriminately, excepting those treated successfully by dilatation.

On the other hand, Keyes maintained in 1889 that the lumpy, irregular, tortuous stricture cannot be cured by perineal section, and recommended total excision of all the morbid tissue, and suture of the healthy divided ends of the urethra, or by transplantation of healthy mucous membrane if possible. But this has been pretty thoroughly tried in France and elsewhere, with, so far as the reports show, no better immediate or remote results than from the simpler operation.

As to the advisability of doing a combined internal and external operation, there can hardly be any question. Undoubtedly, the result of freeing a deep stricture externally is to materially do away with any contractions that lie anteriorly; some observers even claim a total disappearance of the latter when left untouched, if the wound is kept open long enough; but the additional operation is of slight severity. It can be done thoroughly, and asepsis is far more easily carried out and maintained. Harrison goes so far as to advise external urethrotomy for drainage when the strictures are anterior alone. I can find no modern supporters of the method of combining an internal anterior urethrotomy and a posterior divulsion; it is condemned as unsurgical by every writer that refers to it.

In conclusion, the indications that I wish these few cases to emphasize are as follows:

External perineal urethrotomy gives the best bladder drainage; it allows old cicatricial deposits about the urethra to soften down better and more quickly than by any other method; it probably assures the best permanent results in deep strictures; it allows a swollen, lacerated prostate to shrink and quiet down quickly; it pacifies an irritable bladder; it may stop vesical bleeding; it is rarely, if ever, amiss in case suprapubic cystotomy is found necessary, and in many cases it is the best route to the bladder and prostate; it is not contraindicated with internal urethrotomy or where any operation is demanded, in renal disease, and ordinarily with modern asepsis it does not confine a patient in bed over a week; it allows a definite, positive or negative diagnosis in most instances, and in pathological cases it is rarely a difficult operation.

Clinical Department.

A CASE OF BULLET-WOUND OF THE HEAD.[1]

BY A. T. CABOT, A.M., M.D.

Charles H., fifty-five years of age, entered the Massachusetts General Hospital on October 25, 1892. Twenty hours before entrance he had shot himself in the left side of the head with a revolver, the bullet (of 32 calibre) entering just above the left ear. He was a Swede, and talked but little English, but would answer "Yes" or "No" to simple questions.

An examination showed the characteristic wound of entrance of a bullet of the described size. This opening was situated one and a half inches above a line drawn from the external orbital process to the junction of the helix of the ear to the scalp, and was nearly over the centre of this line, being slightly nearer to the ear than to the orbital process.

His eyes were moderately contracted, but reacted equally to light. At the time of entrance his temperature was 101.4°; his pulse was 90, respiration 36. He was seen soon after by Dr. J. J. Putman, who made the following notes:

"The patient shows complete paralysis of the lower branches of the facial nerve, and difficulty in the movements of the tongue; complete paralysis of the right hand and arm. Neither leg is wholly paralyzed, but both are equally weak. The knee-jerk is slight, but present on both sides. He is sensible to a prick everywhere. He seems to understand simple questions, and is apparently intelligent, but is evidently aphasic. His pulse is 84, respiration 27. He can swallow."

Dr. Putnam's opinion was, that the lower Rolandic region, which lay close to the wound, was evidently seriously injured. How much further the damage extended could not be determined on account of the condition of general concussion. It was decided to operate, with the object primarily of establishing drainage.

After thoroughly shaving and cleansing the head, the scalp was reflected, and a trephine opening was made over the point of entrance of the bullet. A probe was then introduced through the opening in the dura mater, and with the head turned on the side, was allowed to run by its own weight along the track of the ball. It slipped along easily until it encountered the falx, when it stopped abruptly; but a little gentle manipulation carried it through the opening, and it then ran by its own weight directly across to the skull on the other side. By taking a probe long enough to project considerably from the skull while it lay in the bullet-track, it was possible to sight pretty accurately the course of the ball. It was found that it had traversed the brain from side to side, with an inclination backward and upward, so that it must have struck the inside of the skull under the posterior part of the opposite parietal eminence.

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[1] Read before the Boston Society for Medical Improvement, December 12, 1892.

The point where the bullet-track reached the skull on the other side being determined as closely as possible by careful observation of the probe, a needle was thrust through the scalp, as a guide to it, and reflecting the flap; a trephine was put on; and when the button of bone was removed, it was found that the probe from the other side touched the dura mater at the centre of the opening. An incision was made in the dura, which had not been lacerated by the bullet. At once, clots of blood and brain-matter began to issue; and a probe, feeling about with great gentleness, demonstrated a cavity in the brain-substance just posterior to the opening. The finger was carefully introduced into this, the bullet was felt, and with a little difficulty was seized and removed.

A drainage tube was introduced into the cavity where the bullet had lain, and another small one was slipped just within the wound of entrance.

After the patient came out of the ether, he was rather more unconscious than before the operation; and, in spite of supporting measures, he gradually failed, and died a little more than twenty-four hours after the operation. There had been so little disturbance of the brain-substance in the manipulations required, that it was a little hard to see why its condition should have been less good after the removal of the bullet. It is possible that the drainage-tubes which were introduced in order to conduct away the fluid, blood and brain-matter with which the sinus was filled, acted as irritants, and it might have been better to content ourselves with a little wick of absorbent gauze.

My reason for reporting this case is, to draw attention to the comparative ease with which the bullet was found by the manipulation adopted. The probe found its way very easily along the sinus left by the ball, and being long, and projecting to a considerable extent beyond the skull, it was possible to sight along it; and by drawing lines around the side of the head and also over the top, and bringing these in exact line with the probe, the intersection of them was marked on the opposite side, and, as the event proved, they were an exact guide to the end of the probe. This method would lead to the detection of the ball in those cases in which it lay close to the opposite end of its course through the brain-substance, and also in those cases where it had imbedded itself in the bone on the opposite side. If it ricocheted and glanced away from the inner table on the opposite side, it would of course be impossible to follow it with accuracy further, the line of its deflection being difficult to determine. Even in such a case, however, the counter-opening at the opposite end of the first bullet-track would be of advantage, as affording drainage.

The post-mortem examination of this brain showed the brain-substance to be more widely destroyed close to the wound of entrance than it was on the further side. Whether this was due to minute bits of bone carried in by the bullet, or due to its greater momentum and possibly greater velocity of rotation in this part of its course, it is not possible to say. It is to be noticed that the paralysis was more marked on the right side, which receives its innervation from this motor area.

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A CASE OF INTESTINAL OBSTRUCTION DUE TO IMPACTED GALL-STONE.

BY LEONARD B. CLARK, M.D., WAVERLEY, MASS.

MRS. L. J. H., aged ninety, was taken sick on September 3, 1892, with an attack of nausea and vomiting, accompanied by abdominal pain and tenderness.

Her previous history was excellent, save that about thirty years ago, for several weeks, she suffered from intense pain in the right hypochondrium and was considered to be beyond recovery. The pain suddenly ceased, however, and soon after there followed copious evacuations of bloody matter. From this illness she made a slow recovery, and was always troubled with more or less pain in the right side after any undue exertion or fatigue. During the last three years a patch of chronic eczema on the right cheek had been gradually degenerating into an epithelioma. For the past year this had begun seriously to affect her strength by reason of the constant pain and frequent capillary hæmorrhage.

The present illness increased in severity, and soon there was total inability to retain food; the abdominal pain required small doses of morphine subcutaneously to control it. A physical examination showed abdominal tenderness, more marked in the right iliac region, where there was some distention and slight dulness upon percussion. These symptoms and signs suggested a peritonitis, due to an appendicitis, or to intestinal obstruction from fæcal scybala, or impacted gall-stones. Appendicitis was thought to be the most probable diagnosis. The age of the patient and her general condition contraindicated an operation, so that a symptomatic treatment was followed. On the 7th she became comatose, and died on the 8th.

A partial autopsy was made, only the abdomen being opened. The omentum was rolled up and adherent to the transverse colon. No trace of a gall-bladder could be discovered; but the liver was closely adherent to the duodenum, about one-quarter of an inch below the pylorus; the hepatic ducts discharging the bile directly into the bowel. The peritoneal surface of the bowels was reddened and covered with flakes of fibrin. Upon following the distended intestine downward, a hard mass was found about eighteen inches above the ileo-cœcal valve; below this mass the bowel was pale and empty. Incision showed the mass to be a gall-stone, as large as a pigeon's egg, firmly impacted in the lumen of the gut. This was the immediate cause of the peritonitis and death. Might not it also have been the cause of the abscess that destroyed the gall-bladder, and formed the adhesion between the liver and duodenum thirty years before?

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, December 12, 1892, the President, Dr. Frederick I. Knight, in the chair.

Dr. M. H. Richardson read a paper on

CASES OF CHRONIC INTESTINAL OBSTRUCTION [1]

Dr. Baker: I am very happy to hear Dr. Richardson's paper. I recall one of the cases he reports, having seen it a few days before he did, and found it as he described, with tympanites and the absence of any tumor. From my experience I would add one word in regard to the fruitlessness, and the increased danger to the patient of attempts which we might make in advance of operative procedures, thereby exhausting the patient. I refer to such means as the long rectal tube or the attempts at high injections and all that sort of thing. I think in the cases such as Dr. Richardson describes, the sooner you get to the operation the better and this without the previous wearing out of the patient by such fruitless means as I have spoken of, and which I am sorry to say I have made use of in one or two such cases.

Dr. J. Homans, 2nd: I should like to ask Dr. Richardson if I understand that he would operate in every case of chronic intestinal obstruction where there has been a complete obstruction for three days.

Dr. Richardson: Yes; but I would want to be certain it was a complete obstruction.

Dr. Homans: If you were certain there had been a complete obstruction for three days, you would advise the operation every time?

Dr. Richardson: Yes, if the patient's strength would stand it.

Dr. Homans: I would not like to stand up and dispute Dr. Richardson's opinion; but I think practitioners like Dr. Minot have seen cases that existed three days and recovery occurred. The obstruction may be caused in various ways. I saw a case last year in which a patient had had complete obstruction for three days, and began to vomit and it cleared up. The patient got well, and died of another disease, and the autopsy showed a small cyst of the kidney which pressed on the intestine just above the sigmoid flexure and had caused the obstruction at that time. It seems to me, in medicine, an absolute rule of that sort is an unwise one. Medicine is not yet an exact science. I have no doubt that Dr. Richardson's rule would offer a better chance of recovery to the patient than not doing anything. I agree that in a great many cases one ought to operate, but I would not make the absolute rule that in every case one should operate. It is the same thing as saying that in every case of appendicitis one ought to operate, which I suppose is also accepted now as the proper thing; but one cannot say that every case of heart disease ought to be treated in a certain way, nor, as it seems to me, that every case of acute intestinal obstruction ought to be treated by operation always. I would like to have the Chairman ask Dr. Minot and Dr. Francis if they have not seen such cases which have recovered without operation.

Dr. F. Minot: I cannot say that I have seen cases of complete obstruction. I have seen cases where the patients have gone many days without a movement of the bowels, and where after treatment an enormous quantity of fæcal matter was discharged; and I am inclined to think in those cases there was not obstruction at all. I have in mind at this moment two elderly ladies. One of them had had most obstinate constipation for months, with evidence of a transverse colon full of pretty hard matter, as shown by percussion. The physician who took care of her at that time had no doubt that the colon was entirely filled with fæcal matter. In that case the administration of cascara in small doses several times a day resulted finally in an enormous discharge, or rather in several large discharges. I questioned the nurse; and she told me the amount discharged would fill several chamber vessels. The other case was quite similar to it. I did not believe there was any mechanical obstruction in these cases, but rather a condition of partial paralysis of the bowel, perhaps induced by want of care on the part of the patient.

Dr. Francis: I do not remember many cases of acute obstruction in my practice, excepting those that were connected with a mechanical cause. When I was physician to the lead-works, we used often to have cases of obstruction, and in those cases we used to give medicine till it operated; and the amount of croton oil and Epsom salts that patients would take would surprise any person who was not accustomed to seeing those cases. Generally, after those medicines began to operate, they operated violently; and in cases that had been four or five days without a movement, it seemed as though the intestine could not contain so much as was discharged. The only case of obstruction that I call to mind just now in which the diagnosis might have been a mistaken one was where a person had eaten a great quantity of blackberries, and he appeared to have an appendicitis. For at least three weeks he was passing blackberry seeds after we once got his bowels moving; and I think it was all summer that there seemed to be an obstruction in his bowels, so much so that I aspirated the colon two or three times to relieve him. He lived several years, and his death was caused by something which had nothing to do with his abdominal organs. I think I should rather subscribe to Dr. Richardson's idea as a general rule, that it was better to operate and find out what was the matter.

Dr. Conant: I agree heartily with what Dr. Richardson has said, and I have had two cases recently, which to my mind have given emphasis to what he has so admirably stated. I was called about fifteen miles out of the city to see a case where there had been complete obstruction, fæcal vomiting; nothing had passed by the rectum for four or five days. The obstruction apparently was situated in the right iliac fossa; and while enlarged gall-bladder was thought of, it was excluded because there was no jaundice, and the opinion was given that it was probably some malignant disease, either sarcoma or carcinoma, in the region of the cæcum, and a laparotomy was advised as an exploratory measure. That was refused by the family. The woman died within a comparatively few days afterward; and much to my disgust, a large dilated gall-bladder was found, and something like 150 stones taken out. I think if they had consented to a laparotomy, there would have been no question that the woman would probably be alive at the present time.

One other case, which I saw in Natick within two weeks, was a case of more or less chronic disturbance of the bowels for fifteen years. The man said he had not had a normal stool for fifteen years. He was taken one Sunday night with extreme pain in the abdomen, largely about the umbilicus; and I saw him three days afterwards. He had been able to retain nothing on the stomach for the last forty-eight hours, had had no movement for a week; and the question seemed to point to malignant disease, as the age was about sixty. With the consent of the friends, we went in through the median line; and I found the largest sigmoid flexure I ever found, with an annular ring and bands of adhesions constricting. On opening the abdomen I was very much disgusted to find that the lower end of this sigmoid flexure was gangrenous and had already exuded part of its contents into the abdominal cavity. There was not much to do for that man; he lived about fifteen hours after the operation. I think these two cases simply strengthen the stand taken by Dr. Richardson. If these cases could have been seen earlier and a laparotomy done, it seems to me both of them would have had good chances of recovery from the condition in which the patients were found at the time that I saw them; and I have no doubt at the present time they would be alive and enjoying a fair amount of health. If we treat a case where we feel sure there is complete obstruction, not constipation, with large doses of salts and croton oil and things of that nature, we are working in the dark; and it is very much wiser to make an exploratory laparotomy and know absolutely what we have to deal with. I most heartily approve what Dr. Richardson has said. It seems to me any other measure at the present time would be a step backward.

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[1] See page [illegible] of the Journal.

Dr. Cheever: I should like to ask Dr. Richardson if he means by Littré's operation, operation in the left groin?

Dr. Richardson: Yes, sir.

Dr. Cheever: I had the impression that name had been given to the right. Perhaps I am mistaken. Amussat's operation was in the loin, I think.

Dr. Richardson: I have always heard it applied to the left inguinal colotomy.[2]

Dr. Cheever: You select that point if possible?

Dr. Richardson: Yes, sir.

Dr. Cheever: I should like to ask Dr. Richardson if he can state with any accuracy from memory whether he has known a patient to die from exploratory incision of the abdomen.

Dr. Richardson: I have been looking that subject up in my own cases very recently. I have never known a patient to die from a simple exploration where there was not already some serious disease existing. I have stated elsewhere, and have been confirmed by Dr. Homans, there is a considerable mortality after explorations in advanced malignant disease. In explorations for cancer of the stomach, where nothing radical could be done, I have had one death due to the operation itself. Where I have opened the abdomen and found nothing there has been no bad result whatever. I think the mortality in opening the abdomen for simple operations like normal ovariotomy and for exploration where no organic disease is found, is very small, and that the danger is no greater than in parturition.

Dr. Cheever: I understand by exploratory incision in cases of cancer that you simply opened the abdominal wall and looked in or felt in, and closed it?

Dr. Richardson: Yes; except when I have made an artificial anus for obstruction.

Dr. Cheever: In these cases of cancer that died you looked in and closed it, and they were very fatal?

Dr. Richardson: Yes, sir; the mortality is considerable.[3]

In answer to Dr. Homans I would like to say that I do not mean to apply a general rule to every special case of intestinal obstruction, or any other disease. His question assumes that an obstruction existed. I do not think an experienced surgeon would often operate, or often be deceived by a fæcal obstruction, or by an obstruction of two or three days' duration not dependent upon some very serious cause. You could not call an obstruction of three days a chronic obstruction, and I am not discussing acute obstruction. I wish to consider those cases of complete stoppage which come on gradually, and which are not usually preceded by symptoms of organic disease. I have heard so much said against exploring in these cases that it seems to me worth while to say something in favor of this procedure. I do not believe that any man, even the most experienced, can demonstrate so clearly the hopelessness of intestinal obstructions that we are justified in leaving the patient to die without an attempt to relieve him. We may all be mistaken at times, and I know of several cases where an unfavorable prognosis had been given in which a perfect and permanent recovery followed an operation originally considered hopeless and unjustifiable. Take acute obstruction, for example: I have just sent to the Journal a table of forty-three cases of acute abdominal disease, of which thirty-three were fatal. Among them were seven fatal cases of acute obstruction from various causes. Some were operated upon and some were not, but in most an early operation would probably have succeeded. Now, if you open the abdomen for symptoms suddenly appearing in robust health, and find nothing, the patient will probably recover, having run the slight risk incident to simple explorations undertaken under such circumstances. Such a case I had this summer with Dr. Cutler, where we examined the intestine from one end to the other and found nothing. The patient recovered not only from the exploration but from the obstructive symptoms. One or two explorations will be useless, but you will save a large number of patients. I refer now to acute obstructions. In the chronic obstructions once in a while a condition will be found which you can easily remedy, and occasionally a cancerous stricture which you can excise. Dr. Bull told me of a case of this kind (not as yet published, I believe) where he excised a malignant ring, sutured the bowel, and the patient has remained well ever since. This operation was performed at least five or six years ago. It seems to me it is our duty to present the facts to the patient. If he does not care to take the risk, it is his own lookout. We ought to advise that on the whole there will be less suffering if we operate than if we leave the case to itself.

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[2] "Colotomy was first proposed by Littre, in 1710. His proceeding was, to open the sigmoid flexure of the colon by incision through the abdominal walls in the left inguinal region." Quoted from Mem. Acad. Sc., Paris, vol. x, p. 36, by J. Greig Smith, Abdominal Surgery, Second Edition, p. 458.

[3] I recall several fatal cases where a rapid survey was made of the abdominal contents and the wound was immediately closed. There was one case of cancer of the liver, two of cancer of the pancreas, in which, however, the gall-bladder was opened, and a fourth of supposed foreign body in the stomach. Death in the last case was thought to have been caused by the drinking of a solution of corrosive sublimate, with suicidal intent. In another case death followed simple exploration for tumor of the liver. In a sixth case a fatal result followed the exploration of extensive cancerous disease of the mesentery. This, however, was more than a simple exploration, because by the attempted delivery the cancerous mass which was quite friable was extensively torn, and there was considerable hæmorrhage. Such complications are likely to arise in all simple explorations, and their dangers should always be considered in this connection. I am unable to state the exact number of exploratory laparotomies which I have performed, but I believe the mortality will not fall below twenty per cent. in cases of advanced organic disease.

Dr. Cheever: Do I understand that the thirty-three cases referred to, were such cases as twist, volvulus and invagination?

Dr. Richardson: There were seven acute obstructions, including twist, intussusception, bands, etc. The other cases were mostly acute peritonitis from inflammations of the vermiform appendix.

Dr. J. C. Munro read a paper on

SOME INDICATIONS FOR EXTERNAL URETHROTOMY.[4]

Dr. Cheever: I should like to ask the reader if any instrument was kept in the perineal wound?

Dr. Munro: Yes, in every case, for a few days, at least.

Dr. Cheever: In about a week they got up?

Dr. Munro: Yes. The favorable ones I let up as soon as the perineal tube was taken out; and in three the wound healed within a week.

Dr. Cheever: And they passed water by the natural passage as soon as the instrument was taken out?

Dr. Munro: In increasing amount. A sound was passed through the entire length of the urethra on the third day after operation.

Dr. Cheever: I should like to add my testimony to the value of external openings. I have always practised them all my life; and I can say that I never have known a fatal result, unless there was found to be organic disease of the kidney; and naturally in hospital practice the cases which have been presented have been often of a most desperate class in the habits of the patient and in the extent of the disease.

Dr. A. Post: I should like to ask Dr. Munro as to the amount of reaction that followed these operations — rise of temperature?

Dr. Munro: None at all. There was no rise of temperature that I recollect.

Dr. Post: Any hæmorrhage?

Dr. Munro: None.

Dr. Post: I should like to ask something about the antiseptic precautions; what he carried out during the time the tube was in the bladder.

Dr. Munro: Irrigation with a four per cent. boracic acid and bichloride dressings; and in some I gave either sandal-wood oil or alkalies internally.

Dr. Post: Do I understand that the patient passed no water through the perineum immediately on removal of the perineal drainage?

Dr. Munro: In the most favorable cases my impression is that the wound stopped leaking by a week after the tube was out, passing water by the penis.

Dr. Post: I agree so thoroughly and entirely with the ideas of the reader that there is comparatively little left to say. He has mentioned several different reasons for the operation; and the variety of cases to which it can be applied is very great. It is really wonderful the slight reaction that follows that operation. I think I may say it is the rule to see but very little rise of temperature, though I must say in cases where the perineal tube has been fastened in I am a little more apt to see a slight rise of temperature than Dr. Munro has seen. I cannot believe it is always necessary to fasten in the tube. I have felt it was a source of irritation and made it uncomfortable very many times; that the patient did just as well without the tube; the only thing being that for the first day or two the patient must have a bed-pan every time he wants to pass his urine, but the old wet bed we used to see has entirely passed away. Patients can be kept just as dry as ever, and the rapid healing is something very wonderful. My last external urethrotomy passed no urine at all through the perineum. Allowing patients to go about with a perineal wound still open, is something of an innovation on the older practises. I do not think I have allowed my patients to go about quite so early as Dr. Munro apparently does. Dr. Munro was not fortunate enough to have any cases in which he could pass no instrument at all into the bladder.

Dr. Munro: One.

Dr. Richardson: I understood Dr. Munro to advocate perineal section or external urethrotomy in all cases of deep stricture?

Dr. Munro: No; In cases not amenable to gradual dilatation.

Dr. Richardson: Discarding divulsion altogether?

Dr. Munro: Yes.

Dr. Richardson: Dr. Cheever has never, I understand, seen deaths from external urethrotomy. I suppose he does not mean to include cases of stricture with urinary extravasation?

Dr. Cheever: Yes, sir; except where disease of the kidney was found.

Dr. Richardson: I am surprised to hear this statement, because I have always undertaken a perineal section for stricture and urinary extravasation with the belief that the mortality is very great from the existing local conditions alone. Whether due to kidney disease or not it has always seemed to me that the mortality in urinary extravasation is necessarily great. The operation of divulsion I have performed a great many times, and in my experience the mortality is insignificant. In regard to the relative permanency of dilatation and cutting in urethral stricture, I believe that the recurrence is not so rapid after external urethrotomy as after divulsion, though it may be quite as complete; yet I am convinced that divulsion offers in many cases a very satisfactory urethra. I have never performed external urethrotomy except where I could not pass a guide. I am very glad to hear this paper and the opinion of the gentlemen present, because it seems to me that under certain conditions external urethrotomy is preferable to divulsion, more especially where free and continuous drainage is desired.

Dr. Cheever: So far as I can recall, I would repeat the statement I made that I can recall no death after free incisions, letting out urine and urinary extravasation, unless subsequently there was proved to have been decided organic disease of the kidney. This matter was impressed quite strongly on my mind from the fact that we all see very desperate cases. I do not know but one might say that an extreme case of urinary extravasation almost equals in its severity and threatening symptoms those of intestinal obstruction. The prostration is very great; the chance of sloughing tissues is considerable. The patient is suffering largely from the results of long retention of urine, from distended bladder, from the suffering and prostration that that induces, and from extravasations into the perineum and scrotum, penis, upon the pubes, and I have seen the emphysema of the extravasations and decomposition extend as high as the umbilicus, and yet those cases have recovered, and the point that I wish to make is that the moment that you get a big opening into the bladder, the relief is almost as marvellous as in cases of intestinal obstruction. Moreover, one of these cases that looks so terrible the night you operate, within the next twenty-four hours is entirely shrunken and gone down. The scrotum has lost its swelling, the penis lost its swelling; it is almost ludicrous to see the changes that the parts have undergone, and the reaction of the system from this relief is generally very intense, and even if the patient should pass into a state of delirium tremens many of them recover unless organic disease of the kidney is found behind. I have had a good many of these cases, and unless, on looking back over the matter, I should find I was mistaken in my statement, my present belief is that all the deaths were traced to organic disease of the kidneys as complication.

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[4] See page [illegible] of the Journal.

Dr. Cabot said that he thought one very important advantage of external urethrotomy over divulsion or any other internal operation was that it enabled you to operate on both the floor and the roof of the urethra; and this he considered of importance, as you are more likely to get a canal which does not contract, or does not seriously contract, afterwards, if the incision has been made both on the floor and on the roof. He said that always after opening the urethra below and dividing the stricture, it was his practice to pull the wound open and see whether there were any bridles of tissue across the roof of the canal. If these were found, he cut them thoroughly down through the whole thickness of the stricture tissue.

He considered external urethrotomy, when done under antiseptic precautions, in cases where it was not an operation of emergency but simply an operation of choice, and in cases where there was no extravasation, as an operation with practically no mortality. He thought, however, that the wound did take a little longer to heal than after a simple divulsion in properly selected cases.

In defining what he meant by properly selected cases, he said that in the deep urethra he had often found strictures that were very tight, in the sense that they were of very small calibre, and yet in which the constricting band was so slender as to be at once and readily broken by the divulsing instrument.

When using Bigelow's divulsor, it is easy to tell whether the stricture has been really broken, or only stretched; for if it is merely stretched, the divulsing instrument is held on its return. He said that he had frequently tried the experiment of passing a small divulsing instrument through one of these close strictures, and then immediately following it by the use of a sound of very much larger calibre, and had found that the sound passed with perfect ease, showing that the stricture was really removed.

In those cases where the stricture really disappears after moderate divulsion, he said that he had found the result a very perfect one; and in two urethræ which he had seen in patients, who had died of other causes within three or four weeks of the operation, the mucous membrane was as smooth at the place where the stricture had previously existed as in any other part of the canal.

Where, on the other hand, he found that the divulsing instrument was firmly held during withdrawal, showing that the stricture was merely stretched, he believed it to be a better plan of operation to make an external urethrotomy, with the purpose of entirely dividing the strictured area. Even in this case, the partial divulsion helped in the subsequent operation by allowing of the passage of a good-sized guide.

Dr. Munro: With regard to the perineal drainage-tube that Dr. Post spoke of, I am glad to hear him say that it is not always necessary. In two of these cases it might have been dispensed with, but was left in for two or three days. In the other cases I wanted it for irrigation.

In regard to getting patients out of bed, soon after operation, it seems to me that when they are over the primary upset from the ether, etc., with a small wound in the perineum, they recover faster by being up and dressed than the cases that remain in bed until healing is established.

I cannot very well agree with Dr. Richardson on the question of divulsion. He approves of external urethrotomy for drainage, and to me that is the key-note to the operation. The deep urethra is a sewer-trap. If one breaks through the mucous membrane in that region, I cannot see why everything septic within reach should not lodge there and set up peri-urethral inflammation. According to Dr. Cabot, some cases of rapid divulsion show no scars after death; but I cannot find any such recorded in literature, whereas there is a large number of autopsies on record many years after external urethrotomy for pathological stricture where no recurrence has taken place.

One writer mentions that in deep strictures the cicatrical tissue is almost entirely on the floor of the urethra, and that it is not necessary in many cases to touch the roof of the urethra. If a large divulsor is put in it must tear in every direction. The mortality from operation in external urethrotomy, according to the records in several thousand cases, is about three per cent.

Dr. Cabot showed specimens from a case of

BULLET-WOUND OF THE HEAD.[5]

Dr. Cheever asked whether it was a silver probe which was used, and whether Dr. Cabot had seen the aluminium probe?

Dr. Cabot said that he had used a silver probe; that he had seen the aluminium probe, and should think that for this purpose of following a soft-walled sinus through the brain, it would be rather more delicate than the silver probe.

Dr. Cheever asked if irrigation was used for this wound, and whether there was any hæmorrhage?

Dr. Cabot said that he simply put in a tube; that there was not much hæmorrhage from the brain, but there was a little from one of the arteries of the diploe, which required plugging.

Dr. Cabot also showed

A GALL-STONE,

removed from a man thirty-two years of age.

The patient, referred by Dr. E. S. Boland, of South Boston, had had a number of attacks of biliary colic in the past two years; and since April, 1892, these attacks had come so frequently that he had not been able to work for more than half the time. About the middle of October a severe attack came on, with intermittent pain; and this continued until the time of operation.

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[5] See page 213 of the Journal.

The incision was made in the usual place, parallel with the lower edge of the ribs. The gall-bladder was not distended. It was opened; and a calculus about the size of a robin's egg was removed from the lower end, where it pressed into the cystic duct. The end which fitted into the duct, was rounded, while the other end was covered with beautiful crystals of cholesterin. The patient made a perfectly good recovery, and the sinus closed at the end of forty-one days.

Dr. M. H. Richardson showed a specimen of

TUBERCULAR SALPINGITIS.

Both tubes were of enormous size, each weighing one and one-half pounds. The patient (N. G.) was single, but about to be married; age twenty-four. She began to have pain in the back about a year ago, accompanied by a swelling in the right side of the abdomen. There had been a gradual enlargement until the abdomen was filled with an irregular mass, freely movable, intimately connected with the uterus. No menstrual disturbance. Diagnosis, multiple fibroid, confirmed by all the men who saw the case; seemed so evident that the uterine sound was not used. She was told the serious nature of a hysterectomy, and advised to postpone operation until the symptoms became more distressing. She insisted on operation, "so that she could be married." On opening the abdomen, two symmetrical, enormously dilated tubes presented, which were removed entire without difficulty. The peritoneum was studded with nodules suggesting tuberculosis, and there was serum in the abdominal cavity.

Dr. Mallory reported the nodules to be miliary tubercles. "The tubes are 18 and 19 cm. in length, circumference 24 cm. each, weight $1\frac{1}{2}$ lbs. each. Thin walls filled with thin, greenish-yellow pus; peritoneal surface studded with gray miliary tubercles." The patient made a good recovery and remains well (December, 1892).

Dr. Richardson also showed a specimen of

HÆMATOCELE,

removed from a man of sixty-five a few days ago. He had been tapped several times for hydrocele. The fluid removed at the last tapping (March 8, 1892), was colorless and slightly opaque, probably containing serum. Since that time there has been a reaccumulation and much discomfort. The sac of the hæmatocele was dissected out, and with it the testicle. A good recovery has followed. The walls of the cyst were very much thickened, and its contents were a light brown semi-solid mass, evidently old blood-clot.

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THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine, February 7, 1893.

Dr. Alfred Wiener presented

A SUBACUTE CASE OF UNILATERAL BULBAR PALSY.

The patient was a young man, aged seventeen years. Family history negative. He was in good health up to two years ago, when he had a severe attack of perityphlitis, from which he recovered after five weeks of illness. He has suffered from catarrhal pharyngitis more or less ever since childhood. A year ago last spring the glands on both sides of his neck, in the region of the sterno-cleido-mastoid muscles began to enlarge. In the summer of the following year an abscess formed in one of these glands on the right side, and this was opened. Soon after this, the remaining glands began to create so much discomfort that those on the right side were removed, together with a large portion of the sterno-cleido-mastoid muscles. On September 1st of the same year the glands on the left side were removed. These, under the microscope, proved to be of a tubercular nature. In the latter part of November, 1892, it was noticed that the patient's tongue, on protrusion, deviated to the right side; this was followed by hoarseness and difficulty in swallowing, and later on by distinct atrophy of the middle half of the tongue. An electrical and laryngoscopic examination showed that there was complete unilateral palsy on the right side, involving the tongue, soft palate, pharynx and larynx, together with a paralysis of the sterno-cleido-mastoid and upper portion of the trapezius muscles. The lesion in this case, Dr. Wiener said, may occupy one of three positions: (1) A point just external to the exit of the pneumogastric and spinal accessory nerves from the skull, namely, just behind the angle of the jaw; (2) on the surface of the medulla; (3) it may be nuclear. All the facts in this case lend support to the view that the lesion is a tubercular one, situated at the nuclei of the nerves which govern those palsied parts. Those groups of cells form the conjoined nuclei of the spinal accessory, vagus and hypoglossal nerves and a very localized lesion in this part of the medulla is sufficient to affect them. The involvement of the trapezius and sterno-mastoid muscles is probably due to injury to the nerve supplying them, while the laryngeal symptoms may be accounted for by a paralysis of the stylo-hyoid muscle (due to pressure from an enlarged gland) or by the antagonistic action of the muscles on the left side of the throat over the paralyzed muscles on the right side.

Dr. George W. Jacoby presented

A CASE OF COMPLETE ATROPHY OF THE TONGUE WITH OTHER NUCLEAR SYMPTOMS.

The patient was a female, age thirty years; married nine years. She has had three children and two miscarriages. During the past fourteen months she has not menstruated. Her mother died of pulmonary tuberculosis at the age of thirty-eight. Her husband's sister recently died of consumption, and during her illness the patient nursed her. During December, 1892, the patient was treated for loss of sight, which had come on gradually in both eyes, reducing vision to such an extent that she required some one to lead her. This loss of sight was found to be due to a slight atrophy of both optic nerves, and under internal treatment the symptoms disappeared. The patient has also suffered from violent headaches, which disappeared with the loss of sight. Three weeks ago she noticed a difficulty in swallowing and speaking. She vomited every morning on rising, even without eating. At the previous examination it was found that the tongue deviated towards the left, and there was marked hemiatrophy of that side of the tongue. The uvula hangs to the left, and there is paralysis of the left side of the soft palate. The patient has enlarged glands in the neck. There is at present complete atrophy of the tongue and soft palate. There is also motor ocular paralysis on the left side, involving the internal and external muscles. Dr. Jacoby presented the case as one of progressive nuclear paralysis.

Dr. B. Sachs said he saw Dr. Wiener's patient some time ago. The idea of a peripheral lesion was considered for a short time only, and the conclusion was soon arrived at that the basilar site was the more probable one. The lesion is no doubt of tubercular origin. A chronic nuclear condition must be excluded, on account of the rapid progress of the symptoms, and because they have remained strictly unilateral. Dr. Jacoby's case he considered a very interesting one, although he felt rather inclined to doubt the diagnosis, because of the rapid progress of the symptoms. They seemed to indicate the presence of some active lesion, either specific or tubercular.

Dr. Theo. H. Kellogg read an interesting paper on the subject of

MODIFICATIONS OF RESPIRATION IN THE INSANE.

He gave a systematic description of the various forms of respiratory changes found in the insane. To facilitate the study of these modifications he grouped them as follows: *A*. Modifications of respiration as regards frequency, depth, rhythm and sound. *B*. (1) Spasmodic expiratory modifications, such as occur in laughter, crying, sneezing, coughing and snoring; (2) Spasmodic inspiratory modifications, as in singultus, chasmus, and laryngeal crisis. *C*. Dyspnœic modifications.

Dr. William M. Leszynsky presented

A NEW FORM OF ELECTRODE,

to be employed for diagnostic purposes.

REPORT OF A CASE OF SARCOMA OF THE CERVICAL SPINAL CORD; AUTOPSY.

Dr. C. A. Herter read the history of this case, and presented some photographs and microscopical specimens to illustrate it. The patient was a male, age twenty-nine; single; a merchant by occupation. He was in good health until the beginning of the present illness, barring occasional attacks of chills and fever, and repeated and prolonged colds which ended in cough lasting several weeks. The patient has never used alcohol, and his habits have always been in every respect exemplary. The family history is negative. In May, 1891, the patient noticed a loss of sensation, beginning as numbness, in the ulnar side of the little finger of the right hand. This sensory loss soon extended to the entire little finger, and thence to the ring finger and the ulnar side of the middle finger. At the same time there was an upward extension of anæsthesia along the hand. Three months from the onset the anæsthesia had passed up the ulnar side of the forearm and arm and had reached outward over the hand as far as the thumb. The patient also began to have pain on the ulnar side of the right forearm and hand; slight and occasional at first, later very severe and of increased duration. This was followed by loss of power, first in the flexors of the fingers, then in those of the forearm. About five months after the first symptoms were noted, there developed atrophy of the first dorsal interosseus. This wasting soon extended to the muscles of the thumb and hypothenar eminence and to the flexors of the forearm. About the eighth month the pain abated very much. During the period of severest pain, the entire right arm became œdematous. An electrical examination made in June, 1892, showed a loss of faradic irritability in the right arm and in all the extensors and flexors of the wrist and interossei. Tactile and pain sense were entirely lost along the ulnar border of the arm to the axilla, and were greatly impaired along the radial border as high as the shoulder. Temperature sense (which was only roughly tested) appeared to be quite lost in the arm. There was almost an entire loss of muscle sense; the patient had no sense whatever of the position of the fingers, hand and arm. The surface of the right arm was much colder than that of the left. It was pale in color. In the left hand and arm, power and sensation were apparently normal. Both legs were a little weak. Equilibrium was maintained without any difficulty. The knee-jerks were increased, the exaggeration being more pronounced on the right side. The power of the sphinctors was unimpaired. There was no vertebral deformity, and no tenderness on pressure over any of the cervical or upper dorsal spines. Sight was unimpaired. The pupils reacted normally to light and during accommodation. The right palpebral fissure was distinctly smaller than the left, and the right lid drooped a little. An examination of the chest showed dulness on percussion over the upper part of the right side. Temperature 101°, pulse 100. Respiration about 30 per minute. In the course of two weeks after this examination, the right leg became much weaker than before, and pain and numbness extended gradually down the entire left arm. Loss of power was also detected in the left leg. There was temporary retention of urine. In July, 1892, a tense swelling was observed over the outer end of the right clavicle and extending down into the axilla over the front of the shoulder. In the course of two weeks this tumor grew to the size of the child's head, became very tense, and was covered by greatly distended veins. The patient grew rapidly worse. Incontinence of urine and fæces set in, and the breathing became labored, owing to paralysis of the thoracic muscles. There was total loss of sensibility extending as high as the crest of the ileum upon both sides, with impairment of sensibility bilaterally as high as the third rib. Large bed-sores appeared; and on September 12, 1892, sixteen months after the beginning of symptoms, the patient died from exhaustion and respiratory failure.

A partial autopsy was made, and a mass removed from the clavicle and another from the upper and posterior part of the thoracic wall. A number of tumors occupied the posterior and inner aspects of the right upper chest, displacing the lungs. Some of these masses appeared to grow from the clavicle, others from the vertebræ, but their relations could not be distinctly made out. The specimen obtained from the spinal cord was five inches long, and extended from the eighth cervical to the seventh dorsal segments, both inclusive. Sections were made from the eighth cervical, and first, second and third dorsal segments. The tumor involved at this level nearly the entire right half of the cord, and encroaches anteriorly upon the left anterior column of the cord. Posteriorly, it did not pass quite to the posterior horn. The ganglion cells in the region of the tumor have undergone partial or entire destruction, or in some instances have been apparently replaced by small groups of spindle-shaped connective-tissue cells. In structure, the tumor is an exceedingly vascular spindle-celled sarcoma. Sections made from the mass obtained from the clavicle and thoracic wall showed them to be fibro-sarcomata.

Regarding the diagnosis of the case, Dr. Herter said that while the anatomical diagnosis presented no difficulties, the pathological diagnosis was made with some hesitation. The presence of signs of consolidation over the lung, muco-purulent expectoration, hectic temperature, rather rapid emaciation and night-sweats, all suggested a tubercular process; and the diagnosis of a secondary tubercular tumor of the cord was thought to be justified. The alternative diagnosis was sarcoma, but this appeared improbable. An examination of the sputum was not made. Twenty-six cases of sarcoma of the spinal cord collected by Dr. Herter, and compared with cases of massive tubercle of the cord, brought out a number of facts, some of them of practical interest. They are: (1) Sarcoma of the spinal cord occurs with about equal frequency in the two sexes; of the 26 cases, 14 were in females, 12 in males. (2) Sarcoma of the spinal cord is essentially a disease of adult life; of 21 cases, only two occurred before the twentieth year, 17 occurred between the ages of twenty and fifty years. Massive tubercle, on the contrary, is a disease of adolescent and early adult life; 15 out of 24 occurred between the fifteenth and thirty-fifth year and five before the fifth year. (3) Etiological factors in the production of sarcoma of the spinal cord are practically unknown. In one case only (a fall on the ice) does it appear to have exerted any influence, and even here the influence may be questioned. (4) In three cases of sarcoma, the first symptoms appeared during pregnancy. (5) Pain appears to be the earliest and most prominent symptom in four-fifths of the cases. Speaking generally, the early symptoms of sarcoma of the cord are mainly of an irritative and not of a destructive nature. (6) In sarcoma, the course of the disease is, in general, much slower than in tubercle. In all of the above cases, the diagnosis was confirmed by autopsy. Glioma were excluded.

Dr. B. Sachs said he was much interested in Dr. Herter's attempts at differential diagnosis between sarcoma and tubercle of the cord. The rapid progress and greater destructiveness of the latter disease is probably the most important symptom we have. In a case that came under his observation eight years ago, he diagnosed probable sarcoma and found tubercle, and in that case the solitary tubercle of the cord was positively the original deposit of the disease. Tumors of the cord, Dr. Sachs said, are of extreme rarity.

Dr. Mary Putnam Jacobi referred to a case of sarcoma of the cord in a child, reported by Dr. Gee (St. Bartholomew's Hospital Reports) in which the diagnosis was confirmed by autopsy. In a case reported by her last autumn, the symptoms very closely resembled those in Dr. Gee's case. There was a predominance of the irritative over the destructive symptoms and unilateral paralytic symptoms. She made a diagnosis of sarcoma of the cord, and before death a large tumor appeared in the cervico-dorsal region. No autopsy was permitted.

Dr. Frederick Peterson stated that sarcoma in general was more common under the age of thirty than above that age.

The **President** said, that, while sarcoma in general is more commonly met with in persons under the age of thirty, yet sarcoma in the nervous system is decidedly more frequent in adult life. He has recently collected 600 cases of tumor of the brain (300 in adults and 300 in children); and among these there were 34 cases of sarcoma in children and 157 in adults. He agreed with Dr. Sachs's statement that tumors of the spinal cord are very rare. He was much interested in the collection of cases made by Dr. Herter, and thought it would be well to carry the investigations further, and determine how many of these cases would have been suitable for operative interference.

Dr. Graeme M. Hammond referred to the symptoms of Dr. Herter's patient on the side of the body, opposite to that invaded by the growth. These he thought, might have been due to degenerative changes in the opposite side of the cord, caused by a cutting off of the blood supply, or the commissure fibres may have been interfered with enough to produce the symptoms.

The discussion was then closed by **Dr. Herter**. He stated that there was only partial interference with the nutrition of the opposite side of the cord. As regards operation, he did not see the case until a very late day, and it seemed to him that it was not an operable case. The patient had been seen by an eminent neurologist of this city during its earlier stages, and had been treated by electricity, with the idea that the trouble was a neuralgic one.

DISCUSSION ON THE MOTOR DISTURBANCES OF THE HEART OF NERVOUS ORIGIN.

Dr. George W. Jacoby read the first paper on this subject. He stated that in a large number (probably in more than one-half) of the persons who consult us on account of some motor disorder of the heart, no anatomical lesion is clinically discoverable, and no mechanical cause can be found. In such cases it is reasonable to seek for the cause of the altered function in some disorder of the complicated nervous apparatus of the heart. The subject may be conveniently divided into intermittent, irregular, abnormally slow (bradycardia) and abnormally frequent (tachycardia) heart's action.

Intermittency may be true or false; in the latter form the pulse fails, but the heart is regular; while in the former the heart-beat is actually dropped. In irregularity of the heart's action the number of pulsations varies from minute to minute, or the pulsations vary in height and tension. These forms of arythmia may be persistent or only temporary; when persistent, Dr. Jacoby said, they are probably due to some organic disease of the heart, whether such can be detected or not; when they are temporary, they are either dependent upon defective blood mixture or are purely neurotic. Toxic influences associated with sexual excesses, and with the excessive use of tea, coffee, tobacco and alcohol, he has found to be potent in the production of arythmias. Intermittency may be due to even the moderate use of alcohol.

Slow pulse, or bradycardia, is a term applied in cases where the pulse falls below 60 per minute, or, according to other writers, below 40. Slow pulse should be regarded as a symptom only and may be due to a variety of causes. If we make use of the term bradycardia at all, we should limit it to such cases in which the infrequency of the pulse is due to a disorder of innervation. A slight reduction in the frequency of the pulse is very common in disturbances of the digestive tract.

In paroxysmal tachycardia the attack is always sudden in its onset, and usually unexpected. The pulse is increased from normal to 180–240 per minute, or even to 300 per minute, according to some observers. There is no irregularity of rhythm nor intermittence. The heart beats in a strong and energetic manner, and in direct contrast to its action is the extreme diminution of arterial tension. The ceasation of the attack is as sudden as its onset. The paroxysma vary in duration from a few minutes to several hours, and occasionally last even for days. The intervals between the attacks are irregular. During an attack the excretion of urine is generally diminished; it may be followed by the passage of a large quantity of clear, limpid urine. The etiology of these cases is obscure. Psychic influences, fright, errors of diet, bodily exertion have all been assigned as causes. It is an affection of adult life; this we can say positively, and the best established causes are bodily and cerebral overwork.

In concluding his paper, Dr. Jacoby referred to the pathology of these cases, and gave a brief review of the various theories put forth regarding the nervous mechanism of the heart. The assumption that we are dealing with a bulbar neurosis in these cases appeared to him to be the most probable one.

DR. J. W. BRANNAN said that some years ago, when he was led to investigate the subject of the pathology of tachycardia, he was inclined to believe that it was due to a bulbar neurosis; but he afterwards rather favored the suggestion made by West, to which Dr. Jacoby referred, that the cause of the trouble was to be found in the heart muscles. Up to four years ago, only four autopsies were recorded, and in all of these the nervous system was found intact; in only two the heart muscles were examined, and in both cases an extensive development of fibrous tissue was found in the wall of the left ventricle. This, as some observers have said, may have been due to the rapid heart-action. In another case where the disease existed only three months, there was an extensive development of fibrous tissue throughout the wall of the left ventricle, in the trabeculæ and the papillary muscles. The only objection to that theory lies in the fact that there are so many cases of myocarditis without any history of tachycardia. This has been accounted for by the explanation that certain regions of the heart muscles are tolerant, while other regions are intolerant, and with the latter we get tachycardia. The intolerant regions are especially found in the intraventricular wall and the papillary muscles.

DR. MARY PUTNAM JACOBI referred to Gaskell's experiments in connection with this subject. She stated that the suggestion made that an apparently functional disorder may constitute the precursor to a more serious condition seemed to her extremely interesting and important. Such a case was recently brought to her observation. The patient was a woman who for three years, during the period of the menopause, was supposed to be very hysterical. She suffered from insomnia, night terrors and other symptoms that were considered purely neurasthenic, as no organic disease was found. She finally had an attack of hæmorrhage in the pons.

DR. HERTER referred to a case of paroxysmal tachycardia which he has had under observation for two years. The man is a sexual neurasthenic, and suffers from intestinal indigestion. Each attack lasts four or five hours and is generally induced by some indiscretion of diet. The urine passed after such an attack contains in a large amount the products of intestinal putrefaction. It is an interesting question whether the attacks are due to such poisonous substances, or perhaps to mechanical causes — such as the distention of the colon, or other parts of the intestinal tract.

DR. A. D. ROCKWELL said he is of the opinion that functional diseases of the heart sometimes lead up to organic diseases, but not very often. These functional heart troubles ofttimes give more misery than a serious organic disease. If we have a disturbed rhythm of the heart which is paroxysmal in character, with intervals of normal pulse-beat, the condition is apt to be a functional one, and, *per contra*, where the rhythmic disturbance is constant and associated with profound circulatory interference, which is evidenced by syncope or vertigo, we are pretty safe in diagnosing an organic disease.

DR. LESZYNSKY stated that he saw three attacks of tachycardia in a young physician. Each of these attacks was brought on by an over-indulgence in alcohol and tobacco. The pulse-rate varied from 180 to 200, and each attack lasted for two or three days. The patient has had no attack now for five years. As regards slow pulse, Dr. Leszynsky said he was acquainted with two persons, both members of the same family, in whom that symptom is very pronounced.

DR. L. STIEGLITZ referred to a marked case of tetany he had seen in Dr. Hoffman's clinic at Heidelberg. The patient was a girl, aged eighteen, who developed attacks of tachycardia, with the pulse ranging from 180 to 220. He stated that with tetany there is often associated disease of the thyroid gland, and this is also the case in Basedow's disease, where we have the rapid pulse. The tachycardia may possibly be due to some toxic influence of the blood.

DR. SACHS gave the history of a case of tachycardia and two cases of bradycardia.

The discussion was then closed by **DR. JACOBY.**

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Recent Literature.

A Manual of Clinical Ophthalmology. By HOWARD F. HANSELL, M.D., Lecturer on Ophthalmology in the Jefferson Medical College, etc., and JAMES H. BELL, M.D., Member of the Ophthalmic Staff, Jefferson Medical College Hospital, etc. With 120 illustrations; 12mo; 231 pages. Philadelphia: P. Blakiston Son & Co.

This little manual is evidently intended as a textbook to enable the student to pass his examination in ophthalmology. The cuts are of the usual character, although some of the anatomical ones are hardly more than diagrams intended to demonstrate various accepted theories in regard to the functions of the eye, rather than true demonstrations of the anatomy as actually seen upon section of the eye.

The chapter upon refraction is very well written, and clearly expresses modern methods of examination. It would seem that no good object was attained in the chapter upon ocular muscles by introducing a new set of terms such as esotropia, exotropia, etc., to describe a condition which has already several complete sets of phrases for its description.

The type, paper and binding of the book are excellent.

THE twelfth German Congress for Internal Medicine will meet at Wiesbaden, from April 12th to 15th.

THE BOSTON

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THE TREATMENT OF MYXŒDEMA BY INJECTIONS AND THE INGESTION OF THYROID JUICE.

At the Manchester Royal Infirmary, Drs. Thomas Harris and G. A. Wright recently treated a case of myxœdema of nine years' standing by thyroid grafting.[1] A curved incision was made below each breast, and the glands were raised a little from the pectoral muscles. Half the thyroid gland of a young monkey, taken while the animal was under chloroform, was then placed under each breast. The wounds were closed and dressed. The operation-wounds healed by primary union; and on the 29th (the operation was performed on the 4th April, 1891) the patient was sent to the convalescent hospital. There was marked improvement, which was maintained, and she went home shortly after. Under the unfavorable surroundings of her home, she ultimately relapsed. The attending physicians do not attribute the improvement first experienced to the thyroid grafting, but to the better hygienic surroundings.

At a meeting of the Clinical Society of London, aged forty-three, who was the subject of well-marked April 21, 1892, Dr. Arthur Davies exhibited a man, myxœdema. He had suffered from this disease since 1879. Since last December he had been injected in the back three times a week with half a drachm of sheep's thyroid juice prepared according to the formula published in the *British Medical Journal*, October 10, 1891. (The gland of a freshly killed sheep is cut up into small pieces and put into a test-tube with 16 minims of glycerine and the same amount of a 0.5 per cent. solution of carbolic acid. The tube is plugged with cotton-wool, and allowed to stand in a cool place twenty-four hours. It is then squeezed through fine linen, by which means three cubic centimetres [49 minims] of a turbid pink fluid is obtained. This will keep fresh in a glass-stoppered bottle for at least a week.)

The injections caused a gradual rise of temperature followed by diuresis, and they had produced a very remarkable improvement in the man's condition.

These injections were first proposed by Dr. G. R. Murray of England.

The operation of thyroid grafting has been several times performed, and in W. J. Collins's case, reported in the *Lancet*, May 2, 1891, the benefit derived therefrom seems to have been unmistakable. The entire mammary gland of a sheep was transplanted into the submammary region of a myxœdematous woman.

It is now proposed to administer the thyroid juice by ingestion. At the meeting of the Clinical Society of London, January 27, 1893, Dr. A. Davies, who has been continuing his experimentation, presented four patients affected with myxœdema, who had been treated by the ingestion of the pulverulent extract of the thyroid body. This extract was administered at first twice, then once, a week in a dose equivalent to a quantity which varied from one-eighth of the gland to the entire gland. It was given in beef-tea, the temperature of which was not sufficiently elevated to destroy the active principles of the extract. All these patients had considerably improved; their weight had diminished; the skin had regained its suppleness; the respiration and walking had become easier.

Dr. Pasteur presented a woman, aged fifty-five years, affected with myxœdema, who had undergone improvement by the ingestion of crude thyroid substance. After having eaten five thyroid glands, this patient had symptoms of systemic intoxication, characterized chiefly by a notable enfeeblement of the heart's action. In this patient, the return of the skin to its normal state under the influence of the treatment was preceded by a desquamation like that of scarlet fever.

Dr. Calvert presented a case of myxœdema of twelve years' standing which had rapidly improved under the influence of the ingestion of the half of a sheep's thyroid gland three times a week.

Dr. Murray, of Newcastle, who, as above stated, was the first to propose the treatment of myxœdema by thyroid injections, reports that he uses for these injections a mixture composed of equal parts of thyroid extract, glycerine, and a five per cent. phenic-acid solution; six grammes of this mixture is the equivalent of one thyroid gland of the sheep. He now injects subcutaneously fifteen drops of this solution, taking care to make the injection very slowly, in order to avoid the accidents due to the penetration of the needle into a vein. He thinks a larger dose than fifteen drops likely to cause irritation. He also sometimes gives by mouth a mixture of thyroid juice and glycerine. Experience has shown him that to obtain the same therapeutic effect, it is necessary to administer by mouth four times the quantity employed for hypodermic injections.

At the same meeting Dr. Ord stated that he had

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[1] Lancet, April 2, 1892, page [illegible].

had some experience with the method of grafting, which he thinks produces only temporary amelioration of the symptoms. He prefers the administration of the thyroid extract by the mouth, and insists on the necessity of proceeding with precaution at the beginning of the treatment in order not to give the patient too large a dose of the thyroid extract.

Howitz, of Copenhagen, has been successfully treating a case of myxœdema of seven years' standing by the ingestion of the thyroid gland of the calf. The glands were cleaned, cooked, hashed, and made into a sort of paste with the water in which they have been cooked. At first, the patient was made to ingest about four lobes a day; then the treatment was suspended for a few days, to be resumed every second day with two lobes of the gland. Three days after the onset of the treatment there began to be noted a sensible improvement. There was an increase in the urine; the pulse became more frequent and stronger; the weight diminished; the œdema disappeared; the skin assumed a more healthy appearance; the mental faculties cleared up; movements were performed more readily, etc. The ingestion of the thyroid substance was always attended with an eruption of urticaria, which went away when the medication was discontinued. So marked was the general amelioration that Professor Howitz regarded the patient as practically cured. Besides this patient, Howitz has had occasion to observe two other cases which were treated in the same way, and with the same success.

Drs. Brandes, Grunfeld, Nielson and other Danish physicians have also had similar successes. Dr. Vermehren, assistant of Professor Howitz, has endeavored to isolate the active principle of the thyroid gland. He takes Murray's extract with glycerine, adds alcohol, and obtains a precipitate which he gives in pills in the dose of two to five grains. The effects of the treatment have been almost identical with those obtained by Howitz. Vermehren proposes to give the name of *thyréoidine* to this new substance, which has not yet been obtained pure, from a chemical point of view.

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PHYSIC AND PHYSICIANS, ACCORDING TO JOHN WESLEY.

We have lately read an old book written by that eminent divine and voluminous author, John Wesley, and published in 1747; the last and thirteenth edition bears date 1768. It is entitled: "Primitive Physick, or an Easy and Natural Method of Curing most Diseases."

A glance at this book will enable any one readily to appreciate the progress made in the healing art and in the popular conception of that art during the century and a half since it was written. John Wesley, though he did not boast of any special medical training, certainly represented a high standard of culture, and to a large body of religious people his theological writings are classics at the present day.

Wesley arraigns physicians for making of medicine "an abstruse science, quite out of the reach of ordinary men." They have done this "that the bulk of mankind might not pry into the mysteries of the profession." To this end they have abandoned simple for complicated remedies, and have "filled their writings with abundance of technical terms, utterly unintelligible to plain men. . . . They affect to deliver their rules and to reason upon them in an abstruse and philosophical manner. . . . They represent the critical knowledge of anatomy (and even natural philosophy and astronomy) as necessary to the understanding of the healing art." Those who understand only how to restore the sick to health "are branded with the name of empiricks." They have introduced into practice "abundance of compound medicines, consisting of so many ingredients that it is scarcely possible for common people to know which it was that wrought a cure; abundance of exotics, neither the nature nor names of which their countrymen understood; of chemicals, such as they neither had skill nor fortune nor time to prepare; yea, and of dangerous ones, such as they could not use without hazarding life, but by the advice of a physician. . . . And thus both their honor and gain were secured, a vast majority of mankind being utterly cut off from helping either themselves or their neighbors."

Wesley's "Primitive Physick" consists of a "collection of receipts," arranged in alphabetical order. Under the head of "Abortion," we read: "Use daily a decoction of lignum vitæ. . . . Or, in a sanguine habit, let blood." For an ague: "Go into a cold bath just before the cold fit. . . . Or make six middling pills of cobwebs. Take one a little while before the cold fit; two a little before the next fit; the other three, if needed, before the third fit. I never knew this to fail."

This is only a part of the remedies advised. Wesley inveighs against Peruvian bark, which "is very dangerous," and "frequently turns an intermittent fever into a consumption." He enumerates instances of this, one of them being his own case. The cinchona bolus in less than six hours inflamed and ulcerated his lungs, and by this summary process, brought him "to the third stage of a true pulmonary consumption," from which he narrowly escaped. He advises all to shun bark and use cobweb pills instead, which "will cure nine cases of intermittent fever out of ten."

Under the head "Bilious Colic," the patient is advised to "take a spoonful of sweet oil every hour. This has cured one judged to be at the point of death." Here Wesley is seen to have recommended a remedy which seems even to-day to be in fashion for the same complaint.

One peculiarity of the book is the profusion of remedies prescribed, among which the reader can take his pick, though in many instances those which the author has himself tested and found efficacious are marked "tried," or "I" meaning *infallible*, thus, under the head "Dropsy," we find twenty or more different remedies. The victims of anasarca or ascites are exhorted to apply green dock leaves to the joints and soles of the feet, to drink nothing but lemonade, to eat a crust of bread every morning fasting (" tried "), to "take as much as lies on a sixpence, of laurel leaves every second or third day; it works both ways," to drink tar-water, to drink sea-water, to abstain from all drink for thirty days, etc.

"To cause an easy delivery," we are told to "peel, slice and fry a large white onion in two or three spoonfuls of the best oil till it is tender; boil this with half a glass of water; strain and drink it in the morning, fasting for two or three weeks before the time of child-birth."

Patients afflicted with "green sickness" are to take "an ounce of quicksilver every morning," or, to grind together three ounces of steel filings and two ounces of red sugar candy (dose, from a scruple to half a drachm every morning).

The above will sufficiently illustrate the crude pharmaceutical methods of the book and of the times, and will remind one of Pliny's recipes for various ailments, given in his "Natural History."

We have perhaps quoted enough to indicate the character of a work which for more than forty years was a favorite with the grandmothers of the times, being a family guide in all sickness. Wesley discarded all "violent remedies," as antimony, opium, most of the preparations of mercury, and bleeding (generally); and he had great faith in the simple remedies "especially when conjoined with that medicine of medicines, Prayer." He knows no reason why one should bleed in pleurisy, which, he says, may get well "without any internal medicine whatever." He devotes much space to the statement of hygienic principles in health and in disease; and this part is characterized by the good sense which distinguished him. He ridicules the polypharmacy of the day, and advises trusting to one or two things that are known to do good. Many of the simples which he prescribes still rank among our domestic remedies.

Wesley was a founder of what may be termed "household physic." His little book, and the manual of Dr. Tessit which he edited later, represent the early embryonic stage of what has developed in our day into ponderous tomes, where many an ambitious, youthful, impecunious post-graduate seeks notoriety by attractive but superficial generalities as to diseases and their treatment, with profuse sensational illustrations of the deadly night-shade, the tobacco-plant, tapeworms and trichinæ, and which bear in gilt on their covers the title "Family Physician." Though apparently much out of sympathy with most of the physicians of his time, he yet speaks in high praise of Sydenham (then dead many years), of Dr. Dover (Sydenham's pupil), Dr. Cheyne and Dr. Tessit. He, moreover, urges heads of families when in doubt, and "in uncommon and complicated diseases, or where life is more immediately in danger, to apply without delay to a physician that fears God."

MEDICAL NOTES.

Another Four-Year School. — The Woman's Medical College of Pennsylvania has advanced the requirements for graduation to four years. All new matriculants must now take four annual courses of lectures.

A Lively Appendix. — In a discussion of appendicitis of the New York Surgical Society, Dr. Parker Syms referred to a case in which during oöphorectomy the vermiform appendix came into view, and, although healthy, was removed because of its great length (over five inches) lest it should cause future trouble. The point of special interest connected with it was that after its removal it continued for about ten minutes to squirm and turn on the plate very much as a grubworm might do, and finally a formed fecal movement took place from it.

Vaccination for Cholera. — Dr. Haffkine, of the Pasteur Institute at Paris, has lately been demonstrating and explaining in England his method for securing immunity from cholera by protective vaccination. He has now gone to India for the purpose of investigating cholera where it is endemic, and further applying his method. He has been promised every facility by the Government for the furtherance of his objects.

A European Cholera Conference. — At the International Cholera Conference to be held shortly at Dresden, on the initiative of the Austro-Hungarian Government, the subject to be more particularly discussed will be the desirability of securing uniformity in the administration of measures of restriction and protection on land in the same way as was the aim of the conference at Venice and Paris last year in regard to sea quarantines. The method of dealing with emigrants will also be dealt with. Medical delegates are expected from all the European Governments, as at former conferences, though Great Britain and Portugal, at last advices, had not yet committed themselves. It seems a little late in the season to expect the best results from such a conference.

Leprosy in Canada. — The last report of the Canadian Minister of Agriculture contains among other things a summary of the report of the Tracadie lazaretto, which tends to show that leprosy is spreading in districts hitherto unaffected. In his report for this year, Dr. Smith says that while on a tour of inspection during 1892 he found leprosy cropping out in unexpected places, and he fears that for years to come new cases will be met with, and that only by permanent detention and isolation can it be kept in check, as the disease is now known to have spread from centres of contagion and to have gained a foothold without attracting attention.

The Government of Venezuela and the Pan-American Medical Congress. — Señor P. Ezequiel Rojas, the Venezuelean Minister of Foreign Affairs, has forwarded on behalf of his government, through the United States *Chargé d'Affaires* at Caracas, a formal acceptance of the invitation issued pursuant to the joint resolution of the United States Congress to the various governments of the Western Hemisphere, to send official delegates to the Pan-American Medical Congress. The selection of delegates has not yet been made, but the names will be forwarded at the earliest possible moment.

PROFESSIONAL MISCONDUCT. — The following rules concerning proper professional conduct come from widely separated parts of the world. The Royal College of Physicians of London have adopted a by-law "That no Fellow or Member of the College shall be engaged in trade, or dispense medicines, or make any engagement with a chemist or any other person for the supply of medicines, or practise medicine or surgery in partnership, by deed or otherwise, or be party to the transfer of patients or of the good-will of a practice, to or from himself, for a pecuniary consideration." The San Francisco County Medical Society has adopted the following resolution: "That any member of this Society whose name shall appear in the daily press describing his professional powers in an unprofessional manner, and who cannot give a satisfactory explanation of the same, shall at the next meeting be expelled from the Society."

NEW YORK.

THE ENLARGEMENT OF HOFFMAN ISLAND. — A bill has been prepared by the Quarantine Commissioners calling for an appropriation for the enlargement of Hoffman Island, by extensions 150 feet long on its easterly side and 500 feet on the northern end. On the latter it is proposed to build a hotel with accommodations for five hundred cabin passengers, which will be isolated from the present docks. Until this is ready it is proposed to retain the Surf Hotel at Fire Island. The bill also calls for an appropriation for the construction of buildings on the easterly extension of the island to shelter 1,500 more steerage passengers than the present accommodations for 1,200. The commissioners ask, in addition, for a further appropriation for a three-story fire-proof hospital building on Swinburne Island in place of the two frame wards there.

THE ACADEMY COMMITTEE ON QUARANTINE. — After it had made its report at the meeting of February 16th, the special committee on quarantine of the Academy of Medicine was discharged. Some dissatisfaction having arisen on account of this action, a special meeting of the Academy was held February 24th for the purpose of reconsidering the discharge of the committee. Dr. Curtis, speaking for those desiring a reconsideration, expressed the opinion that the committee had not been treated with proper courtesy and that there was urgent need for its continuance. Dr. Loomis, ex-president of the Academy, opposed reconsideration. The committee having performed the duty for which it was appointed, it seemed to him that there was nothing left for it to do. The Advisory Board of the Academy was still in existence, he said, and could be called upon at any time by the Health Department for counsel and assistance. The Academy was purely a scientific body, and there was no room in it for wrangling over petty matters or for the admission of politics. He therefore did not believe it was the duty of members to go to Washington as lobbyists. Dr. Derby, a member of the committee, said that if the committee was not worthy of the Academy in the work it had done he had no desire to continue to be a member. After some further debate a resolution providing for the reappointment of the committee was adopted.

THE OFFICE OF CORONER. — The Committee on Legislation of the Medical Society of the State of New York, of which Dr. D. B. St. John Roosa is chairman, have issued a public statement in regard to a bill now before the Legislature which aims to place the coroner's office in the hands of the medical profession, in which they declare that the Society which they represent is warmly in favor of this principle, and that it is undoubtedly believed by the physicians and surgeons of the State that the duties of coroners, so far as ascertaining the nature of the disease or injury causing death is concerned, should be in their hands, and that thus the best interests of the community will be promoted. They go on to say: "Without indorsing any particular bill, in all its details, which may at the present time be before the Legislature, this committee feels warranted in urging the Legislature to pass a law which will, in the State of New York, as in the State of Massachusetts, make the office of Coroner one to be filled only by a competent physician. The committee also believes that a sufficient salary — not less than $5,000 in great cities and from $1,000 to $2,000 in the country and smaller towns — must be paid in order to secure competent medical service. The coöperation of the press of this State is earnestly requested in favor of this principle."

A RECEPTION HOSPITAL. — On February 18th the old frame building at the foot of East 16th Street which has heretofore been occupied for a reception hospital was burned to the ground by order of the Board of Health. In its place a substantial brick hospital, for the erection of which money was appropriated some time ago, will be pushed rapidly forward, so as to be ready in the event of any invasion of contagious disease next summer.

THE FIRE ISLAND CONTROVERSY. — Judge Cullen has handed down a decision dismissing the complaint in the action brought last September to restrain Governor Flower and Health Officer Jenkins from using the Surf Hotel at Fire Island as a quarantine station. In his opinion he states that he is satisfied that an emergency existed, and that the authorities were justified in providing such a place of refuge.

A NEW LODGING-HOUSE. — The wood-yard of the Charity Organization Society, which has been in successful operation, is to be enlarged and have connected with it a public lodging-house. Four lots have been leased in West 28th Street, and part of the premises will be occupied by the lodging-house, which will accommodate two hundred men, while the rest will be taken up by the wood-yard. Applicants for aid will be supplied with meals and lodging in return for a given amount of work either in the wood-yard or in lighter occupation, according to their physical condition, and each one, before being allowed in the sleeping quarters, will be required to take a bath and have his clothing disinfected.

The Lebanon Hospital. — On February 22d the new Lebanon Hospital, a Jewish institution, was opened with appropriate ceremonies. It is situated in the annexed district above the Harlem, and the building, which is of brick and five stories in height, is capable of accommodating five hundred patients, although at present there are only fifty beds. A dispensary department will be conducted on the first floor. The property includes forty city lots and was formerly occupied by the Ursuline Convent.

A New Hospital. — On the same day the corner-stone of a new hospital was laid at Mount Vernon, West Chester County. The land for the purpose was given by Miss Martha Wilson, who has also contributed $9,000 towards the erection of the building, which it is designed to have furnished with all modern hospital appliances. Among those who made addresses on the occasion was Dr. E. F. Brush, who is now the mayor of Mount Vernon.

◆

Correspondence.

INSECTS AS CARRIERS OF INFECTION.

Syracuse, N. Y., February 19, 1893.

Mr. Editor: — I trust you will pardon me for calling your attention to the fact that Dr. R. L. Maddox, Hon. F.R.M.S., read before the Royal Microscopical Society (London), May 13, 1885, a paper under the title, "Experiments on Feeding some Insects with Curved or 'Comma' Bacillus, and with another Bacillus (B. subtilis?)." October 14th of the same year, Dr. Maddox read an extension of the above paper under the title, "Further Experiments on Feeding Insects with Curved or 'Comma' Bacillus." Both papers appear in the published *Journal of the Royal Microscopical Society* for 1885. During his work Dr. Maddox became acquainted with, and refers to, analogous experiments with other sources of infection, published by Dr. Grassi, in 1883, and Dr. Manson (in 1885?).

The Boston Medical and Surgical Journal, February 16, 1893, p. 170, gives Simmonds credit for first feeding flies with cholera dejections. The priority, by seven years, of the patient labor of Dr. Maddox is worthy your generous recognition.

Yours sincerely,

A. Clifford Mercer, M.D.

[In the Journal's editorial of February 16th, the question of *priority* of experiment as to feeding insects with micro-organisms, and their thus becoming carriers of infection was not assumed. The point in view was rather the application of this suggestion and these experiments to the cases which occurred in New York last autumn. We are glad to give Dr. Maddox any credit which belongs to him, [illegible] English language. We think too much is often made of a mere matter of priority of suggestion. Similar experiments, we are aware, were made with tubercle bacilli, in [illegible]. We quoted the papers of Simmonds and Sawtschenko rather as notable recent contributions to the subject, and as giving it a practical application at the present time. — Ed.]

METEOROLOGICAL RECORD.

For the week ending February 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	Weather.* 8.00 A.M.	Weather.* 8.00 P.M.	Rainfall in inches.
S...12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	74	63	N.W.	[illegible]	11	[illegible]	C.	[illegible]	
M..13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	92	N.E.	N.E.	10	[illegible]	[illegible]	N.	0.13
T..14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72	N.	S.	15	11	[illegible]	C.	[illegible]
W..15	29.84	46	53	40	[illegible]	[illegible]	66	S.W.	W.	11	[illegible]	O.	[illegible]	
T..16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	N.W.	[illegible]	[illegible]	F.	N.	
F..17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	E.	15	[illegible]	C.	N.	
S..18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	N.W.	[illegible]	[illegible]	N.	N.	0.87
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 18, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	1,827,396	[illegible]	[illegible]	12.90	19.50	.40	4.40	[illegible]
Chicago . . .	1,250,000	—	—					—
Philadelphia .	1,092,168	[illegible]	[illegible]	15.12	16.59	1.47	8.40	[illegible]
Brooklyn . .	[illegible]	[illegible]	[illegible]	17.01	18.63	[illegible]	[illegible]	3.78
St. Louis . . .	[illegible]	—	—	—	—	—	—	—
Boston . . .	[illegible]	[illegible]	77	10.32	24.94	.43	4.73	[illegible]
Baltimore . .	[illegible]	—	—					—
Cincinnati . .	[illegible]	[illegible]	34	10.34	11.28	4.70	2.82	—
Cleveland . .	281,353	99	[illegible]	11.00	22.00	2.00	8.00	—
Pittsburg . .	[illegible]	—	—	—				
Milwaukee . .	[illegible]	[illegible]	[illegible]	9.44	18.88		3.54	[illegible]
Washington .	[illegible]	[illegible]	[illegible]	9.13	18.26	1.66	[illegible]	—
Nashville . .	[illegible]	—	—	—	—	—	—	—
Charleston . .	[illegible]	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	[illegible]	[illegible]	[illegible]	8.58	17.16	—	2.86	—
Lowell . . .	82,155	[illegible]	14	[illegible]	[illegible]	—	—	—
Fall River . .	[illegible]	[illegible]	[illegible]	13.15	34.19	—	5.26	2.62
Cambridge . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	3.57	3.57
Lynn	60,809	[illegible]	1	[illegible]	—		16.66	—
Springfield . .	47,052	21	[illegible]	9.52	33.32	[illegible]	4.76	—
Lawrence . .	[illegible]	34	13	2.94	11.76	2.94	—	—
New Bedford .	[illegible]	[illegible]		[illegible]	[illegible]	7.14	7.14	—
Holyoke . . .	40,099	[illegible]	—	—	[illegible]	—	—	—
Brockton . .	32,782	11	[illegible]	18.18	9.09	9.09	9.09	—
Salem	[illegible]	14	—	21.42	14.28		21.42	—
Haverhill . .	30,065	11	[illegible]	18.18		9.09	—	—
Chelsea . . .	29,479	[illegible]	2	—	11.11	—	—	—
Malden . . .	[illegible]	8		12.50	12.50		—	
Newton . . .	[illegible]	12	3	[illegible]	[illegible]	—	[illegible]	
Taunton . . .	26,464	11	4	9.09		—	—	[illegible]
Gloucester . .	[illegible]	[illegible]	[illegible]	16.66	33.33	—	—	[illegible]
Fitchburg . .	25,444	8	[illegible]	—	[illegible]	—	—	—
Waltham . .	[illegible]	—	1	—	[illegible]	—	—	
Quincy . . .	18,669	11	[illegible]	[illegible]	[illegible]	9.09		[illegible]
Pittsfield . .	[illegible]	[illegible]	[illegible]					
Northampton .	[illegible]	[illegible]	1		8.33	—	—	—
Everett . . .	[illegible]	[illegible]	0	—	—	—	—	
Newburyport .	14,031	[illegible]	1	—				
Amesbury . .	13,561	[illegible]	1	[illegible]				

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers), 368, acute lung diseases [illegible], consumption [illegible], diphtheria and croup 145, scarlet fever 52, typhoid fever 31, diarrhœal diseases 31, whooping-cough [illegible], erysipelas [illegible], measles [illegible], cerebro-spinal meningitis 13, typhus fever 10, malarial fever 6, puerperal fever 6, small-pox 3.

From whooping-cough New York 17, Brooklyn 13, Philadelphia and Washington [illegible]. [illegible] New York [illegible] [illegible] and Brooklyn [illegible] [illegible] and Brooklyn 2 each, [illegible]. From cerebro-spinal meningitis New York and Washington [illegible], Quincy 2, Brooklyn, Cleveland, Milwaukee, Fall River and

Somerville 1 each. From typhus fever New York 10. From malarial fever New York and Brooklyn 3 each. From small-pox New York 2, Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending January 28th, the death-rate was 22.2. Deaths reported 4,392; acute diseases of the respiratory organs (London) 563, measles 90, diphtheria 78, whooping-cough 68, scarlet fever 68, diarrhœa 52, fever 26, small-pox (Manchester 6, Oldham 4, Leicester 2, Derby and Halifax 1 each) 14.

The death-rates ranged from 14.2 in Wolverhampton to 28.5 in Liverpool; Birmingham 23.0, Bradford 20.5, Croydon 20.6, Gateshead 21.2, Halifax 18.2, Hull 19.7, London 22.2, Manchester 28.3, Newcastle-on-Tyne 18.5, Nottingham 20.8, Sheffield 19.7, West Ham 17.[illegible]

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending February 4th, the death-rate was 20.2. Deaths reported 4,000; acute diseases of the respiratory organs (London) 452, whooping-cough 87, measles 64, diphtheria 60, scarlet fever 53, diarrhœa 39, fever 33, small-pox (London 5, Manchester 3, Bolton and Halifax 2 each, Bradford, Leeds and Gateshead 1 each) 15.

The death-rates ranged from 12.8 in Huddersfield to 26.5 in Preston; Birmingham 18.6, Blackburn 25.2, Bradford 18.6, Hull 18.5, Leeds 22.4, Leicester 13.6, Liverpool 23.1, London 20.3, Manchester 24.1, Newcastle-on-Tyne 18.3, Nottingham 18.0, Sheffield 18.7, Swansea 18.3, West Ham 17.0.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending February 11th, the death-rate was 19.9. Deaths reported 3,934: acute diseases of the respiratory organs (London) 377, whooping-cough 91, diphtheria 80, measles 73, diarrhœa 43, scarlet fever 41, fever 21, small-pox (Manchester 3, Salford 2, London, Leicester, Derby, Liverpool, Oldham, Halifax and Leeds 1 each) 12.

The death-rates ranged from 14.9 in Wolverhampton to 25.9 in Bradford; Birmingham 20.9, Bolton 21.8, Croydon 20.6, Derby 16.6, Leeds 20.1, Leicester 19.4, Liverpool 22.8, London 19.1, Manchester 24.1, Newcastle-on-Tyne 29.1, Norwich 21.5, Nottingham 16.1, Portsmouth 19.3, Sheffield 21.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 18, 1893, TO FEBRUARY 24, 1893.

Under the authority of an act of Congress approved February 8, 1893, CAPTAIN JAMES A. FINLEY, assistant surgeon, is, by direction of the President, placed upon the retired list of the Army, to date from February 16, 1893, the date of his acceptance of his appointment under the provisions of said act.

Leave of absence for three months, on surgeon's certificate of disability, with permission to leave the Department of Texas, is granted MAJOR JAMES P. KIMBALL, surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 25, 1893.

E. P. STONE, passed assistant surgeon, ordered to Naval Hospital, Chelsea, Mass.

C. U. GRAVATT, surgeon, from Naval Hospital, New York, March 1st, and granted three months' leave.

THE PAN-AMERICAN MEDICAL CONGRESS.

SECTION ON ANATOMY.

This Section will be devoted to the study of human and comparative anatomy and of biology, as departments of natural science as well as in their relations to practical medicine and surgery.

The Executive President of the Section asks the coöperation of all interested in anatomy and biology in making the deliberations of the Section valuable to those present at the meeting and worthy of preservation in the Volume of Transactions of the Congress.

JOHN B. ROBERTS, *Executive President*,
1627 Walnut Street, Philadelphia.
DR. D. S. LAMB, *English Speaking Secretary*,
800 10th Street, N. W., Washington, D. C.
DR. A. M. FERNANDEZ, *Spanish Speaking Secretary*,
194 W. 10th Street, New York, N. Y.

SECTION ON MEDICAL PEDAGOGICS.

The Pedagogic Section will devote its attention especially to the history of the development of medical education in America.

In the papers presented by leading teachers, recent advances in methods of instruction will be considered.

The *art of teaching*, which is regarded as a study of great interest in other branches of learning, has received hitherto but little attention from the medical profession.

The Section in Medical Pedagogics will therefore be made a prominent feature of the Congress and it is hoped that those interested in medical education will coöperate in the work of this Section by being present and by actively engaging in the discussion of subjects presented.

Any inquiries or communications may be made through the secretaries undersigned:

J. COLLINS WARREN, M.D., *Executive President*,
Boston, Mass.
CHAS. L. SCUDDER, M.D., *English Speaking Secretary*,
Boston, Mass.
WM. F. HUTCHINSON, M.D., *Spanish Speaking Secretary*,
Providence, R. I.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held at 19 Boylston Place, on Monday, March 6th, at 8 o'clock.

Readers: Dr. Wm. M. Conant, "Resection of the Cæcum for Malignant Disease; Intestinal Anastomosis; Recovery." Exhibition of patient and specimens.

Dr. R. A. Kingman will report "A Laparotomy for Malignant Ovaries," performed on same patient one month previously. Discussion by Drs. W. T. Councilman, H. W. Cushing, M. H. Richardson and S. J. Mixter.

Dr. F. E. Cheney will report a case of "Acute Bilateral Ophthalmoplegia, Externa and Interna." Discussion by Drs. O. F. Wadsworth, J. J. Minot, Myles Standish, J. J. Putnam and G. L. Walton.

Report of treasurer.

Report of committee on admissions.

Appointment of committee to nominate officers for the ensuing year.

JOHN C. MUNRO, M.D., *Secretary*.

FREE HOSPITAL FOR WOMEN.

An additional out-patient clinic has been established at the Free Hospital for Women, Nos. 58 and 60 East Springfield Street, meeting on Monday and Thursday mornings at nine o'clock, and will be in charge of Dr. Samuel Breck.

RECENT DEATHS.

GEORGE W. AVERY, M.D., of Hartford, Conn., died February 23d, aged fifty-six years. During the war he served in the army as surgeon at New Orleans, and took an active part in the sanitary reforms in that city. He remained in New Orleans for some time after the war, but later returned to Hartford. He was a graduate of the Yale Medical School in the class of 1861.

SAMUEL N. NELSON, M.D., M.M.S.S., of Revere, died February 25th, aged thirty-six years. He graduated from Harvard College in the class of 1878, and from the Medical School in 1882. Since graduation he has practised in Revere and since 1889 has served as surgeon to the Soldiers' Home.

HENRY WHEATLAND, M.D., M.M.S.S., of Salem, died February 27th, aged eighty-one years. Dr. Wheatland graduated from Harvard College in the class of 1832, and from the Medical School in 1837. For more than ten years he was superintendent of the East India Marine Society, and on the founding of the Essex Institute in 1848, and since, gave a large part of his time to it, serving several years as president. He was also trustee of other scientific institutions.

BOOKS AND PAMPHLETS RECEIVED.

Annual Reports of the President and Treasurer of Harvard College, 1891–91. Cambridge: Published by the University. 1893.

Burdett's Hospital Annual and Year Book of Philanthropy for 1893. Edited by Henry C. Burdett. London: The Scientific Press.

Various Forms of Hysterical and Functional Paralysis. By H. Charlton Bastian, M.D., F.R.C., Professor of the Principles and Practice of Medicine in University College, London. Philadelphia: J. B. Lippincott Co. 1893.

Diseases of the Skin, Their Description, Pathology, Diagnosis and Treatment, with Special Reference to the Skin Eruptions of Children. By H. Radcliffe Crocker, M.D., Physician for Diseases of the Skin in University College Hospital, London. Second edition. Philadelphia: P. Blakiston, Son & Co. 1893.

Keep Your Mouth Shut; A Popular Treatise on Mouth-Breathing, its Causes, Effects and Treatment. By Fred. A. A. Smith, M.D., M.R.C.S., L.R.C.P., Honorary Surgeon, Cheltenham Eye, Ear and Throat Infirmary. With an Appendix on Ophthalmia in New-born Children. By Drs. Smith and S. M. Burnett. Boston: Roberts Brothers. 1893.

Original Articles.

THE INTERMITTENT ADMINISTRATION OF QUININE IN MALARIA, WITH THE TEMPERATURE AS A GUIDE.

BY [illegible], M.D.

In the vicinity of Boston, as well as in the city itself, most physicians have observed, during the past summer, an unusual increase in the cases of malaria. It is, however, a disease of the country rather than of the city, and especially affects those who have to do with the soil. I desire to call attention to some of the points that are of practical interest in the treatment of this disease, especially to the intermittent method of administering quinine, with the temperature as a guide, and not the chill, that I have had the pleasure of introducing into this community. The bearing of this method will be made more clear if I first recall some points relating to the parasite of this disease; but I shall not attempt to consider here the various types of malaria nor the differing views of Laveran and of the Italian school concerning the parasites. More than ten years ago, Laveran, then a French army surgeon in Algiers, discovered the parasite of malaria; and years of careful study on his part, together with that of many other observers in widely-separated parts of the world, have confirmed and extended his first observations. Laveran's hæmatozoon, more generally known as the plasmodium malariæ, has never been found in any other disease. It is not a bacterium, but, according to Bütschli's classification, belongs to the group of Gregarinida, order of Sporozoa, class of Protozoa. The history of these primitive animals outside of the body is at present unknown. A warm, moist soil, such as would be found in hot seasons after a rain, is followed by an increase in the number of cases of malaria; but where the marshy areas are completely submerged, there seems to be much less danger. It is thought to be carried to man both by the air and by water. Many facts point to the latter as one source of infection.

Inside the body these hæmatozoa find their homes and food in the blood. According to Laveran their minimum period of incubation is from six to ten days. They have a cycle of development, and at certain stages of their growth are more, and at others less, susceptible to the action of quinine. Most observers think that — they penetrate the red corpuscles of the blood, in which at first they occupy but a small space; they gradually enlarge, however, at the expense of the hæmoglobin until they have absorbed the endoglobular substance; segmentation takes place, and the spores break out into the blood serum; the presence of large numbers of spores in the blood produces an attack of the fever; the maturing of different generations of parasites the return of the fever.

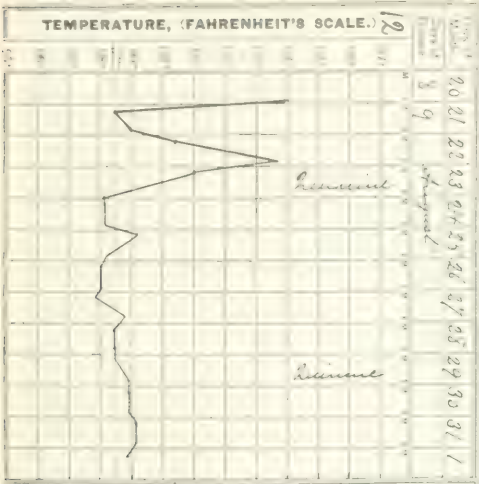
The successive development of the parasites indicates successive treatment, so timed as to anticipate the recurrence. Laveran compares such a method of giving quinine to the way in which liquids are rendered sterile by boiling. The first boiling is sufficient to kill most of the bacteria, but some spores remain. If, however, the boiling is repeated on the following day the spores, then having developed into bacteria, are destroyed. If the water is boiled a third time, after an interval of twenty-four hours, it is made sterile.

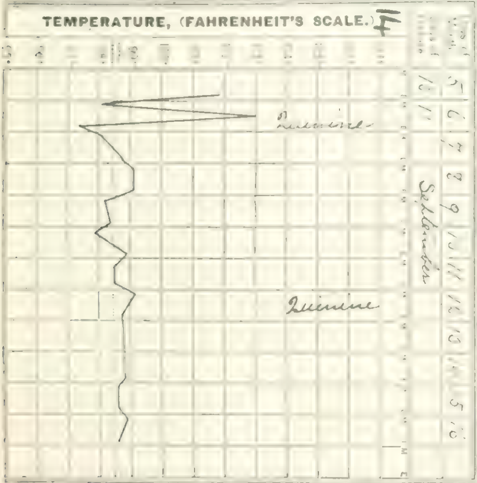
When an enemy such as the hæmatozoa, however, attacks the organism, it is not wholly indefensible; there are bodies normally present, known as phagocytes, which are capable of overcoming the enemy if it is not too numerous. To assist nature in this encounter, we should place the system in as good a condition as possible; and some cases recover after rest in bed, aided by good food. The mortality from malaria in Southern India is aggravated by the system of starvation to which the inhabitants subject themselves when suffering from this disease. But, if on the contrary, the parasites have the upper hand, rest alone is not sufficient, we must have recourse to quinine. It is a serious matter to have the blood deteriorated by the loss of an element that carries oxygen to every part of the body, and in severe cases there may be a great diminution in the number of red corpuscles within two or three days.

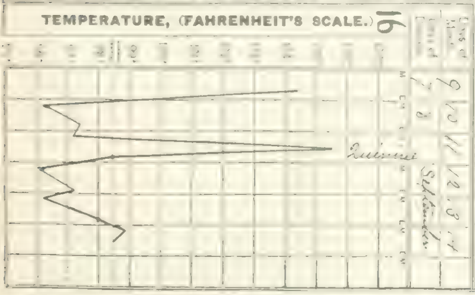
Dock, in his article on malarial diseases, dwells at some length upon the proper time for the administration of quinine and finally suggests the following plan "for the routine treatment of simple cases." First day, in the decline, 20 grains of quinine; second day, if necessary, 10 grains; seventh day, 20 grains; fifteenth day, 20 grains; twenty-second day, 20 grains. He also states that instead of one large dose, three or four five-grain doses may be given at intervals of two hours during the decline.

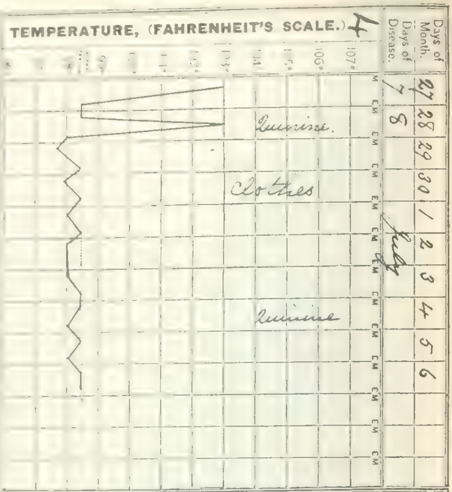
The result of the intermittent method of using quinine with the temperature as a guide, and not the chill, in such cases of malaria as came into my service at the Boston City Hospital last summer will be seen below. There were eighteen cases in all, twelve tertians, five quotidians, and one of irregular type. In some instances the diagnosis was established by finding the parasites in the blood. One of the cases is interesting in this connection, as the patient was sent to the hospital with the diagnosis of typhoid fever; but an examination of the blood showed the presence of parasites, and proved it to be a case of malaria. In treating these cases I gave 20 grains of sulphate of quinine, when the temperature began to fall, without reference to the chill. With this treatment it is, of course, necessary to have the temperature taken at frequent intervals; and this was done in most of the cases every four hours. On leaving the hospital, the patients were given a prescription, and directed to take the medicine on the seventh, fifteenth and twenty-second days. It was not found necessary to give quinine on the second day, see the preceding paragraph, as there was no chill after the first dose of quinine was administered, except in two cases No. 3 and No. 15, the charts of which are not given. In these cases the fever returned on the second day, but in No. 3 the dose given on the first day was not administered at the right time; in No. 15 it is possible that this was also the case. The patients had no cinchonism while in the hospital. The intermittent method of administering quinine seems to lessen the risk of the cinchonism that is apt to follow after continuous doses; further, it leaves the beds in the hospital free earlier for other patients and saves quinine, much less being used than in the continuous method.

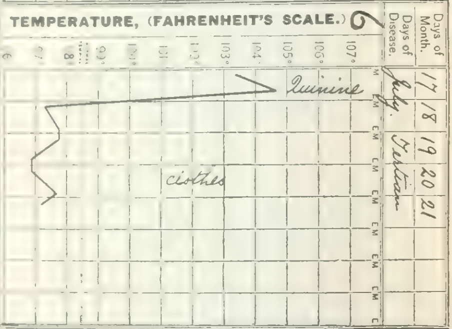
The charts are numbered in the order in which the patients were received at the hospital, and I give on pages 230 and 231 the even-numbered ones, omitting, however, No. 18, as it was a very mild case. The odd-numbered charts are of the same character; but the average time in the hospital of the patients there described was about two days less and the average temperature rather higher than in the even-numbered cases.

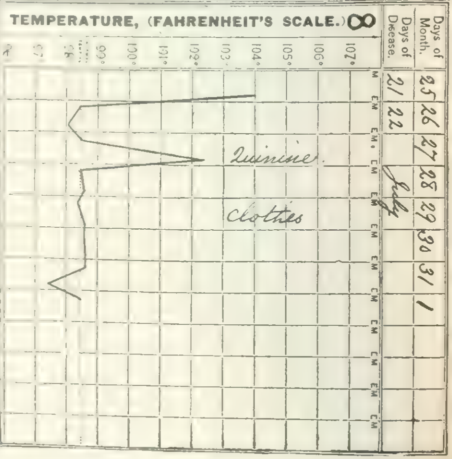

TEMPERATURE, (FAHRENHEIT'S SCALE.) 12
Days of Month.
Days of Disease.
20 21 22 23 24 25 26 27 28 29 30 31 1
8 9
August
Quinine
Quinine

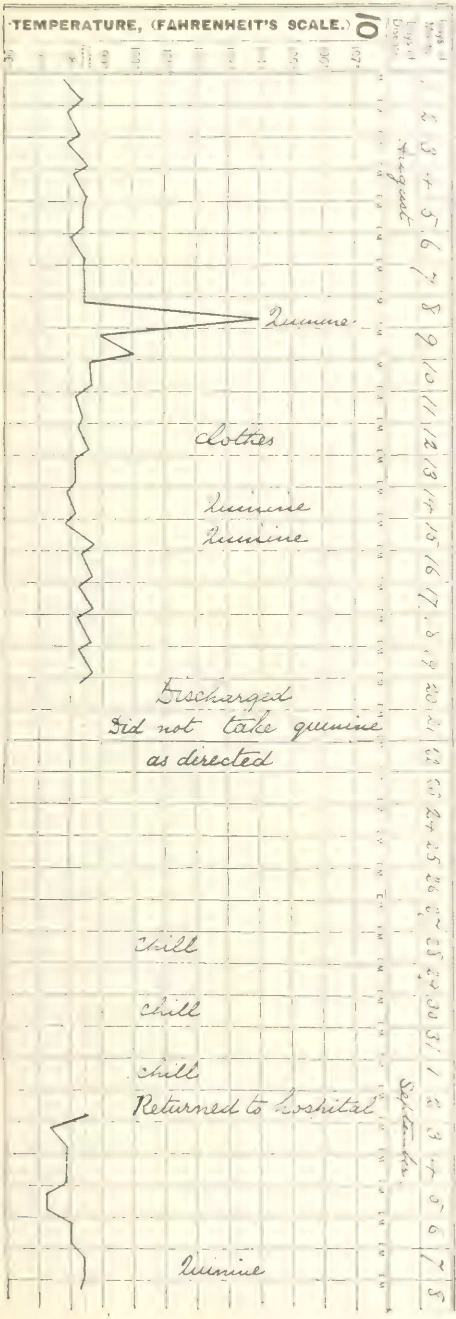

TEMPERATURE, (FAHRENHEIT'S SCALE.) 14
Days of Month.
Days of Disease.
5 6 7 8 9 10 11 12 13 14 15 16
10 11
September
Quinine
Quinine

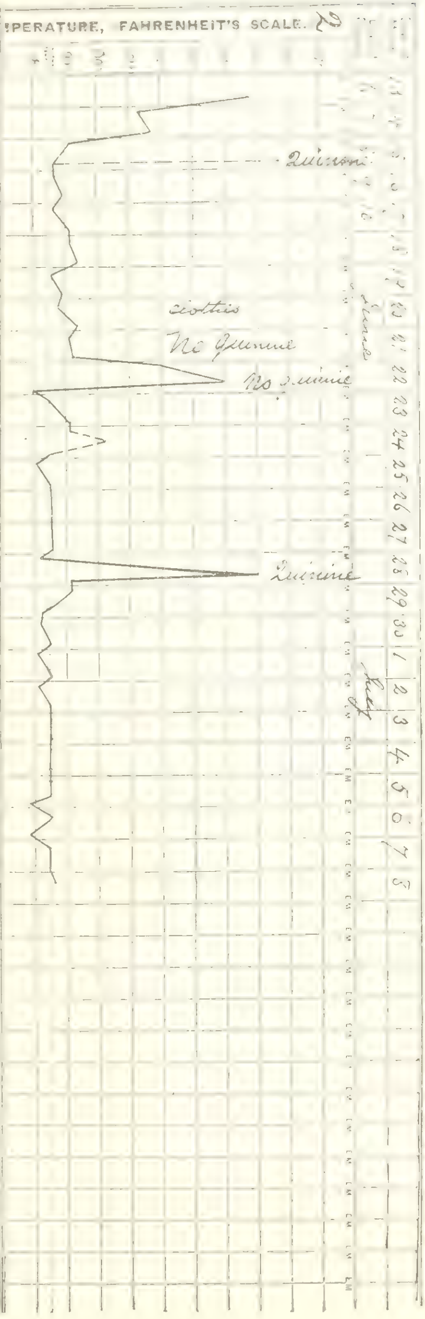

TEMPERATURE, (FAHRENHEIT'S SCALE.) 16
Days of Month.
Days of Disease.
9 10 11 12 13 14
7 8
September
Quinine


TEMPERATURE, (FAHRENHEIT'S SCALE.) 4
Days of Month.
Days of Disease.
98° 99° 100° 101° 102° 103° 104° 105° 106° 107°
27 28 29 30 1 2 3 4 5 6
7 8
July
Quinine.
Clothes
Quinine


TEMPERATURE, (FAHRENHEIT'S SCALE.) 6
Days of Month.
Days of Disease.
96° 97° 98° 99° 100° 101° 102° 103° 104° 105° 106° 107°
17 18 19 20 21
July. Tertian
Quinine
clothes


TEMPERATURE, (FAHRENHEIT'S SCALE.) 8
Days of Month.
Days of Disease.
96° 97° 98° 99° 100° 101° 102° 103° 104° 105° 106° 107°
25 26 27 28 29 30 31 1
21 22
July
Quinine.
Clothes


TEMPERATURE, (FAHRENHEIT'S SCALE.)
10
August
September
Quinine
clothes
Quinine
Quinine
Discharged
Did not take quinine as directed
Chill
chill
chill
Returned to hospital
Quinine


TEMPERATURE, FAHRENHEIT'S SCALE.
2
June
July
Quinine
clothes
No Quinine
No quinine
Quinine

All cases were given twenty grains of sulphate of quinine in solution when the temperature was falling, without reference to the chill, and the dose was repeated on the seventh, fifteenth and twenty-second days. When this rule was followed there was no chill after the first dose was administered while the patients were in the hospital, except in case No. 15 referred to above, nor after they were discharged, so far as I am aware. In view of further experience, it seems to me that in the forms of malaria most common here a smaller amount of quinine, fifteen grains or less, would answer, or where it seems probable that the patient may be especially susceptible, five-grain doses repeated once, or if no symptoms are produced, twice, at intervals of two hours, may be sufficient.

Charts 1, 6, 8, 12, 14, 16 on page 230 and Charts 2 and 10 on page 231 show the effect of a *single* dose of quinine given on the decline of the temperature, without reference to the chill.

Chart 8 illustrates especially the advantage of consulting the temperature in administering the quinine, as this patient had no chill while in the hospital. He was given quinine on July 27th, while the temperature was falling.

In Cases 2 and 10 the intermittent method of treatment was not fully carried out; and they therefore illustrate well the importance of following the first dose by a dose on the seventh, fifteenth and twenty-second days, respectively.

Case 2 entered the hospital June 13, 1892, and on June 15th, when the temperature began to fall, quinine was administered. On June 21st the patient did not take the quinine, as she should have done, and the fever returned. On June 28th another dose of quinine was given, and there were no more chills.

Case 10, J. K., thirty-eight years old, entered the hospital August 1, 1892. History of slight malaria the preceding year and of chills every second day since July 4th of this year. From August 1st to 7th, temperature normal. An examination of the blood on August 7th showed 2,880,000 red corpuscles and 40,000 microcytes, and diminished tendency to rouleaux. Hæmoglobin 60 per cent. Iron given. August 8th, quinine was administered during the decline, likewise on August 14th and 15th. August 18th, the blood was again examined; and there were 3,340,000 red corpuscles and 10,000 white corpuscles. No abnormal sizes seen. Hæmoglobin 90 per cent. The patient was discharged August 20th. After leaving the hospital he did not take the quinine on August 22d, as directed. Returned September 2d, and reported having had chills on August 28th and 30th and September 1st. Quinine was administered on September 7th; the patient was discharged September 8th, and given a prescription for quinine to be taken September 15th and 22d. This was the only case that returned to the hospital.

Case 2 shows that when the quinine was not administered on the seventh day, the fever returned. Case 10 shows that when it was not administered on the fifteenth as well as on the first and seventh days, the fever returned.

It is known that there is no definite relation between the time of the chill and that of the maximum temperature. In my eighteen cases the time both of the chill and of the maximum temperature, before quinine was given, was noted in five cases only. In one case the chill followed the rise in temperature and in four cases preceded the rise in temperature, coming in the first three of the four cases, six hours, three hours and thirteen hours respectively, before the rise. In the fourth case, the time both of the chill and of the maximum temperature was noted three times; and in this case the chill preceded the rise in temperature seven hours, eight hours and one hour, respectively. In case No. 8, as already stated, there was no chill.

Charts I and II, page 233, which the courtesy of another physician permits me to use, show what may happen under another method of administering quinine in cases similar to mine.

Case I entered the hospital July 11th, and was given

July 1[illegible], ten grains of quinine.
July 14, sixteen grains of quinine (four at 4 A. M., eight at 8 A. M., four at 8 P. M.).
July 15, thirty grains of quinine (ten at 4, 6 and 8 P. M.).

And this dose seems to have been continued on July 16th, 17th and 18th. In spite of the thirty grains of quinine given on July 15th, the patient had a chill on July 16th.

Case II entered the hospital June 1st, and was given

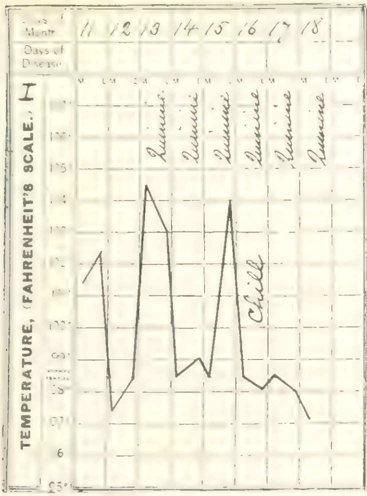
June [illegible], twelve grains of quinine.
June 6, four grains of quinine at 6 P. M.
June 7, sixteen grains of quinine (eight at 6 A. M. and eight at 10 A. M.).
June 8, four grains of quinine.
June 9, sixteen grains of quinine.
June 10, four grains of quinine.
June 11, sixteen grains of quinine.
June 12, four grains of quinine.

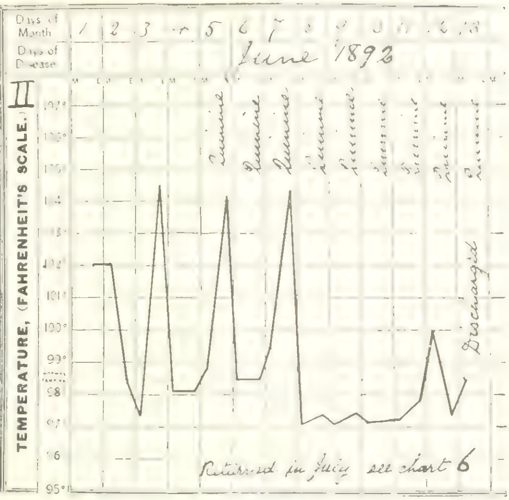
Notwithstanding this, the chills returned in about four weeks, and this patient entered my service July 17th, as it happened, during a chill and just before the temperature had reached the maximum. He had one dose of quinine, when the temperature began to fall. There were no more chills. See Chart 6, page 230.

The intermittent method of giving quinine applies according to Plehn's experience, to prevention as well as to cure. Plehn, a surgeon on board a Dutch vessel, found that in spite of daily doses of three to five grains of quinine, malaria appeared regularly among those under his charge while about the coast of Java. He then tried giving quinine in fifteen-grain doses, at intervals of seven days, to 73 persons, 40 per cent. of whom were old sufferers from malaria. To their astonishment, of the 73 persons so treated, only one had malaria, and this was a rudimentary attack *ten* days after the last dose of quinine; he had previously shown symptoms of malarial cachexia from an old attack.

In severe forms, such as occur in warmer climates, one does not wait, however, for intermissions or remissions before giving quinine; and if the stomach be intolerant, high rectal injections may be used, and when there is urgency, it should be given subcutaneously. This latter method, however, requires special precautions. Bacelli found that in severe forms, especially the pernicious, 9 to 10½ grains of quinine injected *intravenously* was not sufficient to make it a sure parasiticide, but that it was necessary to give 15 grains.

In the administration of quinine by the mouth, which is ordinarily sufficient, there are simple precautions to be taken, which are too often overlooked. As the taste is disagreeable, physicians seek to disguise it by giving the drug in pills. This method ought not to be employed. Quinine pills should be wholly discarded; they are frequently old and hard, and in many cases are not absorbed but are carried off in the stools. A case in point is that of one of my patients, who, contrary to my directions, was given quinine in pills. Of the ten pills taken, nine were subsequently found in





the discharges. To avoid this element of uncertainty, quinine should be given in solution; or, if it is important to consider the taste, it may be given in powder or capsule.

It has been found advantageous to give a cathartic with quinine; and it has occurred to me that the usefulness of the cathartic may be due in part to the fact that it reduces the volume of the blood, and thus in effect the dose is made stronger. Warburg's tincture, which experience shows to be a good way of giving quinine, acts both upon the bowels and as a diaphoretic, and thus withdraws water from the blood in two ways.

In treating patients suffering from malaria, we should not overlook the anæmia which is so often produced by the parasites, nor fail to relieve it by appropriate treatment with iron, or in some cases with arsenic. It is desirable to examine the blood with Fleischl's hæmometer, in order to determine the presence and extent of the anæmia.

The increase of malaria in this vicinity, and the presence of certain forms of malaria which are not easily recognized by the older methods, prompt me to emphasize the importance of examining the blood for purposes of diagnosis in suspicious cases. Such examinations are of great importance when we remember that we may have malaria without intermittence, and also that we may have forms which intermit that are not of malarial origin. A very small drop of fresh blood may be examined at the bedside; or, if more convenient, the blood may be spread very thin on a glass slide, dried by treating it with equal parts of ether and alcohol, and studied later after being colored with methyl-blue. Laveran warns against negative results, and in these cases advocates repeated examinations; for experience shows that in pernicious forms, for instance, the parasites may be abundant in the viscera, although they may not be found in the blood of the finger. Councilman and Golgi have found them especially abundant in the spleen.

It gives me pleasure to recognize here the interest shown by the senior house-officer, Dr. E. G. Bryant, in carrying out my directions in the cases here described.

SUMMARY.

The important points to be borne in mind are:

(1) In treating malaria quinine should be given when the temperature falls. The temperature should be the guide, and not the chill, which may come before or after the rise in temperature.

(2) Quinine should be given at intervals rather than continuously.

(3) Quinine should be given in such a way that its absorption is assured.

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CASES OF CHRONIC INTESTINAL OBSTRUCTION: WITH REMARKS.[1]

BY MAURICE H. RICHARDSON, M.D.,
Visiting Surgeon, Massachusetts General Hospital.

(Concluded from No. 9, page [illegible].)

Case IV. Mrs. A. F. C., age seventy, I saw at Norwell, with Drs. Osgood and Dudley, on October 26, 1891. Family history good. She had always been well till eleven days before, since when there has been complete stoppage of the bowels. There has been no movement with cathartics. The abdomen has been distended and tympanitic during this time and no physical signs have been detected. No constitutional symptoms have been present. There has been constant regurgitation without odor. The patient described the onset of symptoms as a "rumbling and rattling," with pain and inability to pass anything whatever. During the summer she had had a similar experience, which lasted but a short time, which she thought due to raspberries, the first operation after this attack containing many seeds. After that the movements were not loose. The pain since a week ago last Tuesday, she said, had been somewhat worse, and had been due mainly to rattling and rumbling. Before this attack the bowels were the same as usual. She had not been running down hill at all, and there was nothing noticeable about her general health. The patient's friends thought that she had been looking as well as usual. She herself thought she was better than during the previous summer. There had been no pain whatever until the Tuesday ten days before my visit. At times she had been troubled more or less with wind in the bowels. Now her pain extends across the abdomen in the region of the umbilicus. She has passed flatus continuously.

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[1] Read before the Boston Society for Medical Improvement, December 12, 1892.

The general appearance was good, with pulse full and strong at 96, and temperature 98.4.° The abdomen was considerably distended, and peristalsis could be seen through the abdominal wall, accompanied by a good deal of noise. On rectal examination a mass could be felt in the region of the fundus of the uterus, somewhat irregular, hard and slightly nodular.

In this case it seemed to me that there was probably a malignant stricture of the sigmoid flexure. I advised operation, explaining the nature of an artificial anus. The friends decided not to subject her to this danger, and she died a short time afterwards. There was no autopsy.

CASE V. Mr. F. P. H., age thirty-nine, I saw at Billerica on December 8, 1890, with Drs. Fox, Carolin, and Lane. He had had dysentery at the age of three, from which he recovered, and was well till the age of fourteen, when he had a similar attack. Since that time he has been troubled more or less with loose dejections and occasional hæmorrhages. At times there has been pain in the left hypogastric region, with occasional distention and tenderness. In the latter part of July, while under the care of Dr. Lane, he had a very severe hæmorrhage, after which he was comfortable. He had some pain, which was excessive, in the right iliac fossa, later changing to the left. After this attack of hæmorrhage it was nineteen days before he had any movement of the bowels. The character of the discharges has varied; at times they have been covered with mucus and tinged with blood. Of late the bowels have become very much distended, and the outlines of the colon can be traced through the abdominal walls. The stools have been lumpy and small, and there has been great difficulty in passing gas. A week ago vomiting began, and has been continuous ever since. The temperature at first was subnormal. Later it went up to 100° and 101°. The pulse has been 130, small and thready. Vomiting has not been fæcal. There had been no loss of weight up to the present attack. An uncle died of cancer of the stomach.

Examination showed an emaciated man with the abdomen generally distended. No hard masses could be felt. Rectal examination was negative.

The abdomen was opened on the left side, and the descending colon exposed and fastened to the edges of the wound. Nothing could be felt by digital exploration. The bowel was opened immediately, and about four quarts of churned up fæcal matter were discharged. During his illness there had been nothing to call attention to the lungs. He died some time during the week following the operation, apparently from exhaustion. There was no peritonitis. There was a large empyema, which had never been suspected, and a cancerous stricture of the lower part of the sigmoid flexure near the rectum. The interesting feature in this case, and the complication which undoubtedly caused death, was the existence of a large collection of pus in the right pleural cavity. In a detailed history taken from the attending physician, the friends and the patient, there was nothing suggesting this condition.

CASE VI. Dr. J. C. S., age sixty-four. Examined Wednesday, August 20, 1890. This gentleman had been under observation for some time with bowel trouble. He was taken with complete obstruction on the Friday prior to the examination. There had been previous to this time some gastric disturbance, but he had never had any serious abdominal symptoms, though he might have had colicky sensations from time to time. Nothing had been observed about the nature of the movements. At times he would have attacks of distention and vomiting, which would last a few days and then disappear. The present attack, which began on Friday, was attended by vomiting, which has lasted at intervals ever since. The examination of the abdomen revealed nothing beyond the fact that it was distended. Rectal examination was negative. I believed there was intestinal obstruction, and proposed operation. Dr. Cutler saw this gentleman with me, and made a diagnosis of complete obstruction due to malignant disease. The patient, who was a physician, declined to have any operative interference, and died some weeks later under the influence of opiates.

CASE VII. Philip W., age sixty-nine, a patient of Dr. St. Clair O'Brien, of Rockport, had been apparently well up to a few weeks before my visit, Tuesday, October 11, 1892. Six weeks before, while in apparent health, he was seized with pain in the bowels, not referred to any particular spot. This attack quickly subsided, and he was as well as usual. Two weeks before, after several days' constipation, for which he had just taken an enema, he was seized with pain in the abdomen. The attack resembled the previous one, but the pain did not subside. Efforts to relieve the distended bowels by cathartics, enemata, and the rectal tube were unavailing. On Friday Dr. Garland, of Gloucester, in consultation advised operation for an obstruction which he thought was malignant and located in the cœcum.

I found the abdomen tightly distended, painful and tender. There was marked emaciation, and the general appearance was alarming. There was no physical evidence of disease by external or rectal examination. The character, location, and direction of the pain was indefinite; and I found it impossible to localize the point of obstruction. No information could be obtained by enemata or rectal tube. I therefore determined first to explore by the median line below the umbilicus. The disease was immediately recognized in the lower part of the sigmoid flexure. It was very extensive, and involved the adjacent coils. The mass was fixed and adherent at the posterior brim of the pelvis. I closed the median wound, and opened the descending colon through an incision an inch and a half long. Large quantities of fæcal matter of the usual consistency escaped, and great relief followed. The median incision healed immediately, the artificial anus worked well, and he soon began to have natural dejections. A painless illness was followed by death from exhaustion some months later. The preliminary median exploration did not add much to the danger in this case, and the information gained was of the greatest value in facilitating the subsequent manipulations.

In the formation of an artificial anus a long incision is undesirable, not only because coaptation to the skin is more difficult, but there is greater liability to hernia. I have seen complete eversion of the colon after inguinal colotomy. In this unusual condition the bowel resembles the prolapsed coil seen in herniotomies, except that the mucous coat only is visible. In the case of Dr. C. B. S., this complication arose, and was overcome with great difficulty.

Case VIII. Mr. A. G. T., of Boston, was referred to me by Dr. Cutler on September 1, 1892. About three months before, while in Europe, he had noticed for the first time an unusual irregularity in the movements of the bowels. There was a change in the number and order of evacuations, as well as in their consistency. Instead of one large dejection in the morning, there would be several, at intervals of fifteen minutes, and others during the day and evening. There was no discomfort at that time, but after about a month he began to have a little pain and diarrhœa. These symptoms were progressive, but excited no apprehension. Dr. Cutler first saw the case the last week in August, and immediately suspected a mechanical intestinal obstruction. There was a general diffused resistance in the abdomen, suggesting a fæcal accumulation. Small doses of opium produced free evacuations, after which a resistant mass could be felt low down in the left. At a certain point, indicating the right iliac region, he felt pain when the intestinal contents were passing. After having this pain an hour or two, he would have a movement, and would feel well for a number of hours. At times the dejections were solid, and about the size of the finger. The urine contained a large amount of indican. There had been some loss of flesh. Dr. Cutler advised exploration to remove, if possible, the cause of the obstruction, and kindly referred the case to me. His opinion was that there was malignant disease involving the intestine and producing partial obstruction. I saw the case several times, but was unable to find any physical evidence of tumor.

For three days before the operation, which was performed on September 10th, there was no passage of gas or fæces. The abdomen became considerably distended, and the patient distressed and uncomfortable. I had determined to explore, and if possible to excise the disease, or at least to establish an anastomosis between the intestinal coils, so as to prevent the annoyance of a fæcal fistula. A median incision was selected, not only because it seemed more probable that the disease would be found there, but because a general preliminary exploration would be more satisfactory and subsequent procedures more intelligent. The distended coil immediately above the disease was injected, adherent, and partially gangrenous. The intestinal contents had escaped through an opening just above the constriction, which was located in the sigmoid flexure, and there was an incipient peritonitis. After washing out the abdominal cavity it was found impossible to close the wound in the intestine, or to bring the bowel to the abdominal wall. The disease had extended and infiltrated several coils of small intestine, so that all were matted together, and it was impossible to make an anastomosis or to resect. To the many uses of gauze already employed in abdominal operations, I added another which was of great service in preventing further extravasation, and which I believe would have saved the patient if death had not taken place from other causes. Long strips of iodoform gauze were arranged about the opening in the bowel in circular folds by which the rest of the abdominal cavity was effectually barricaded. After being satisfactorily applied, the gangrenous opening was situated at the bottom of a well of gauze one inch in diameter, through which gas and fæcal matter could escape freely. The external wound was left entirely open. The patient rallied very well from the operation, and his condition during the next few days was quite encouraging. Vomiting ceased, and there were abundant discharges from the wound; the abdomen became soft, and the local conditions seemed very favorable; the constitutional symptoms abated, and I confidently expected that he would survive some months. In a few days, however, the intellect became cloudy, acute delirium ensued, and he died at the end of a week.

The wall of gauze was perfectly clean and unstained except in that portion next the intestinal opening. The general cavity of the abdomen had been fully protected and the external wound was covered with healthy granulations. When the pathological condition first became evident, the hopelessness of this case seemed so clear, and all known methods of surgical treatment so inapplicable, that at first I was inclined to close the abdominal wound and abandon all attempts to prolong life. The method of applying gauze which suggested itself in this case, and the perfect barrier which it opposed to further extravasation, has added a new and important resource in the treatment of the unusual complication met with in this case.

In addition to the above cases I have operated in several with similar history and pathological cause. Where the disease has been located in the ileo-cœcal region the tumor is generally perceptible, and can easily be recognized on deep pressure. One case of this kind died after futile attempts had been made to bring the open bowel to the wound. In three other cases in which, however, there were no obstruction-symptoms, efforts to excise the disease were abandoned. I have recently seen the case of a man of twenty-seven dying with symptoms of complete obstruction (a patient of Dr. Snow, of Newburyport), where death resulted from cancerous stricture of the ascending colon near the hepatic flexure, with rupture of the distended cœcum, fæcal extravasation, and collapse.

I have not considered in detail those cases of chronic obstruction due to cancer of the rectum, because the only question that arises in this condition is the formation of an artificial anus. Left inguinal colotomy is much to be preferred to the lumbar operation for many reasons. It is rapid, safe, and sure, and its situation easily accessible. Lumbar colotomy is at times a formidable operation requiring a long incision, occasionally attended by much hæmorrhage; its situation makes personal care and cleanliness difficult, and I have known serious errors to be made in opening the bowel. The occasional presence of a mesentery makes it sometimes necessary even by this route to open the peritoneum. It is nearly ten years since I have performed or seen the operation of lumbar colotomy, and I believe it to be no longer worthy of consideration under ordinary circumstances.

Inguinal colotomy at times is desirable in the ulceration of rectal cancer, even if complete obstruction does not exist. Last winter, in a case of this kind in Holyoke (a patient of Dr. Cox), the suffering was chiefly due to the passage of fæcal matter over the extensively diseased surface of the rectum. A rapid colotomy was followed by relief to this painful condition. In another case obstruction was due to a chronic intussusception. Invaginated bowel could be felt in the rectum, and had existed an uncertain time. This patient, an old man, walked into the out-patient department of the hospital complaining of his bowels. Rectal examination revealed the above condition. He was completely relieved by inguinal colotomy, after futile efforts had been made to reduce the invagination. The patient left the hospital without permission shortly after, and I am unable to give the subsequent history.

In most cases of chronic obstruction where the bowel has been attached to the abdominal wall, it is best to open at once. There is no additional danger, as far as my observation goes, and the demanded relief is immediately given. Adhesion-formation is not necessary to prevent peritonitis; a few stitches, with the distention-pressure, keep the bowel in position and prevent peritoneal infection. The joint need never be perfect enough to prevent the escape of fluid between the sutures. In one case attended by much ascites I observed fluid escaping freely between the stitches on vomiting and coughing. No bad results followed in this case, though the bowel was opened immediately. I have observed also that the escape of a small amount of fæcal matter and the soiling of the peritoneum thereby is not attended by bad results after free irrigation. Extensive extravasations are frequently followed by recovery after the careful cleansing of the abdominal cavity. I have observed the truth of this statement in cases of intestinal rupture, gangrenous hernia, intestinal resection, and in malignant disease.

Although most cases of chronic obstruction depend upon malignant stricture, occasionally the cause is from mechanical pressure. I published a case of this kind last year in the JOURNAL — that of Mrs. Julia L. The obstruction was due to adhesions between the lower part of the sigmoid flexure and the uterus, after separating which it was necessary to make an artificial anus. The relief afforded by opening the sigmoid flexure was followed by patency of the rectum and normal discharges. It was interesting in this connection to observe the closure of the abdominal opening which followed as soon as the bowel resumed its functions. The obstruction never returned, and this patient has been in very good health ever since. In other cases of intestinal fistulæ I have observed the same favorable course. A more unpleasant and annoying symptom than a fæcal fistula can hardly be imagined. As I have remarked elsewhere, this condition occurs almost always after operations upon the appendix; but they disappear, as a rule, spontaneously. This fact should encourage those who feel annoyed by the occasional presence of a fæcal discharge in abdominal operations in general. I have observed from day to day the successful efforts of nature to close these openings. Unless there is some good reason, an intestinal fistula will always take care of itself. Such results cannot be expected, of course, in cases of intestinal obstruction, nor should it be looked for where the opening is very large or where for any reason natural repair cannot take place, as, for instance, in cases of extensive eversion of the intestinal mucous membrane. Three or four months is a reasonable time to allow for the spontaneous closure of these openings. If at the end of that time there is a considerable discharge, or if there is not a distinct improvement from week to week, the bowel should be loosened up in all directions and the edges of the opening brought together and closed in the method of Lembert. It is not my intention to discuss operations for the closure of intestinal fistulæ in this connection. I would simply repeat that they are very successful and gratifying and do not seem to be attended with great danger.

At times, where there are symptoms of chronic obstruction supposed to be due to malignant disease, such symptoms are explained by the pressure of inflammatory masses or of benign growths. This is another reason for exploration in cases of doubt. I recall several such conditions, in which death was found to be due to a cause which might easily have been removed. On the other hand, I have in one case explored a distended abdomen without finding any cause whatever for obstruction. In this case a diagnosis had been made by one of my medical colleagues at the hospital, of chronic obstruction. The cause was not made out, and the condition was extremely doubtful. It seemed best, however, to explore. I examined the intestines from the jejunum to the sigmoid flexure. No pathological condition whatever was found and the wound was closed. In a few days natural operations took place, and the woman has been well ever since. In another case recently examined (a patient of Dr. Bragdon, of Milton), the symptoms of a second attack of chronic obstruction had existed some two weeks and a half. Operation was not seriously considered because the urgent symptoms of acute obstruction were not present, and the woman's condition was encouraging. In the right iliac fossa there was a boggy mass which was strongly suggestive of fæcal impaction. A few days later there was a copious discharge from the bowels, and the patient has been well ever since. She had always been of a constipated habit, and thought nothing of going a week or more without movement of the bowels. One must expect occasionally to make an unnecessary exploration, unless he delays his investigations long enough to be positively certain that the obstruction is not going to be relieved spontaneously. If one waits in every case until the distention is excessive, he operates under the greatest difficulties and disadvantages. It is impossible thoroughly to explore the abdomen or to resort to any of the radical measures for relief when the intestines are much distended. As I have already remarked, it is very unsatisfactory and very difficult to collapse the intestines after they have been exposed. If, therefore, it is possible to make a diagnosis of chronic obstruction before it has become complete, and while the bowels are still collapsed, such an opportunity should be seized for abdominal section. At such time the operation may be performed with great ease and with much better chance of success.

In conclusion, I would say that in chronic intestinal obstruction, where its cause is not obvious:

I. Exploration is demanded, first, as a curative procedure, because a pathological condition may be found admitting of relief; and, secondly, as a palliative measure, because endurable or even enjoyable life may be prolonged and suffering relieved.

II. In doubtful cases median exploration should first be performed.

III. In localized cancer, intestinal excision and suture are justifiable; if this is impracticable, intestinal anastomosis should be resorted to.

IV. If neither excision nor anastomosis are feasible inguinal colotomy should be performed — right or left, according to the situation of the stricture.

V. If none of these methods can be applied, gauze barriers should be placed about the disease, and the bowel opened in the manner described.

A REPORT OF THE LATER HISTORY OF A CASE OF RESECTION OF THE LIVER, AND OF THE LATER DISCOVERY OF ITS COCCIDIAL ORIGIN.

BY W. W. KEEN, M.D.,
Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia.

In the Boston *Medical and Surgical Journal* of April 28, 1892, I reported a case of resection of a portion of the liver, the second case in this country and the twentieth on record. The colored illustration of the tumor, I may add in passing, was for some unexplained reason, made by the engraver only two-thirds of the natural size, although described in the text as of full size.

I am glad to report that I heard from the patient in January, 1893, fifteen months after the operation. She was then in excellent health, and has never had any hepatic or gastric trouble since the operation. There is no evidence of any return of the tumor.

Prof. Coplin and Dr. Bevan, who made the pathological report classifying it as an adenoma of the bile-ducts (in which report Prof. Councilman of Johns Hopkins agreed), have recently re-examined the tumor with a view to determining whether it might not have originated from the coccidium, and therefore be a parasitic disease. The appended letter states their conclusion that the tumor was distinctly in their opinion of such a parasitic origin.

Recently in looking up the literature concerning coccidia and the relation they bear to carcinoma and other tumors of epithelial origin, we had occasion to investigate and study more minutely than heretofore, these minute organisms. In so doing, Dr. Bevan was struck with the close resemblance which certain forms bore to the cellular bodies found in the specimen of tumor from the liver which you removed, report of which is found in the Boston *Medical and Surgical Journal*, April 28, 1892. The cells to which we refer are those shown in Fig. 2 of the report. By reference to Fig. 108 and Fig. 109, embracing those of the cross-section of a coccidium nodule and the epithelium of the psorosperm nodule, pages 208 and 209, "The Parasites of Man," Leuckart, translation by W. E. Hoyle, there will be found two pictures which correspond entirely to the histological structures of the cysts in the liver which you removed and the cells shown in the epithelial layers in and beneath the columnar cells (Fig. 109) are identical with some of the cellular elements shown (Fig. 2) in your reported case. The dendritic character of the growth, as we reported at that time, is identical with that shown in Fig. 108 of Leuckart; and if one compares Dr. Bevan's drawing in your article (Fig. 3) with the illustration in Leuckart, the close resemblance between the two is at once apparent. Leuckart calls attention to the resemblance between a coccidium nodule and papillomatous elevations and the facility with which the coccidium nodule may be mistaken for and described as a papillomatous neoplasm. We re-examined the sections stained from the tumor, and find in them areas identical in their structural composition and arrangement with the illustrations given by Leuckart. Histologically, these tumors are papilliferous cyst-adenomata; but in our opinion the exciting cause is the hepatic coccidium.

Very sincerely yours, Coplin and Bevan.

Those who will compare Fig. 108 and Fig. 113 E. and F., from Leuckart (Hoyle's Translation), and Figs. 2 and 3 from my paper, will be very much struck with the similarity of the appearances. Such an origin of cystic disease of the liver is very rare. Leuckart states that the first case was reported by Gubler in the *Gazette Medicale de Paris*, 1858, p. 657. In this there were about twenty tumors, the largest being from twelve to fifteen centimetres in diameter. The patient died from peritonitis, precisely like the infected rabbits, in whom the coccidium is very common. Leuckart reports a second case in the human liver, discovered by Dressler, two by Perls, and one by Virchow.[1] Eimer[2] reports two cases occurring in the human intestine. In view of the recent papers on the psorospermial origin of sarcoma by Clark[3] and on the coccidial origin of cancer by Metschnikoff and Plimmer[4] and Galloway,[5] as well as a number of other similar papers, the present observation is of especial interest.

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Clinical Department.

CASES OF EXTRA-UTERINE PREGNANCY.[1]

JOHN HOMANS, M.D.

I find records of four cases of extra-uterine pregnancy operated on by me: one seven years after conception, one at about the fifth or sixth month of pregnancy, one at about the second month, and one in the fourth week.

The first case was reported at length in the Boston *Medical and Surgical Journal* for May 20, 1886. The bones, almost complete, were carefully mounted for me in this box by Dr. Newell. The patient would naturally have been confined in March or April, 1880; if the fœtus had been in the uterus. Her size did not diminish, but she was able to work in the summer of 1880, and worked till February, 1886. I will not decribe this case in detail, as it has been already published and is accessible. At the operation, March 8, 1886, I found a rotten, adherent, ovarian cyst. When this was emptied and sponged out, I found another cyst, extending from one pelvic brim to the other, and inseparable from the bladder and neighboring parts. In color the tumor resembled the uterus, but was of a darker red, and its wall in the centre, over a collection of fluid, seemed about half an inch thick. It was about the size of a man's head and occupied the left side of the pelvis rather more than the right, though it was nearly central. On feeling, I could not touch a Fallopian tube, ovary or uterus, nor could I pass my hand into the pelvis around the cyst any more than I could pass my hand into the thorax from the abdomen through an unruptured diaphragm. The cavity was opened, and about five pounds of very offensive fluid ran out. This was a fatty emulsion without any pus. The sac was one of extra-uterine pregnancy; and at its lower part I found these bones, which Dr. Newell has so beautifully mounted. A few were lost in the sponges while bailing out the fluid. The case was fatal. The woman was septic when first seen and very feeble.

The second case was one in Cambridge, to which I was called by Dr. Hildreth. The case is reported in the Boston *Medical and Surgical Journal* (Vol. CXXIV, 1891). The patient was the wife of a physician in a neighboring State, and while here on a visit was attacked with sudden pain and collapse at about 10 A. M. I saw her at 12, and immediately opened the abdomen, removing about two pounds of coagulated and liquid blood. The rupture was in the right Fallopian tube, and the specimen was given to Dr. Whitney, who found the villi of the chorion in it. The patient had lost so much blood that death seemed inevitable, but I transfused a salt solution and her life was prolonged by it. She died the day following the operation. No autopsy was allowed. This is one of the earliest cases of the rupture of a fœtal sac on record, occurring in the fourth week of pregnancy.

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[1] Read before the Obstetrical Society of Boston, November [illegible], 1892.

[1] Virchow's Archiv, [illegible], Bd. [illegible], p. [illegible].

[2] Ueber die ei- oder kugelförmigen sogenannten Psorospermien der Wirbelthiere, Würzburg, 1870.

[3] British Medical Journal, [illegible], p. [illegible].

[4] Lancet, [illegible], pp. [illegible] and [illegible].

[5] Lancet, [illegible], p. [illegible].

My third case was an unruptured extra-uterine fœtation at about the fifth or sixth month; and the body of the child, with the umbilical cord, I here show you. The patient was twenty-six, married. She had had two artificial abortions. By external palpation two hard, rounded masses were felt in the pelvis, each about the size of an orange; one was on the right and the other on the left, with a sulcus between. There was considerable tenderness on the right side. The tumor (right) was slightly movable. By vaginal examination the left tumor was thought to be the uterus. The right tumor felt somewhat fluctuating. The last menstrual period had been on November 17, 1891, four months and a half before the operation. There was some milk in the breasts. She had vomited more or less. On December 2d she had a slight flowing, and since that time considerable pain in the right iliac fossa, and two attacks of "inflammation of the bowels." She had been in bed for six weeks. Her abdomen had been distended, her bowels constipated, and for two months she had been flowing a little all the time. Her abdomen was quite tender and her pain was severe all the time. The diagnosis was extra-uterine pregnancy.

Operation, April 1, 1892. On opening the abdomen a round swelling covered with a thick blue-looking plexus of vein was seen. It seemed like a swelling of the right Fallopian tube, with an adventitious deposit added. The falciform edge of the right broad ligament arched over the side of the swelling, and was continuous with it in the pubic region. The side, or wall, of the tumor was more or less separated from the healthy peritoneum behind and on the outer side until a pretty firmly fixed portion was encountered in Douglas's space. The enlarged uterus was pushed over far into the left pelvic and iliac region. As the tumor could not be lifted up bodily, it was aspirated, and several ounces of yellowish-brown fluid were drawn out. The broad ligament and Fallopian tube were compressed between long forceps in the pubic region, and were divided between the forceps. Several arteries were tied in each portion. The cyst was then opened, and found to contain a fœtus. This was removed, and the cord traced to the placenta, which was situated deep in the pelvis behind or above the rectum. Most of the placenta was removed, with considerable hæmorrhage. More or less of the fœtal sac, which was easily torn and was about one-third of an inch thick, was removed. The only troublesome hæmorrhage was from this friable structure, which was finally securely tied. The cavity of the sac was stuffed with gauze, and the wound was sewed up around the protruding gauze, with extra stitches to be tied when the gauze was removed. The fœtus was apparently a female, seven and one-half inches long and perfect. Its eyes were shut and covered with unruptured cuticle. Several of the nurses and students thought they saw it open its mouth, but I did not see any such movement. On the third day the gauze was removed under chloroform anæsthesia. A glass drainage-tube was put in the sac. There was a little flowing from the uterus. A cough troubled her a great deal from the time of the operation. The cavity suppurated, and the edges of the wound separated. Subsequently the bowels protruded somewhat, and this was aggravated, and perhaps caused, by the cough. She did not leave the hospital well till July 8th, three months after the operation. The fœtus has been preserved in the Warren Museum and Dr. Whitney has been kind enough to bring it here.

My fourth case was that of a married woman, twenty-seven years old. She had borne three children, the youngest of which was six years old. A hard swelling was found in the region of the bladder, extending upwards about three inches above the pubes, and very tender. The tumor was not movable. The posterior cul-de-sac was obliterated, and bulging down into the vagina was a fluctuating tumor, rather larger on the left side. The uterus was crowded forward, with the cervix under the pubes. She had been flowing more or less for nine weeks; had had some pain in the breasts, from which a little fluid could be squeezed; at times she had vomited. Six weeks before her entrance into the hospital, after a few hours of moderate flowing at her regular period, she was suddenly seized with severe pain and cramps in the uterine region, very severe and coming on every ten minutes. The flowing increased, and has continued since. A diagnosis of probable extra-uterine pregnancy was made.

Operation, June 25, 1892. The smooth, distended peritoneum of the left broad ligament was seen; and at a sort of cicatricial-looking corner a few masses of bronzed and black coagula rested where the sigmoid flexure, the broad ligament and the origin of the Fallopian tube came together and were adherent. The uterus was found with the swelling, and lay to the left. The swelling was punctured on the right, and about four ounces of clear serum was withdrawn. The right broad ligament was then opened, and about a pound of black clot and some fluid black blood was removed. At length the abdomen was cleansed, and a thickened movable mass in the side of the sac was removed after its base and attachments had been clamped with two pairs of forceps, which were left on, and by the side of them was placed a glass drainage-tube. The mass proved to be the ruptured right Fallopian tube, in which Dr. Whitney found the villi of the chorion. The clamps were removed on the third day. The patient went home well about the first of August.

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THE PELVIC CONDITIONS FOUND AT A CŒLIOTOMY FOUR YEARS SUBSEQUENT TO AN ECTOPIC GESTATION.[1]

BY C. P. STRONG, M.D.

IN July, 1888, I was asked by Dr. Mead, of Everett, to see a patient with the following history: Menstruation had been regular up to the preceding month, at which time flowing began and continued through the month, with great abdominal pain increasing constantly and steadily. The woman had been married eight months, had no subjective symptoms of pregnancy, age twenty-two. I found by vaginal examination a large mass, filling the whole lower part of the pelvis, dense, elastic and fluctuating.

The abdominal pain had come on with great suddenness and great prostration. The character of the mass, its rapid increase in size, and the character of the pain, led me to diagnose a ruptured ectopic gestation and advise immediate operation.

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[1] Read before the Obstetrical Society of Boston, December 10, 1892.

She was removed to the hospital, and I saw her the following day in consultation with the gentleman under whose service she came. The mass had, during these twelve hours, worked down posteriorly, so that it bulged well into the vagina and was evidently directly between the rectum and vagina. By aspiration at the most dependent part of this tumor, perhaps a quart of dark-colored blood was removed. This decreased materially the size of the tumor, and the patient was put to bed. She made a normal convalescence, and I saw her about two months subsequently, finding still a large mass, especially on the right side.

The patient did not come under my observation again, or under that of any of my friends until April, 1892, when I was asked by Dr. Conroy, of Everett, to see her, as she was suffering from general peritonitis. She had in the meantime been twice confined.

The first child was eighteen months old, the present one six weeks, and the peritonitis was subsequent to this last confinement. I found her extremely weak, a large mass filling the whole lower part of the pelvis, dense, without points of fluctuation, but suggestive rather of general purulent inflammation; marked tympanites. The temperature chart indicated the same. Her condition had been so rapidly growing worse that there was evidently a fatal issue to be expected unless operative measures might be successful. I operated, and the patient lived four days. She was getting on nicely as regards temperature, but there was inability of the heart to carry on its work, and she gradually sank and died from exhaustion.

The condition of the pelvic contents was interesting. The tubes and ovaries were everywhere completely bound together by fresh, and also by old, adhesions. It seemed incredible that pregnancy could have taken place through tubes and from ovaries which were so imbedded in old masses of organized lymph. The adhesions also included a greater portion of the intestines. On the right side especially were these adhesions particularly firm.

It was one of the most difficult cases of "digging out" to remove the appendages that I have encountered, and could not have been safely done without employing Trendelenburg's position. I had hoped that by some means it might be indicated just where the hematocele took place four years before and just what result had been left, but except that there had evidently been existant for a long time the condition of pelvic peritonitis, with organized lymph in firm bands holding down the broad ligaments, with thickening about and around the broad ligaments, no further evidence could be detected.

The tubes were so torn during their removal that it would be impossible to say whether they showed any cicatricial remains of former lacerations or not. Their calibre did not show much increase in size. There had evidently been recent infection spreading from the tubes to the peritoneum, which was the cause of this general peritonitis, because scattered everywhere were deposits of purulent lymph, which thorough drainage and irrigation proved ineffectual in removing. I do not believe a late operation in general septic peritonitis, as a rule, offers much hope; but in this case I hoped that I might do something to relieve it. It was the wish of the patient herself, her friends and her physician that the attempt might be made.

Statistics of a few operators show considerable success. Statistics of more, and perhaps fully as honest reporters, show that where we have a condition of general septic peritonitis well advanced, then operative measures, even with drainage, can rarely accomplish entire removal of the conditions, thus insuring the return to health, or even prolonging life.

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A CASE OF EXTRA-UTERINE PREGNANCY.[1]

BY H. P. MAKECHNIE, M.D., WEST SOMERVILLE, MASS.

Mrs. P., the subject of this paper, was a healthy young woman, twenty-five years old, with good family history. She had one child, nine months old, which was still nursing. Menstruation had come on a month previous to the time at which I was called, and was normal. She thought it was again in progress at the time I was called, June 12th. About an hour previous to my arrival she was seized with severe pain in the lower abdominal region. On my arrival she presented a picture of impending death: almost imperceptible pulse, pinched features, corpse-like pallor, clammy skin, cold extremities; in fact, collapse — called by some, abdominal collapse. I reached the diagnosis of rupture of the Fallopian tube by exclusion. Nothing which I had ever seen approached this case in its sudden severity. It seemed to me that her condition was largely due to shock. The respiration was not sighing. The pulse told of shock. (I am unable to accurately describe it.) I gave at once a hypodermic injection of one-sixth of a grain of morphia and one two-hundredth of a grain of atropia, and repeated it every ten minutes till I had given half a grain of morphia. The patient began to improve.

I told the attendants that her life depended upon not allowing her to move for several hours, and then very gently. I refrained from making an extended pelvic examination. This was in the evening. Next morning everything looked so favorable, I concluded to wait, and give the arteries a chance to heal.

In eight days I made a pelvic examination quite thorough. There was no tender spot; no tumor; nothing abnormal to be found. She began to get up and go about the house.

In sixteen days from the first attack she had more trouble, more pain, and, as events showed, hæmorrhage.

The morning of June 29th she was worse. A bloody discharge again appeared, coming from the uterus. I decided that the time had come for active treatment, and called in Dr. E. H. Stevens, of North Cambridge. He counselled an immediate operation, and kindly consented to operate, which he did in the afternoon, with the assistance of Drs. Taylor and Somers, of North Cambridge, and the reader.

In the meantime the patient had grown alarmingly worse. A hypodermic of morphia was necessary to quiet her pain. She took ether well, and when once under it, the operation was performed with hardly a smell of ether. Hypodermics of brandy were given frequently. On opening the abdomen, it was found to be full of blood-clots, some so firm that they were probably formed at the first attack, others of recent origin. The right tube was found ruptured, as seen in the specimen. It was feared she would not survive the operation; but her vital forces proved to be unusually good. Digitalis was administered by the mouth as soon as she could take it. She slept quite well that night. Some pelvic inflammatory process followed the operation, and prolonged the convalescence; but she finally recovered, and is at the present time in perfect health.

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[1] Read by invitation, before the Obstetrical Society of Boston, November [illegible]

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Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

RECOVERY FROM ACUTE INFECTIVE ENDOCARDITIS.[1]

RECOVERY from malignant endocarditis is so rare that a case reported by Cauthy is worthy of brief mention, as there seems no reasonable doubt of the diagnosis. This was based on the extremely variable temperature, the rigors, the cardiac murmurs and their variability, the enlargement of the spleen, the profuse sweating, anæmia and progressive emaciation. The case accorded very well with the pyæmic form of the disease. The patient was a male, twenty-one years old, and was in St. Bartholomew's Hospital from June to September. The right side of the heart was the one mainly, if not independently, affected, a rough systolic tricuspid murmur being permanent. The administration of perchloride of mercury seemed to have had some influence in determining the result.

A CASE OF ISOLATED PRIMARY TUBERCULAR PERICARDITIS.[2]

Virchow says that isolated primary tubercular pericarditis is in his experience a very rare event, as he has only seen a case from time to time, with intervals perhaps of years. The first case which he saw occurred in an old man of eighty, who showed no other trace of tuberculosis, and impressed him strongly as evidence against the view then prevalent of the prior existence of a specific dyscrasia as the essential condition of local tuberculosis. In most of the cases which he has seen the effusion of blood into the pericardial sac has been so great as to suggest a hæmorrhage from rupture of the heart. The case which he reports occurred in a man of forty-nine, who eight weeks before was said to have taken cold. On admission to the hospital, five weeks later, a diagnosis of hydropericardium was made. The legs were œdematous and there was an effusion in both pleural cavities, and ascites. There was no fever and but very little dyspnœa. At the autopsy the pericardium was enormously distended with bloody fluid, and the whole heart was considerably hypertrophied. The walls of the pericardial sac were very much thickened, and in their deeper layers, both on the parietal and visceral sides was an enormous eruption of tubercles in which many giant cells and a few bacilli were recognizable. There could be no question that the case had run a latent course as a fibrinous pericarditis for many months with the formation of connective-tissue rich in blood-vessels. This had led to vascular adhesions and thickening, the eruption of tubercles being secondary.

THE ABSENCE OF ORTHOPNŒA IN (FATAL) CARDIAC DILATATION, ESPECIALLY WHEN AFFECTING THE RIGHT SIDE.[3]

Handford reports four cases of death from cardiac dilatation which occurred without development of orthopnœa; dropsy was present in only one case, and in two there was no material quickening of the pulse. He says that a completely satisfactory explanation of this condition is still wanting, but "it would appear that the upright position gives relief chiefly in failing compensation in valvular disease and in the failing heart of renal disease; but that in dilatation, especially when the right side is affected, and in degenerations of the cardiac muscles, as in anæmia, after fevers, diphtheria, septic poisoning, etc., the tendency to faintness produced by the upright position more than counterbalances any other advantages."

INSUFFICIENCY OF THE PULMONARY VALVES.[4]

Gerhardt says that since the time of Skoda pulmonary insufficiency has been looked upon as the rarest of the valvular lesions. He could collect only 29 well-authenticated cases, of which only a fifth could be attributed to rheumatism, the others resulted from other causes, puerperal fever, trauma, gonorrhœa, syphilis, etc. Congenital cases are common. The thin valves of the pulmonary artery are easily injured, and may thus readily disappear or become pierced by holes, often by pressure from aortic aneurisms or the like. Uncomplicated cases are very rare, as they are usually associated with other valvular lesions, most frequently aortic. At times the insufficiency is merely relative, owing to dilatation of the artery. It may develop at any period, from earliest childhood to advanced old age.

As physical signs of this condition, we find a broadening of the right heart from a low position of the right ventricle, which is further favored by a lengthening of the pulmonary artery. The diastolic murmur is best heard at the left sternal border, is increased by expiration, and has a deeper tone than that of aortic regurgitation. Embolic processes in the lungs and hæmorrhagic infarctions are points of distinction. The patients usually appear rather pale and the pulse is somewhat increased. The insufficiency must lead to the same alterations in the pulmonary arteries that aortic insufficiency does in the arteries of the body, that is, to dilatation and tortuosity, which might be shown in an increase in the volume of the lung and a loss of elasticity. If a manometer be placed in one nostril and the other be closed while the breath is held, a curve approximating the pulmonary pulse is obtained. In healthy people or in those with aortic insufficiency, this is low with a small secondary elevation just behind the apex, while in the lesion under consideration it is dicrotic. If one listens at a distance from the heart, for example at the edge of the right scapula, a clear double sound is heard; yet this may also be found in high degrees of aortic insufficiency. Sometimes at a distance from the heart the respiratory murmur will be heard interrupted and jerky.

Senator, in the discussion which follows the paper, said that the absence of a diastolic murmur over the abdominal aorta was also a point in the differential diagnosis.

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[1] Lancet, 1891, i, p. 1375.

[2] Berl. klin. Woch., 1892, p. 1315.

Lancet, June 25, 1892.

[4] Berl. klin. Woch., No. 20, 1892.

TREATMENT OF EMPYEMA BY PUNCTURE-DRAINAGE.[5]

After a brief description of the various methods of treating empyema, Eberle describes Bülan's method of puncture-drainage, which has been exclusively practised in Sahli's clinic since 1889. From a consideration of the results obtained in nineteen cases, he comes to the conclusion that this method, if practised early, gives most satisfactory results, which well bear comparison with the radical operation. It especially recommends itself to the general practitioner on account of its simplicity.

INTRATHORACIC AUSCULTATION.[6]

Dr. B. W. Richardson says that while examining a patient for œsophageal stricture the thought occurred to him to attach a stethoscope to the end of the œsophageal tube. He learned thereby that the œsophagus was clear throughout its entire length, and corrected a suspicion that there was at one point a contraction in the passage. When the tube entered the stomach, he detected a peculiar seething or sibilant sound, which was new to his ear, together with a friction sound produced by contact of the tube with the walls of the stomach, and a series of other sounds, probably due to the contraction of the muscular fibres of the stomach. On withdrawing the tube he heard the movements and sounds of the heart much more plainly than by the ordinary method of auscultation. The internal sounds were not so resonant; they were as loud, but duller and more alike in quality than one is accustomed to recognize. The lines of inquiry in which this plan promised to be most useful practically lie in the detection of œsophageal stricture, in its possible application for the definition of diseases of the stomach, the elucidation of the character and position of thoracic aneurisms, the diagnosis of some forms of heart disease, of friction sound, pericardial and pleural, and explorations conducted by it in the pharynx. The limitations in its use are the objections of the patients to the passage of the tube, the retching which it occasionally produces, and the dangers induced in exceptional cases from running a tube into the stomach. Regarding the mechanical means, a full-sized flexible tube with one large side opening had succeeded best, but a water-catheter might possibly be found to be more successful.

TUBERCULOSIS AND TYPHOID FEVER.[7]

Heuschert records two cases in which typhoid was complicated by tuberculosis, and gives the results of a careful search through the literature of the subject regarding the mutual relationship of the two diseases. He finds no reason to suppose that a tuberculous patient is protected in any way from typhoid. On the contrary, patients with slight local changes in the lungs who are in good general condition, or those with healed foci, behave no differently from healthy people regarding typhoid infection; while a latent tendency to tuberculosis may be aroused by a severe typhoid, and go on to rapid phthisis. This is especially the case in war times where the patient's strength has been previously exhausted and where the tuberculosis ensuing is apt to take the acute miliary form or that of florid phthisis.

THE RELATIVE IMPORTANCE OF CONTAGION AND HEREDITY IN THE ETIOLOGY OF PHTHISIS.[8]

Riffel has collated the statistics of births and deaths of all the families of a small district in Germany with special reference to this point, and from them comes to the following conclusions: There are very few families which in the course of time are not attacked by consumption, and when it once enters it is usually progressive, and by marriage propagates itself in other families, sometimes, however, sparing whole generations. The death-rate among children in consumptive families is very great, especially where both parents have an hereditary taint; if one only is affected, it is immaterial whether it be the father or mother. The transmission of the disease from one person to another, or from husband to wife, or *vice versa*, or through dwelling-houses, could not be proved to have taken place. The children of phthisical parents often developed consumption, even if they had left their parents' house while still perfectly well, and had gone to other dwellings or even other localities.

CHRONIC PULMONARY PHTHISIS IN LATER ADULT LIFE.[9]

Mackenzie says that consumption in later adult life is not so uncommon as it is generally supposed, but that its prevalence is not recognized, partly because elderly people with chronic disease are less liable to gain admission to the hospitals, and partly because the symptoms are not nearly so characteristic as at earlier ages. The patients' complaints are often so misleading and the thoracic symptoms so slight that the disease may be overlooked. He draws the following conclusions, which are largely based on a study of forty-two fatal cases between the ages of fifty-five and seventy-two, in which a post-mortem examination was held.

The onset of the disease is usually insidious. It is essentially chronic in form and in a considerable number of cases is limited to one lung, the physical signs being at times best marked at the apex posteriorly. It more commonly attacks males than females and the influence of heredity, although less marked, can still be traced in some of the cases. Tubercular disease of the larynx and intestines is found in as great a proportion of the fatal cases as in earlier life. Cough with emaciation and debility should always suggest the possibility of phthisis in an elderly person; but as the disease is sometimes complicated with chronic bronchitis and emphysema, which so mask the physical signs that it may be overlooked, the sputum should be examined for bacilli. Hæmoptysis is less frequent, except in the later stages, when there is considerable danger of profuse and possibly fatal hæmorrhage. The duration of the disease is essentially protracted, but difficult to determine clinically on account of its gradual onset. The maintenance of strength and nutrition and the quietness of the pulse are most encouraging as regards prognosis, while the opposite condition and the occurrence of complications are of grave omen.

PLEURAL EFFUSION, WITH DISPLACEMENT OF THE HEART.

Symes concludes an article on this subject in the Dublin *Journal*, July, 1892, as follows:

(1) Displacement of the heart may occur as early as the fourth day; a moderate effusion can produce it; and it may be preceded and accompanied by fainting on exertion.

(2) It occurs before protrusion of the intercostals,

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[5] Schmidt's Jahrbuch, 1892, No. 11.

[6] British Medical Journal, November 5, 1892.

[7] Centralbl. f. klin. Med., No. 40, 1892.

[8] Berl. klin. Woch., 1892, p. 1154.

[9] Medical Press and Circular, October 5, 1892.

and the heart may even pulsate beyond the right nipple while they are still unaffected.

(3) Owing to the peculiar basic attachments of the heart, the apex can move in the arc of a circle, right or left; the heart appears to rotate upon its long axis; and this rotation in dexiocardia may increase the distinctness of its sounds and impulse.

(4) The heart does not return by the same route, but on a plane somewhat higher, and this course, whether real or apparent, is dependent upon the non-expansion of the lung.

(5) Extreme displacement may exist without either bruit or palpitation, and does not *ipso facto* necessitate paracentesis.

(6) It is extremely dangerous for the patient to undergo any exertion when it is so displaced, owing to the many risks of sudden death.

(7) Decubitus on the sound side, or in a semi-dorsal position inclined to that side, appears to lessen the tension of the fluid; it is always a grave symptom and an urgent indication for paracentesis to relieve tension.

(8) *Le bruit Skodique* is caused by the compression of healthy living tissue against the bronchus, thus acting as a better conductor of sound; it is closely connected with high tension and disappears when the intra-thoracic pressure falls.

(9) The dangers of displacement being intimately connected with the condition of the opposite lung, the extent of dislocation *per se* forms no criterion — some slight displacements ending fatally while other extreme ones are borne with impunity.

LOCALIZATION OF EARLY PHTHISIS TO THE APEX OF THE LUNG.[10]

Campbell, in discussing the question as to why phthisis usually begins in the apices in man, says that the chief reason is that in him the extreme apex is extra-thoracic and not intra-thoracic. It is therefore "under exactly opposite conditions, as regards pressure, to the rest of the lung; in inspiration the intra-thoracic lung is under a pressure less than that of the atmosphere, but the apex is subject to the atmospheric pressure which is communicated to it by the soft parts covering it. This is forced downward into the thoracic cavity, with the result that it becomes slightly compressed, and air is forced out of it; this air meets the incoming air from the trachea and large bronchi, and the pressure becomes equalized. The result of this is that on inspiration only a small quantity of oxygenating air reaches the apex. Again, on expiration, the pressure in the apex being that of the atmosphere, and hence less than that of the rest of the lung, air rich in carbon dioxide but poor in oxygen is forced into it. From the above it follows that the contents of the apex are under most unfavorable conditions for becoming aerated, and thus the vitality of its tissues is lessened, and their resisting power lowered. Further, the same conditions which interfere with the elimination of carbon dioxide also operate to prevent secretions and excretions from finding their way out of the apices; and this retention, and the resulting decay and decomposition of waste products, must still further lessen the power of resistance of the tissues to the attacks of bacilli." He is further convinced of the truth of his theory by the study of the anatomy of the chest of monkeys, in whom, owing to the length of the first rib, and more especially to the backward direction of the clavicle, the entrance to the thorax is so blocked that it is impossible for the apex of the lung to rise out of the thoracic cavity, and in whom, though phthisis is common, the apices are, as a rule, less affected. If this view be correct, it is evident that the contraction which takes place at the apex in phthisis is of the greatest value for the purpose of cure, for by its means the extra-thoracic portion may be drawn down so as eventually to become intra-thoracic. If it were possible to hasten this desirable result by excising the extreme apex, it is probable that in cases of early phthisis cure would take place far more frequently than it does at present.

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[10] Guy's Hospital Reports, xlviii, p. 33.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular Meeting, December 10, 1892.

Dr. A. Worcester reported

CASES OF EXTRA-UTERINE PREGNANCY.

Dr. Worcester said that it was certainly strange that he had come across so many cases of extra-uterine pregnancy, unless it were the case, as he believed, that the affection is much more common than is generally believed.

Dr. C. P. Strong spoke of the difficulties of diagnosis in some cases, while in other the symptoms were perfectly clear and distinct. On the other hand, he had seen cases which were not extra-uterine pregnancies where the symptoms seemed clearly to point to that affection. From the out-patient department at the Massachusetts General Hospital he has sent into the house only two or three cases of this disease in the earlier months. He sent in another case with classical symptoms of ectopic gestation which proved to be an ovarian tumor. He sees a number of cases of salpingitis with severe attacks of pain suggesting extra-uterine pregnancy; and he is inclined to think there are many more cases of extra-uterine pregnancy that go unrecognized and get well with palliative treatment. If the true nature of the case is understood, he believes the proper treatment to be surgical. The danger comes in letting the cases go too far, exposing them to the risk of rupture, owing to uncertainty in diagnosis and consequent lack of courage to operate. In operating he has met with five or six cases; and he knows of three cases treated by electrolysis. The latter treatment is a long and tedious one, and exposes to great dangers; and he is convinced that the surgical treatment is the only proper one.

Dr. F. H. Davenport has been on the watch for cases of extra-uterine pregnancy, especially of late years since so many have been published. He has seen a comparatively large number where the symptoms were characteristic of the trouble, but all have cleared up in a few weeks; and he has been forced to the conclusion that a large number get well of themselves, or that the early symptoms laid down in the text-books are not so pathognomonic as has been supposed. In private practice he has not met with a case that went on to serious symptoms; and he is in doubt whether it is better to operate in these cases so as to anticipate further trouble, or to watch and wait. He is inclined to the latter, provided prompt treatment can be secured at the time of the rupture.

Dr. J. Stedman, in over 2,000 cases of midwifery has never seen a case.

Dr. C. M. Green could only repeat what Dr. Davenport had just said, namely, that he had made a special point of being on the watch for these cases, and in a large hospital experience had never met with a case.

Dr. Edw. Reynolds suggested that these cases are, for the most part, sudden emergencies, and would not present themselves at an out-patient clinic; while Dr. Worcester's cases were from a large private and consulting practice of his own and of his partner's.

Drs. D. W. Cheever and **W. L. Richardson** had not seen any cases.

Dr. Washburn said that in a case of tubo-uterine rupture reported by him last year the only symptom had been uncontrollable vomiting. None of the classical symptoms were present. She had had ovarian pain for six or seven months, which returned after her recovery from the operation. In another case of his that he reported last year there had been no symptoms till the rupture occurred.

Dr. A. D. Sinclair had probably met with two cases of this trouble some years ago, both fatal.

Dr. C. E. Stedman had seen two cases. One died; the other passed fœtal bones by the rectum some six months or a year later.

Dr. S. L. Abbot had not seen a case.

Dr. J. G. Blake had no doubt that he had seen many cases in years past, but he had never recognized any. He does not see why any community should be favored in the rareness of this trouble, and he believes that the small number seen in Boston has been due to a remissness in diagnosis.

Dr. R. H. Fitz said, as regards the relative frequency of these cases, he himself had seen six cases of intra-peritoneal hæmorrhage post-mortem, and he had been called in consultation in three or four others which were saved by operation. Hence, he is able to state that the disease is not so very infrequent in this vicinity, and would thus bear out the experience of Dr. Worcester.

Dr. A. Worcester said that the diagnosis was rendered very certain in his cases from the fact that a ruptured tube was found in all the cases, with one exception, and that Dr. Whitney had considered a case of ovarian pregnancy.

Dr. B. E. Cotting, in an experience of over 3,000 obstetrical cases, had not met with one of extra-uterine pregnancy.

Dr. C. P. Strong said that our knowledge of the female pelvis and improvements in methods of diagnosis has developed tremendously in the last few years. Hence we are able to recognize conditions now that were unrecognized in former times. This explains the apparent greater frequency of cases of extra-uterine pregnancy at the present day.

Dr. Strong read a paper entitled

PELVIC CONDITIONS FOUND AT A CŒLIOTOMY FOUR YEARS SUBSEQUENT TO AN ECTOPIC GESTATION.[1]

Dr. A. Worcester regretted very much that Dr. Strong was opposed to operating in septic peritonitis, but would certainly applaud him for operating in this present case.

Dr. C. P. Strong said he did not intend to put himself on the side against operation, for he thinks it is often the only thing to do, but it generally does no good. The post-mortem in these cases shows how impossible it is to drain the peritoneum with its numerous adhesions and pockets of pus everywhere — behind the liver and spleen for example.

Dr. A. Worcester objected to this autopsy point of view; the point being is there a possibility of recovery if the case is operated on in the course of the disease?

Dr. Strong replied that, when the disease is beginning, there is most certainly a chance to cure by operation and he would approve of an operation then; but in advanced cases it is utterly impossible to clean out and drain the peritoneum, and with so much septic material behind, a fatal issue is certain.

Dr. Worcester said he did not believe there was a general peritonitis without a beginning localized peritonitis, and he wished to insist that laparotomy was the proper treatment for beginning peritonitis.

Dr. R. H. Fitz said that the amount of pus and fibrin in fatal cases of septic peritonitis varies very much. This trouble almost invariably starts from some localized point.

Dr. Harrington said there are moderately severe cases of septic peritonitis which are not moribund and can be benefited by an operation; and he knew of several cases that had been operated on successfully that otherwise would have died.

Dr. Strong was of the opinion, that, if the peritonitis was localized, an operation was of use, but otherwise if the trouble had become general.

Dr. Harrington said the difficulty was that one could not tell in advance how far the disease had gone.

Dr. Worcester said he had had recoveries where the abdomen was full of pus and flakes of fibrin, and he believed in operating in any case not actually moribund.

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Recent Literature.

Text-Book of Nervous Diseases. By Charles L. Dana, A.M., M.D. With 210 illustrations. Post-octavo, pp. xii, 524. New York: William Wood & Co. 1892.

In writing this book the author tells us that "each subject has been taken, all the available facts regarding it ascertained, the writer's own experience collated, and with the data thus gathered the chapters have been written." To a task so great as this, the author has added another almost as great, to condense this mass of knowledge into one comparatively small and concise volume. For both tasks the author is well fitted; to long experience in the fields of clinical observation and teaching he has added much valuable original work in anatomy and pathology as well as a wide knowledge of neurological literature. The result is not merely a compendium of other men's knowledge, but a book which is at once concise, complete, and in the best sense original. The work of other observers is fully noted, but to that he adds something of his own.

The plan of the book is simple. An introductory section treats of the general anatomy of the nervous system, its diseases, diagnosis and methods of examination, ætiology, pathology and treatment; then follow sections on the diseases of the nerves, the cord and the brain, and the functional diseases. A sketch of the anatomy of each portion of the nervous system is given before the diseases are considered, a sketch which is remarkably clear and full. The author speaks somewhat *ex cathedra*, and discussions of controverted points are omitted; often, too, he takes somewhat advanced ground in dealing with questions of pathology, as, for instance, when he deals with the pathology of epilepsy or chorea; but his statements are always founded on a firm basis of knowledge, and are usually in accord with the most recent views. He seldom speaks without proof for his statements, and speculations, hobbies or fanciful hypotheses as to ætiology and treatment find little favor. We have noted but little to take exception to in his statements, and, in spite of the small size of the work, but few omissions. Occasionally the need for brevity has led to what seems too great condensation; we sometimes wish for a little fuller discussion, or a little more elaboration in the directions for examination. This is notably the case in the section on electricity, which is unduly brief; but on the whole, such condensation is hardly to be criticized.

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[1] See page [illegible] of the Journal.

Dr. Dana has given us the fullest, the most concise, and altogether the best manual on nervous diseases that has yet appeared, not only for the student and the general practitioner, but also for the specialist. It has stood the test for the past two months of being the first book consulted on doubtful points arising in actual work, and it has seldom, if ever, failed to be a useful guide. We regret to add that the work is presented in an unworthy dress. The illustrations are often not well done, and the typography and paper are not pleasing. The familiar cuts of the motor points on p. 59, for example, are rendered valueless by the diminutive size, the omission of the names of the muscles, and the general cheap aspect of the presswork.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M.D. (Lond.), F.R.C.P., Physician to the General Hospital for Sick Children, Manchester, etc.; and G. A. Wright, B.A., M.B. (Oxon.), F.R.C.S., Eng., Assistant Surgeon to the Manchester Royal Infirmary, etc. Second Edition, edited for American students by William Perry Northrup, A.M., M.D., Attending Physician to the Presbyterian Hospital, etc. New York and London: Longmans, Green & Co. 1893.

This excellent and practical work is already so well known in America that the appearance of the second edition will at once be welcomed by the student of pædiatrics. As a text-book it is of great practical value, combining, as it does, a succinct exposition of both medical and surgical knowledge as applied to early life.

Several of the sections have been entirely rewritten. Many clinical reports of interesting cases and forty new wood-cuts, most of them original, have been added. The American edition, with its appendix, will at once attract the attention and command the confidence of the American medical public. The name of Dr. William P. Northrup, already so well known in pædiatric literature, will, as editor of the work and writer of the medical portion of the appendix, be a sufficient guarantee for their value.

The surgical part of the book is sound and clear throughout. The methods of treatment are modern and in accord with general usage. Dr. Northrup has, however, done much service in Americanizing the surgical part of the work. For instance, Mr. Wright is a radical advocate of early excision of the hip in disease of that joint; but Dr. Northrup and Dr. Meyers have modified their statements and presented the fact that treatment by traction is the accepted mode in American surgical practice, a fact which no one would suspect from the original article. In the same way the editor's appendix with regard to Pott's disease and rachitis contributes much that is to the point, inasmuch as it is sound and representative of American surgery.

Patent, alias Quack Medicines. By the Editor of "Hygiene." Second edition. London: Beaumont & Co. 1892.

This very readable pamphlet of 128 pages consists of a series of papers published in "Hygiene," the object being to expose the cheap and fraudulent character of the principal proprietary medicines in common use. Among these are Clarke's blood-mixture, Revalenta Arabica (a patent food sold at two shillings per half-pound, and consisting of lentil flour valued at two pence a pound), Holloway's pills, Mother Seigel's syrup, the celebrated Mattei remedies, etc.

Considerable space is given to the Mattei remedies, prepared in the Appenines by a so-called Italian count. On analysis they were found to contain little else beside pure water. With reference to the widely used article, chlorodyne, the author states that its use has frequently led to the formation of the opium habit. One druggist in London testified that one customer bought a bottle every day for years; in another case a lady customer contracted a bill for chlorodyne, of £13 in six months; and the wife of a well-known actor became indebted to a druggist for £90 in six months for the same preparation.

The author tells the following good story: "When Charles Dickens was in the height of his splendid career as a novelist, Holloway sent him a check for £1,000, with an intimation that he might consider it as his property if he would insert in an early number of one of his works, then coming out in a serial form, some references to the Holloway patent medicines. Dickens, to his honor be it said, with equal promptitude and indignation returned the proffered bribe. Upon hearing of this incident, Thackeray, remarked, with the quiet sarcasm of which he was master, that if he had been in Dickens's place he should have killed the villian of the novel with an overdose of Holloway's pills, and thus have secured the £1,000.

Keep Your Mouth Shut. A Popular Treatise on Mouth-Breathing: Its Causes, Effects and Treatment. By Fred. A. A. Smith, M.D., C.M. (Glas.), M.D. (Jeff. Med. Coll.), L.R C.P. (Edin.), M.R.C.S. (Eng.), Hon. Surgeon Cheltenham (Eng.) Eye, Ear and Throat Infirmary, etc. To which is added an Appendix on Ophthalmia in New-born Children, by Dr. Smith and Dr. Swan M. Burnett. Boston: Roberts Bros. 1893.

The substance of this book might be given in a very few words. If a child persists in breathing through its mouth its mother is either very ignorant or very wicked if she does not take the child at once to a specialist in diseases of the throat. There is no wonder that the author feels strongly on the subject, since he professes to consider that "mouth-breathing is the cause, in varying degree, of most of the physical troubles to which civilized mankind is subject." As the book is intended for mouth-breathers or the mothers of mouth-breathing children only, he does not go deeply into what the specialist should do when cases are brought to him, but promises the sufferers a cure if the disease is taken in time. It would be of great benefit to rhinologists and of considerable benefit to many persons suffering with nasal obstructions if the book could obtain a wide sale, but the title on the cover "Keep Your Mouth Shut. Smith," hardly reveals the importance of its contents. The appendix advising the spreading of information, and legislation on the subject of ophthalmia neonatorum, cannot be too strongly recommended; but it is even more true of this part of the book that no one would suspect its presence from the title on the cover.

The Surgical Treatment of Wounds and Obstruction of the Intestines By Edward Martin, M.D., Instructor in Operative Surgery at the University of Pennsylvania, etc.; and H. A. Hare, M.D., Professor of Therapeutics at the Jefferson Medical College, etc. Philadelphia: W. B. Saunders.

The data for this work have been obtained through laboratory experimentation extending over a period of two years, and an exhaustive study of the statistics of the literature of gunshot wounds of the abdomen.

To state the fact that the work has been awarded the premium offered by the Trustees of the Fisk Fund, and to call attention to the names of the authors is sufficient to prove the excellent character of this interesting and valuable monograph. The subject is ably handled, and the result highly satisfactory. In detail it treats of congenital malformations; intussusception; internal strangulation; volvulus; foreign bodies; intestinal paralysis; chronic obstruction; peritonitis; diagnosis; treatment, general, special, surgical; wounds and rupture of the intestine.

The work of the publisher corresponds to that of the writers, and the result excites only admiration and commendation. It is really a book which few practitioners of medicine can fail to peruse without increasing materially their knowledge in this very important subject.

Burdett's Hospital Annual and Year Book of Philanthropy. 1893. Edited by Henry C. Burdett. Author of "Hospitals and Asylums of the World," etc. London: The Scientific Press.

The size of this annual has been enlarged. It contains a review of the position and requirements and the cost of management of the voluntary charities and a record of hospital work for the year. It is a guide to British, American and Colonial hospitals and asylums, medical schools and colleges, religious and benevolent institutions, dispensaries, nursing and convalescent institutions.

The present edition contains a chapter on hospital income and expenditure in the United States, and an American Section of twenty-five pages, giving a list of the hospitals, hospitals for the insane and training-schools for nurses in the United States.

It is proposed to consolidate the various medical societies of Cincinnati under one organization.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MARCH 9, 1893.

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THE VALUE OF DRUGS AND OF THE DOCTOR.

Dr. Samuel Wilks [1] of London, in a paper on the value of drugs, protests against the opinion that for every ill which flesh is heir to there is a corresponding medicinal remedy. The idea is vulgar, unscientific and absurd. Like others, he prescribes medicine for all his patients because he finds that if he does not he fails to receive his fees. When a complaint is amenable to remedies, a systematic, well-established course should be adopted. He has often been quoted as a disbeliever in drugs; but he believes that this would apply with more truth to those practitioners who are perpetually trying new remedies and changing the prescriptions of their patients. It seems, however, to be unavoidable that we should be forced to treat the most prominent symptoms when we cannot get at, or remove, the cause. In his experience he has found such benefit from certain drugs in certain conditions that under these circumstances he cannot be considered sceptical as to the value of internal medication. Some of these will occur to every one. The author mentions the use of belladonna for exophthalmic goitre; arsenic in idiopathic anæmia; in tuberculous peritonitis iodide of potash, internally, with or without quinine and linimentum hydrargyri rubbed over the abdomen; in dysentery and chronic diarrhœa, although sceptical about many of the ordinary mixtures, he believes in mineral acids and ipecac, with perhaps small doses of opium.

In regard to the true and well-established remedies, while acknowledging that our knowledge of them is mainly empirical, their mode of action being often unknown, Dr. Wilks maintains that our method of using them is scientific, if we can say from long observation that their administration is indicated in particular cases by special circumstances. It would be an unscientific method, and essentially bad treatment, if, when a remedy was originally suggested for a plausible reason, it is still persevered in, although found to be utterly valueless; a routine system is pursued, whatever the result, and nothing arrests it but the adoption of a new theory. As examples of the latter the author cites the frequent changes in the treatment of phthisis; of the former, the use of iodide of potassium for osseous enlargement, because it has been found of service for syphilitic nodes over bony tissue, the use of the same iodide for the hypertrophy of splenic leucocythæmia, and in tuberculous meningitis. This drug, which does act upon and cause the disintegration of new lowly-organized products, being without effect upon genuine hypertrophies. The author exhibited, on one occasion, before the London Pathological Society, the enlarged bones of a man who had long suffered from osteitis deformans, and then proposed to read from a thick bundle of prescriptions the treatment which the patient had undergone at the hands of many leading practitioners. To the remonstrance of the presiding officer he was able to reply that it would not take a minute, as they all consisted of iodide of potassium. In regard to bromide of potash, for instance, a medicine of so universal application cannot be of much worth, that is, when it is prescribed by habit for a large variety of complicated nervous disturbances. It is curious, he says, to look over a physician's note-books and find "worry in business, bromide of potash; quarrel with cook, bromide of potash; blighted affections, bromide of potash," and so on for several cases.

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[1] Practitioner, January.

Dr. Wilks fully recognizes that, apart from the ordinary therapeutic agents, which are all whereon we can compare notes and thus arrive at definite results as to their value, there is something outside the materia medica — the personal character and influence of the doctor, which is often of equal or greater worth, and which is something which cannot be measured and cannot be imparted. Many quack systems have flourished owing to the strong personality of the schemer.

This imponderable element will cause different men, in looking back over their professional lives, to answer differently the question what amount of power, they, as medical men, possess over the cure or retardation of disease.

It is interesting to turn from these notes and suggestions of a practitioner and teacher of Dr. Wilks's experience in London — he is now a consulting physician to Guy's Hospital — to those of one having the same philosophical turn of mind and similarly placed for taking a broad general view at one of the great medical centres of our own country.

Dr. Alfred Stillé, in the course of an address[2] to the Stillé Medical Society of Students of the University of Pennsylvania, impresses upon them the power of faith, and that the physician who lacks the faculty of inspiring his patients with faith in himself and his sympathy is but half-armed; however ignorant and unskilled he may be, such an one will effect more cures by his impressive or sympathetic manner than by all the drugs of the materia medica. At the bedside of the sick the art is exalted above the science of medicine.

He maintains the supremacy of direct observation in pathology and therapeutics. He holds that the disappointing and disastrous results from many of the multitude of artificial compounds with which experimental pharmacodynamics have overloaded the materia medica in recent years, have emphatically renewed the lesson furnished by the experience of all the ages that the art of therapeutics has no other stable basis than clinical observation, and that mere analogy of chemical composition is a very unsafe guide in the employment of new remedies. The facts of direct observation are unchangeable, whilst their interpretation varies perpetually.

However much, he says, one who has lived long and been observant of the phases through which medical doctrine and practice have passed, must mourn over the insecurity of the one and the instability of the other, he will not fail to discern, if his mental vision penetrates beneath the surface of things, if his knowledge is not confined to his own epoch, throughout all the variations of doctrine in the apparently capricious and inconsistent changes in the modes of practice, a certain general advancement towards completer knowledge and improved skill.

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THE REVIVAL OF WITCHCRAFT.

Under this head, Dr. Ernest Hart discusses in the *Nineteenth Century* for February, 1893, certain hypnotic performances which he has lately witnessed in the Paris hospitals, and especially in La Charité, at Luys's clinic. For the last year or two, public attention has been invited to a series of phenomena "which were seriously alleged to afford positive evidence of the existence of a variety of endowments of the human body and of marvellous powers of mental action." Nowhere have manifestations of this kind been more strikingly displayed than at the above-named hospital, and in connection with Professor Luys and his staff of assistants; and numbers of the *Pall Mall Gazette* and *London Times* appearing in December and January last, have contained vivid descriptions of these marvels. Dr. Hart devoted a fortnight to investigation of these hypnotic displays at the Charité. He plainly says that Luys and his assistants are being imposed upon by a number of clever tricksters who are bringing that dignified old hospital into disrepute, "Mervel," one of Luys's subjects, is a "miserable hysteric," "Jeanne" "an accomplished imposter," and "Clarice" is "a humbug.

By carefully prepared tests, he exposed the worthlessness of the so-called "magnetic effects," showing that electrical or magnetic currents had no real relation whatever to the phenomena exhibited.

"I took with me," he says, "on the third occasion a magnet . . . which had been thoroughly demagnetized by being thrust into the fire, and a series of steel pins that had been variously magnetized in inverse senses; and I found that the heightened senses of Mervel were quite incapable of distinguishing between the inert magnet, the variously magnetized needles, and the true magnet. I even placed the needles and the magnet in Dr. Luys's hands, and asked him to determine what Mervel saw. He saw always in reply to Dr. Luys's questions, the orthodox thing. "He [Mervel] was quite unable to distinguish an inert piece of iron from a true magnet, and unless he were guided by words let fall by the bystanders, or by the adoption of a systematic proceeding to which he was accustomed, he was quite at sea. Clarice and Jeanne, in their lucid somnambulistic state, never knew whether the current was on or off; unless they had a clue to the answers they ought to give, they were ludicrously wrong. They saw enormous flames issuing from the powerful magnet which I used. When I told the assistant to put on the current, acting on my previous instructions, he always did exactly the opposite of what I said, and they always fell into the trap."

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[2] Desultory Thoughts on Medical Subjects, October, 1892.

Dr. Hart next comes to another series of phenomena which bear some resemblance to certain practises in the Middle Ages, when magicians exercised their powers of sorcery upon a wax image, which being duly endowed with mystical relationship to a human subject, was pinched, tortured, wasted, or destroyed, with corresponding results to the unhappy individual in whose effigy it was made. Here is the modern counterpart as narrated by a correspondent of the *Pall Mall Gazette:*

> "There remains one set of recent experiments which, from their novel character, deserve special attention. I refer to the transference of sensibility from a hypnotic subject to inanimate objects. I have witnessed some of these experiments. . . . This gentleman (Dr. Luys's assistant), had a roughly constructed figure about a foot high, resembling the human form, and made of gutta-percha, or some such material, and he experimented with it on a hysterical young woman, one of the hospital patients, and an extremely sensitive subject. She was placed in an armchair and hypnotized, and he seated himself immediately opposite and in close contact with her. . . . After some preliminary business of stroking her arms, etc., he produced the figure and held it in front of her, presumably to be charged with her magnetism, for these experiments rest on the magnetic theory. Then he placed it out of her sight, and pinched it. Sometimes she appeared to feel it, and winced. Then he held it where she could see it, and this time she *obviously suffered acutely* whenever he touched the figure, and in the place where he touched it, although she did not look at it; especially when he touched the sole of the foot it evidently tickled her beyond endurance."

Dr. Hart remarks on this absurd description (of which we have reproduced only a small part), that the exhibition was supposed to prove that suggestions and impressions can be "conveyed across space." If the writer had made a few control experiments, he would have saved himself from having been the medium of introducing thus impressively to the English reading public a solemn account of what was easily proved, and what Dr. Hart's experiments did prove to be a cheap and vulgar imposture.

If the newly-organized Advisory Council of the Psychical Science Congress have any desire to investigate these phenomena to which the imposing name of *L'Envoûtement* has been applied, and which are supposed to prove "externalization of sensation," "communication by contact," and "transference across space," we hope they will by all means take along with them Dr. Hart and his "toy-shop doll" and "false magnet" which so circumvented Madame Vix, after she had done the wax-image trick; the state of "sympathy by contact" and the rest, with such perfection under the manipulations of Colonel de Rochas at the Charité and at the Polytechnique School.

Not the least amusing part of Dr. Hart's paper is the paragraph in which he gives an account of the phenomena of the medicinal tubes. It will be remembered that one of the favorite performances of the Luys-hypnotism is to present to certain susceptible subjects vials or tubes containing known medicinal agents; the effect which the medicine would be expected to have if taken internally is obtained by simple contact of the sealed tube with the body of the hypnotized person. Thus, a tube containing ipecac will cause vomiting, one containing strychnine, spasms, etc. This kind of exhibition was tested some two years ago by a commission appointed by the Academy of Medicine, which decided that Dr. Luys had been imposed upon by his subjects who responded just as well to the supposed action of ipecac or strychnia, etc., if the tubes said to contain these substances contained plain water, or some inert powder, provided that the hypnotized person believed the tubes to contain the medicines whose contents were audibly certified to him by the performer. Dr. Hart has repeated these experiments with similar results to those obtained by the Academy commission. "The subjects," he says, "were never once right, even by accident. When Mervel at the hospital supposed the tube to contain mercury, although it really contained diabetic sugar, he suffered agonies of the kind which he supposed mercury to produce. Strychnine — of which I was warned that the effects were most dangerous, for as Dr. Luys observed to me: 'You might kill a patient with it through incautiously applying the tube,' — I used repeatedly without producing any effect, for I was careful never to mention the name."

Dr. Hart condemns the looseness of management that allows such fraudulent exhibitions to go on in a respectable Paris hospital, and remarks that "in any English hospital in which the controlling governors are on the spot, and the staff in habitual communication with them, such proceedings would long before have attracted inquiry, and would have been controlled." He thinks France "the chosen land of marvel," and that there is "something in the temperament of the Latin race which lends itself easily to neurotic disorder, to hysterical excitement, and to the production of startling displays of mental eccentricity." "If the modern hypnotists, psychists, and faith-curers are allowed the full play which has recently been given to them, in infecting the public mind with the follies of the 'new hypnotism,' the 'profound hypnosis,' the 'new mesmerism,' the 'magnetization of hypnotics,' and the 'externalization of sensation,' which they have been so solemnly propounding and so profusely describing in the pages of our leading newspapers and serials, we may yet see here an abundant harvest of mentally disordered and pathological creatures such as have now for some years been permanently on show on the Continent; we may expect, also, to find our more solid literature poisoned with this evil influence as our literature of romance and fiction has already been."

It is very evident that it is possible to have too much of a good thing; that the physician may abuse the faith inspiring ability which he possesses, and the patient be led astray and injured rather than benefited by the capacity for faith receptivity.

There is a point where the line is drawn between the charlatan and the honest practitioner.

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MEDICAL NOTES.

Quarantine. — The Legislative Assembly of the island of Jersey has declared by vote that quarantine is not preventive of cholera, and has, therefore, refused to establish a quarantine against vessels from ports alleged to be cholera infected.

The Quarantine Law. — In accordance with the new quarantine law, the full text of which will be found on page 201 of the Journal, the Secretary of the Treasury has issued instructions to officers charged with its execution. Every vessel bound for the United States must carry a prescribed bill of health given by the United States consul or medical officers at the port of departure. Should disinfection be necessary, vessel owners must have it done under direction of the inspector. During an epidemic rags and similar articles are not to be shipped at all. A vessel arriving at any United States port with cases of contagion aboard shall be detained for from five to twenty days.

Pleuro-Pneumonia. — With a view of keeping Canadian pleuro-pneumonia out of the United States, the secretary of the treasury has instructed collectors of customs on the northern frontier that neat cattle can only enter the United States from Canada at Buffalo, N. Y., after passing the inspection prescribed by the Secretary of Agriculture.

An Anti-Cigarette Law. — Among the absurd bills which are annually discussed in different legislatures, one against cigarettes often recurs. It appears that one of these has managed to slip through the legislature of Washington, and to become a law. It makes it a criminal offence to manufacture, buy, sell or give away, or to have in one's possession cigarettes or cigarette-paper.

Cold in Europe. — Much of the continent of Europe has this winter suffered severely from the cold. In Russia the mortality from cold alone is greater than for many years, and many cases with frozen extremities have been treated in the hospitals. In many parts of France much suffering and many deaths are reported. Wolves which generally keep far from towns have in Hungary and Servia attacked men, women and children, and eaten them up.

The Encouragement of Quinine in India. — The Government of Bengal has issued the details of a scheme for encouraging the general use of quinine among the natives of the province. The State will be supplied by the Government factory with five-grain packets of pure quinine, which will be sold at a very low price at all post-offices and other public offices.

The American Family Physician's Company. — A company with this title was established a short time ago in Cincinnati, with the object with which similar companies have been established in other places, that is, to make money by systematizing and regulating as much of the medical practice of the locality as they can manage to influence. This company, however, presents some novel features in its prospectus; in its advertisement which is distributed broadcast, it offers to subscribers a physician of the highest standing for all cases of sickness or injury according to a schedule of prices: a case of typhoid fever, for instance, is put down at twenty-five dollars, irrespective of its length or severity. The Academy of Medicine and the Cincinnati Medical Society have passed resolutions stating that a physician cannot be connected with this company and remain a member in good standing of the medical societies. Except in its method of charging certain amounts for certain diseases, this kind of company is not essentially different from those which agree to provide attendance for a given sum a year, expecting to make money for the stockholders of the company.

NEW ENGLAND.

The Mortality in Boston appears to be raised by the severe winter weather of this year. For the past week the death-rate was 25.4. The number of deaths due to pneumonia was 35, consumption 27, bronchitis 10. The number of persons over sixty years of age was 37, a number below the average.

Spurious Degrees. — On the petition of the president and fellows of Harvard College, the Judiciary Committee of the Massachusetts Legislature reported a bill to prevent the false assumption of academic degrees for advertising and similar purposes. The penalty is $1,000 fine or a year's imprisonment.

A Training School for Nurses has been established in South Framingham, Mass., in connection with the hospital in that town.

Home for Epileptics. — The question of the establishment of a home for epileptics in Massachusetts was argued on Tuesday before the legislative committee. A committee was appointed last year by the Massachusetts Medical Society to urge the question, and it has been the subject of a message by the governor. The pending legislation on the new insane asylum at Medfield may delay action until next winter.

Massachusetts Eye and Ear Infirmary. — The annual report for 1892 shows that 12,573 eye patients and 4,471 ear patients were treated, an increase of 540 over the previous year. A table is given describing the 128 operations for cataract done during the year. The new building for the ear department, opened the previous year, has much increased the usefulness of the institution.

The Medfield Asylum for the chronic insane, in contemplation, was the subject of a message from the Governor of Massachusetts to the Legislature last week. The message shows that the asylum cannot be built within the appropriation of $500,000. From careful and detailed estimates, it appears that the total cost of the work specified and required by the statute will be $700,000. The law requires and the plans contemplate an asylum upon the new and approved plan of cottage buildings of brick, sufficient for the accommodation of 1,000 patients. The cost per patient upon this basis of estimates now submitted will be $700. The average cost per patient of construction of the six existing asylums in Massachusetts, based upon their capacity, it $1,492.

NEW YORK.

The Office of Coroner. — At a meeting of the Section on Public Health and Legal Medicine of the Academy of Medicine held February 28th, a bill abolishing the office of coroner which has recently been introduced into the Legislature was discussed. Dr. Stephen Smith thought the bill was open to objection for the reason that it was impossible to do away with the office without an amendment to the State constitution. As a substitute, he proposed a bill the first section of which provides for a transfer of the duties now performed by the coroner to the Board of Health, which shall have full jurisdiction. The second section provides for the appointment of a Bureau of Inquest, to consist of three physicians, to be known as inquest physicians, who are to hold inquests without jurors by summoning three or more "discreet persons," who shall act as witnesses. Reports of inquests are to be sent to the Board of Health and to the office of the District Attorney. Other sections provide that police officers and citizens generally shall, under a penalty of prosecution for misdemeanor, report all suspicious deaths to the bureau, prescribe in detail the duties and jurisdiction of the bureau, and furthermore, provide that in case action is not secured within twelve hours, police justices shall be empowered to hold inquests. Dr. A. T. Weston opposed the proposed bill on the ground that it was a division of responsibility and that no provision was made in it for records of cases. Dr. E. G. Janeway thought that the law should be made to apply to the whole State, and after some further discussion, a resolution was adopted authorizing the chairman to appoint a committee to consider the law and report to the Academy at large.

The New York Hospital Society has determined to erect a new building to take the place of the down-town branch of the hospital at Chambers Street and City Hall Park, which has long been found to be inadequate to supply the needs of the district for hospital aid. The new branch will be located on a triangular plot situated on the west side of Broadway, and bounded by Jay, Hudson, and Duane Streets, and the estimated cost, including an endowment fund for the maintenance of the hospital, is over a million dollars.

Typhus Fever. — In the latter part of February typhus fever broke out among the prisoners confined in the Queens County Jail at Long Island City, and at one time there were as many as ten cases there. In order to isolate and properly care for the patients three frame buildings, sixty by forty feet, have been erected in the prison yard.

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Miscellany.

PAN-AMERICAN MEDICAL CONGRESS

The following are extracts from the Regulations and By-Laws of the Congress:

Members of the Congress shall consist of such members of the medical profession of the Western Hemisphere, including the West Indies and Hawaii, as shall comply with the special regulations regarding registration, or who shall render service to the Congress in the capacity of Foreign Officers.

The following shall be considered as the constituent countries of the Pan-American Medical Congress: Argentine Republic, Bolivia, Brazil, British North America, British West Indies (including B. Honduras), Chile, Dominican Republic, Honduras (Sp.), Mexico, Nicaragua, Paraguay, Peru, Salvador, Republic of Columbia, Republic of Costa Rica, Ecuador, Guatemala, Haiti, Kingdom of Hawaii, Spanish West Indies, United States, Uruguay, Venezuela, Danish, Dutch and French West Indies.

The Sections of the Congress shall be as follows: (1) General Medicine, (2) General Surgery, (3) Military Medicine and Surgery, (4) Obstetrics, (5) Gynæcology and Abdominal Surgery, (6) Therapeutics, (7) Anatomy, (8) Physiology, (9) Diseases of Children, (10) Pathology, (11) Opthalmology, (12) Laryngology and Rhinology, (13) Otology, (14) Dermatology and Syphilography, (15) General Hygiene and Demography, (16) Marine Hygiene and Quarantine, (17) Orthopædic Surgery, (18) Diseases of the Mind and Nervous System, (19) Oral and Dental Surgery, (20) Medical Pedagogics, (21) Medical Jurisprudence, (22) Railway Surgery.

The languages of the Congress shall be Spanish, French, Portuguese and English.

The registration fee shall be $10.00 for each member residing in the United States, but no fee shall be charged to foreign members. Each registered member shall receive a card of membership and be furnished a set of the Transactions.

Contributors are required to forward abstracts of their papers, not to exceed six hundred words each, to be in the hands of the Secretary-General not later than the tenth of July, 1893. These abstracts shall be translated into English, French, Spanish and Portuguese, and shall be printed in advance of the meeting for the convenience of the Congress, and no paper shall be placed upon the programme which has not been thus presented by abstract. Abstracts will be translated by the Literary Bureau of the Congress at the request of contributors, and should be forwarded through the Secretaries of Sections. Papers to be presented to Sections must not consume more than twenty minutes each in reading, and when of greater length must be read by abstract not exceeding twenty minutes in length. Papers read by abstract may be printed in full in the Transactions, subject to approval by the Editorial Committee. Papers and discussions will be printed in the language in which they may be presented. All papers read in the Sections shall be surrendered to the Secretaries of the Sections; all addresses read in the General Session shall be surrendered to the Secretary-General as soon as read; and all discussions shall be at once reduced to writing by the participants.

The Secretary-General may, at his discretion, organize a Literary Bureau, which shall consist of such number of linguists as he may determine, whose duty it shall be to do all necessary translating for the Congress, compensation for which service shall be determined by the Executive Committee. Certain members of the Literary Bureau may be designated by the Secretary-General as an Editorial Committee. It shall be the duty of the Editorial Committee to determine the eligibility of all contributions before the same shall be published in the Transactions, and to supervise the publication of both the Book of Abstracts and the Transactions. All work done by the Editorial Committee and by the Literary Bureau shall be subject to approval by the Secretary-General.

The officers of the Congress are as follows:

President, William Pepper, M.D., LL.D., Philadelphia. Secretary-General, Charles A. L. Reed, M.D., 311 Elm Street, Cincinnati. O. Treasurer, A. M. Owen, M.D., Evansville, Ind. Chairman of Executive Committee. Henry D. Holton, M.D., Brattleboro, Vt. Committee of Arrangements (Office, Arlington Hotel, Washington, D.C.), Samuel S. Adams, M.D., Chairman; J. R. Wellington, M.D., Secretary.

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INCAS' EYES.

These bodies, which are found in the orbits of the so-called Peruvian mummies, have been investigated by Miller.[1] These mummies, which are the remains of the ancient Peruvians, were not embalmed, but simply desiccated, and then buried in a soil conducive to their preservation. The heads are wrapped in cloth; when this is removed these so-called eyes drop out. After careful examination, the author comes to the conclusion that they were the crystalline lens of some animal. They are of different sizes, according to the age of the individual when buried. In searching for the kind of animal to which they probably belonged, the most probable appeared to be the squid or octopus, which is found in abundance along the coast. In this animal the retinal chamber is occupied by a bi-convex lens divisible into an outer and inner part, the two being separated by a membrane. The inner portion of this eye corresponds to that found in the mummies.

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THE AUTOPSY OF BARON DE REINACH.

Two months ago the question of making an autopsy in the case of Baron de Reinach and the results of the autopsy were matters of extreme political importance in France, in connection with the Panama scandal. The press reports of this autopsy were contradictory and misleading. The *British Medical Journal* publishes some notes derived from an eminent French physician in a position to be well acquainted with the facts:

Although the text of the report is kept secret in it, Dr. Brouardel declares that no lesion existed which could explain the death of the baron by any disease having a natural cause. The advanced state of decomposition of the body did not allow exact affirmation of the cause of death. This vague report was only handed in after numerous expert investigations and chemical analyses. In a former report handed in on January 6th, MM. Ogier and Bordas had already declared that they had not met with any chemical evidence disclosing the presence of any known poison, mineral or vegetable. Nor could any trace be discovered of any alkaloid.

Subsequent experiments on animals made by M. Schutzenberger showed that the ingestion of fragments of the viscera gave rise to symptoms analogous to those produced by aconitine. Counter-experiments were made on the same animals with portions of the viscera of individuals who had died at the same date; from the body of a man drowned, and of a man who had died of cerebral apoplexy. The ingestion by animals of these fragments of viscera gave rise to the same symptoms of poisoning as those of Baron de Reinach.

The necessary conclusion was that these experiments did not afford any useful information, and could not justify any conclusions. As, on the other hand, the viscera yielded no known chemical reaction, the experts could give no affirmative statement. However this may be, it is considered morally certain that Reinach died from poison. Not only did the body show no lesion or cause of natural death, but he had no disease or illness before death, while the events which occurred before and after his tragic death show that he could only escape by death from prison and dishonor.

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THE KEELEY SYSTEM.

In a letter to the *Medical News*, Dr. J. J. Brownson, who lives in the vicinity of Dwight, Ill., comes to the conclusion that the following is a mixture given on entering the Keeley Institute:

℞	Auri et sodii chloridi	ʒ ss.
	Strychninæ nitrat.	gr. iv.
	Atropinæ sulph.	gr. j.
	Glycerini	ʒ ij.
	Ex. fl. cinchonæ q. s.	℥ xvj. M.

Sig. One teaspoonful in water three times a day.

"The members report four times a day and receive a hypodermatic injection of strychnine nitrate, gr. $\frac{1}{60}$. They are told that they can have all the liquor they want. 'If you feel like taking a drink,' says the doctor, 'just ask for it.' Now, here is the secret: if the patient asks for a drink of whiskey he gets it; but instead of the injection of strychnine nitrate, he receives one of apomorphine, gr. $\frac{1}{10}$. Of course, the whiskey makes him sick; he is unable to retain his once favorite beverage, and he promptly informs his fellow undergraduates, and writes his friends glowing accounts of the great change and new life that have come over him since taking this wonderful cure, which he feels sure could only have been brought about, as Mr. Keeley himself said in a lecture here recently, by divine appointment."

The *Journal of the American Medical Association* quotes the following advertisement to be found in the daily papers with the remark that the sustaining words of Parson Talmage, the gullible press and the philanthropic spasms of Keeley himself were not sufficient to sustain the fad for the half of a half decade: "At 42 South Curtis Street, this Tuesday morning, 10 o'clock, auction sale contents of Keeley Institute. Iron bedsteads, hair mattresses, good bedding, sheets, blankets, slips, etc., etc. Folding beds, office furniture, range, plated ware, crockery, etc., etc. Sale peremptory, Elison, Flersceim & Co., Auctioneers."

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[1] Science, February 10th.

THERAPEUTIC NOTES.

Chloralose. — Hanriot and Richet[1] in a report to the Academie Des Sciences describe a new hypnotic formed by the reaction of chloral and glycose. Chloralose has a bitter taste, is slightly soluble in water, and produces very marked hypnotic effects, being more active than chloral. By experiments on themselves the authors found that three to six grains might be considered a proper dose, although twice as much could safely be given. A dreamless quiet sleep was produced without any unpleasant results on waking.

For Bronchial Asthma. The *Practitioner* for February, gives the following:

℞	Potassii iodidi	ʒ ii
	Tincturæ scillæ	[illegible]
	Tincturæ stramonii . . .	ʒ ii.
	Extracti glycyrrhizæ . . .	ʒ iii
	Spiritus ætheris	ʒ i.
	Aquæ ad.	℥ viii.

Misce et fiat mistura.

One tablespoonful in a tablespoonful of water every six hours.

Intolerance to Antipyrin. — Robertson reports a case of peculiar idiosyncrasy for antipyrin.[2] The patient, a healthy girl of eighteen, almost immediately after swallowing a five-grain powder felt faint, sick and giddy. Within half an hour the skin over the whole of her body was bright scarlet in color, simulating exactly the rash of scarlatina; there was also œdema of the hands, arms, feet, face, and legs. Then a diffuse urticarial eruption appeared over the whole surface. By the third day all the symptoms had subsided. Some months afterwards the same patient took one grain of sulphate of quinine. A few minutes afterwards she felt sick and fainted, with symptoms closely resembling those caused by the antipyrin. Over the whole body there was a bright red rash. This was followed by a continuous crop of urticaria.

Hydrastinin[3] is the oxidation product of hydrastin, one of the alkaloids found in the root of hydrastis canadensis (golden seal). It has been used now for about two years with increasing professional popularity, particularly among gynæcologists. A stimulus to its increased employment has been recently furnished in a reduction of the price, and thus a more extended use may be expected. The hydrochlorate is mostly used and the salt appears to act as a hæmostatic, contracting the blood-vessels of the endometrium. It cannot take the place of ergot, as it does not cause contraction in the muscular tissue, and can act most effectually only upon a relaxed uterus, as the blood-vessels are then in a condition free to contract. Although its hæmostatic action is very pronounced in over half the number of cases tried, still it appears to be uncertain, and in fact may have no effect whatever, so that from all the testimony given by a now numerous set of observers, principally in Germany, it cannot by any means show any advantages over the officinal fluid extract of hydrastis, given in proportionate quantity, which is a small dose, even at the maximum.

Fuchsine[4] (Rosaniline) is a well-known aniline product occurring in bright irridescent crystals, giving a deep-red solution in water, used in the arts as a dye, and in medical science for staining purposes in histological and bacteriological work. In the process of manufacture in commercial quantities arsenic is retained in variable amount, which of course is objectionable for both internal and external use. When used in medicine arsenic should be carefully eliminated. It has been used internally for albuminuria, and externally in a one per cent. alcoholic solution in five cases of traumatic erysipelas with successful results in all after only two applications; but the best results reported during the past year have been in throat affections. After a constant use since 1888, Dr. Karl G. Bogroff, of Odessa, reported that, like all other aniline dyes, it is easily absorbed by the laryngeal and faucial mucous membrane. Antiseptic fluids, when mixed with it, penetrate into the tissues far more deeply and act much more effectively than when employed alone. When injected into the larynx "the superficial cellular elements and intercellular spaces become infiltrated with particles of the aniline dye, and thus a thin protective film is formed, which is impermeable not only by any irritating fluids, but even by gaseous bodies. In cases of reactive laryngeal inflammation in pulmonary tuberculosis from continual irritation by the discharges, the intralaryngeal injection of a two per cent. watery solution of boric acid saturated with fuchine rapidly removes the inflammatory phenomena and relieves the difficulty in swallowing. It proves similarly beneficial in cases of "faucial mycosis.

RECORD OF MORTALITY

For the Week ending Saturday, February 25, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrheal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,827,396	[illegible]	[illegible]	14.74	19.80	1.54	[illegible]	[illegible]
Chicago . . .	[illegible]	[illegible]	230	[illegible]	21.61	2.09	[illegible]	[illegible]
Philadelphia .	[illegible]	[illegible]	[illegible]	12.60	[illegible]	[illegible]	[illegible]	[illegible]
Brooklyn . .	[illegible]	[illegible]	138	16.12	[illegible]	[illegible]	[illegible]	[illegible]
St. Louis . . .	[illegible]			—	—			
Boston . . .	[illegible]	209	70	[illegible]	21.12	[illegible]	5.76	2.40
Baltimore . .	461,139							
Cincinnati . .	305,000	[illegible]	[illegible]	10.78	[illegible]	[illegible]	[illegible]	—
Cleveland . .	[illegible]	108	41	15.64	[illegible]	3.68	[illegible]	—
Pittsburg . .	[illegible]	101	[illegible]	16.04	21.75	3.96	[illegible]	[illegible]
Milwaukee . .	[illegible]	—	—			—		
Washington .	[illegible]	140	[illegible]	7.81	28.40	[illegible]	[illegible]	
Nashville . .	[illegible]			—	—			
Charleston . .	[illegible]	[illegible]	7	[illegible]	6.66	—	—	—
Portland . . .	40,000	12	4		25.00	—	—	—
Worcester . .	[illegible]		13	6.06	21.21	—	[illegible]	—
Lowell . . .	[illegible]	[illegible]	[illegible]	18.90	21.60	[illegible]	[illegible]	2.70
Fall River . .	[illegible]	—	40	13.05	39.15	[illegible]	—	[illegible]
Cambridge . .	[illegible]	—		—	—		—	—
Lynn	[illegible]	27		3.70	11.80	—	—	—
Springfield . .	[illegible]	[illegible]		10.52	10.52	—	5.26	[illegible]
Lawrence . .	45,910	[illegible]	16	15.78	23.67	[illegible]		[illegible]
New Bedford .	[illegible]	[illegible]	[illegible]	[illegible]	5.00	—		—
Holyoke . . .	[illegible]	24	[illegible]	[illegible]	[illegible]	—	—	—
[illegible] .	32,783	[illegible]	[illegible]		[illegible]	—	—	—
Salem	31,495	18	[illegible]	5.55	[illegible]	—	[illegible]	—
Haverhill . .	[illegible]	[illegible]			16.66			—
Chelsea . . .	[illegible]	[illegible]	[illegible]	11.11	11.11	11.11	—	
Malden . . .	[illegible]	11		[illegible]	9.09			
Newton . . .	[illegible]		1	—			[illegible]	
Taunton . . .	26,464	13	[illegible]	15.38	15.38		—	[illegible]
Gloucester . .	26,008	[illegible]	3	[illegible]			—	—
Fitchburg . .	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Waltham . .	[illegible]	[illegible]			11.11	—	—	—
Quincy . . .	[illegible]			—	[illegible]	—	—	—
Pittsfield . .	[illegible]	[illegible]	[illegible]	—	14.28	—	—	—
Northampton .	15,684	6	[illegible]	—	16.66	—	—	—
Everett . . .	14,745	6	[illegible]	33.33	—	—	—	[illegible]
Newburyport .	14,031		—					
Amesbury . .	13,561		—		—			

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) [illegible], acute lung diseases [illegible], consumption [illegible], diphtheria and croup 164, diarrhoeal diseases 61, scarlet fever 53, typhoid fever 49, whooping-cough 32, measles 30, cerebro-spinal meningitis 24, erysipelas [illegible], typhus fever 5, malarial fever 3, small-pox 2.

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[1] Sem. Méd., January 11th.

[2] Edinburgh Medical Journal, January.

[3] Squibb's Ephemeris.

[4] Squibb's Ephemeris.

From typhoid fever Philadelphia 10, New York 7, Cleveland 5, Chicago and [illegible] each, Brooklyn, Boston, Pittsburgh and Lowell [illegible], Washington and Lawrence 2 each, Charleston, Lynn and [illegible] 1 each. From whooping-cough New York 18, Brooklyn 10, Chicago, Cincinnati, Charleston and Lawrence 1 each. From measles Chicago 10, New York 8, Philadelphia 6, Brooklyn and Pittsburgh 2 each, Boston and Everett 1 each. From cerebro-spinal meningitis New York 8, Chicago 7, Washington 3, Brooklyn 2, Boston, Cleveland, Worcester and Gloucester 1 each. From erysipelas Chicago 8, New York 5, Philadelphia and Brooklyn 4 each, Boston and Pittsburgh 1 each. From typhus fever New York 5. From malarial fever Brooklyn 3. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending February 18th, the death-rate was 19.2. Deaths reported 3,798; acute diseases of the respiratory organs (London) 350, whooping-cough 91, diphtheria 88, measles 64, scarlet fever 59, diarrhœa 36, fever 25, small-pox (Salford 2, Leicester, Oldham and Sunderland 1 each) 5.

The death-rates ranged from 11.0 in Birkenhead to 25.2 in Plymouth; Birmingham 19.0, Bradford 21.9, Croydon 16.7, Hull 17.7, Leeds 18.6, Leicester 18.0, Liverpool 21.5, London 18.8, Manchester 20.1, Nottingham 18.2, Sheffield 20.1, Sunderland 18.6, West Ham 20.6.

METEOROLOGICAL RECORD,

For the week ending February 25, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...19	[illegible]	[illegible]	[illegible]	14	[illegible]	[illegible]	[illegible]	S.W.	S.	9	[illegible]	O.	N.	0.04
M...20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	57	[illegible]	W.	W.	32	[illegible]	N.	C.	0.24
T...21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	14	[illegible]	C.	O.	
W...22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	N.W.	[illegible]	[illegible]	N.	N.	1.40
T...23	29.72	[illegible]	[illegible]	21	[illegible]	[illegible]	[illegible]	S.W.	S.W.	14	[illegible]	C.	O.	
F...24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	W.	13	14	N.	C.	[illegible]
S...25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24	[illegible]	W.	S.	[illegible]	[illegible]	C.	N.	[illegible]
[illegible]	[illegible]		[illegible]	14			[illegible]							2.01

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ‡ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 25, 1893, TO MARCH 3, 1893.

By direction of the Secretary of War, Major Edward B. Moseley, surgeon, now on duty in Washington, will report in person to the surgeon-general of the Army, for duty in his office, as soon as Major Robert M. O'Reilly, surgeon, shall report for duty as attending surgeon in this city.

The suspension of the order directing Major Robert M. O'Reilly, surgeon, to report for duty as attending surgeon in this city, is, by direction of the Secretary of War, removed.

Major Robert M. O'Reilly, surgeon, having reported to the major-general commanding the Army, is assigned to duty as attending surgeon in this city, to date from February 28, 1893.

Leave of absence for six months, to take effect March 13, 1893, with permission to go beyond sea, is granted Major John H. Bartholf, surgeon, U. S. A.

SOCIETY NOTICE.

Boston Society for Medical Improvement. – A regular meeting of the Society will be held on Monday, March 13, 1893, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. G. G. Sears: "Some Cases of Insanity Following Surgical Operations."

Members are requested to report cases.

Dr. C. M. Green: "The Care of Women in Labor and in the Puerperal State."

J. T. Bowen, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Acromegaly. By Joseph Collins, M.D., New York. Reprint. 1893.

The Treatment of Hernia. By Alexander Dallas, M.D., New York.

Notes on the New Mesmerism. By Ernest Hart. Reprint. 1893.

St. Mark's Hospital Report from April, 1890, to April, 1892, Grand Rapids, Mich.

The St. Louis Medical College. An Historical Address. By G. Baumgarten, M.D.

"Oils and Fats" in Surgical Dressings. By Dr. C. M. Hobby, Iowa City. Reprint. 1892.

Transactions of the American Orthopedic Association, held in New York, September, 1892. Vol. V.

Clinical Remarks on Cases of Congenital Syphilis and Rickets. By A. Clifford Mercer, M.D. Reprint. 1893.

The Relation of Rheumatism and Chorea. By Floyd M. Crandall, M.D., New York. Reprint. 1893.

Fifteenth Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, Md. 1892.

Transactions of the American Ophthalmological Society, Twenty-eighth Annual Meeting, New London, Conn., 1892.

Proceedings of the Philadelphia County Medical Society, Vol. XIII, Session of 1892. Lewis A. Adler, Jr., M.D., Editor.

Cases of Symmetrically-Placed Opacities of the Corneæ, Occurring in Mother and Son. By Charles A. Oliver, M.D. Reprint.

Observations on the General Pathology of Cancer, Especially of the Breast. By W. Roger Williams, F.R.C.S., England. Reprint. 1893.

Transactions of the Twenty-third Annual Session of the Medical Society of Virginia held at Alleghany Springs, Va., September 13, 14, 15, 1892.

The Technique and Diagnostic Value of Ehrlich's Method of Staining the White Blood-Corpuscles. By Thomas S. Southworth, M.D. Reprint. 1893.

An Examination of the Eyes of Three Hundred and Eleven Students, with Charts. By W. F. Southard, M.D. (Harv.), Oakland, Cal. Reprint. 1892.

Report of a Meeting in Behalf of a New Building for the Dental Department of Harvard University, held in Horticultural Hall, Boston, November 30, 1892.

Itching of Central Origin, or Brain Itch. A Case of Hysterical Atasia-Abasia Suing for Damages. By L. Bremer, M.D., St. Louis, Mo. Reprints. 1892–93.

Fiftieth Annual Report of the Managers of the Utica State Hospital at Utica, for the Year ending September 30, 1892. Albany: James B. Lyon, State Printer. 1892.

Cheyne-Stokes Respiration. By George Alexander Gibson, M.D., F.R.C.P.E., F.R.S.E., assistant physician to the Royal Infirmary of Edinburgh. Edinburgh: Oliver and Boyd. 1892.

The Chemistry and Therapeutics of Uric Acid, Gravel and Gout. The Croonian Lectures for 1892, with addition. By Sir William Roberts, M.D., F.R.S. London: Smith, Elder & Co. 1892.

An Analysis of Seventy-two Cases of Ununited Fracture Occurring in the Long Bones of Children. Ununited Fractures in Children. By D'Arcy Power, M.A., M.B. Oxon., F.R.C.S., England. Reprints. 1891–92.

A System of Genito-Urinary Diseases, Syphilology and Dermatology. By various authors. Edited by Prince A. Morrow, M.D. In three volumes. Volume I. Genito-Urinary Diseases. New York: D. Appleton & Co. 1893.

The Cosmetic Surgery of the Nose. Tumor of the Liver in which Removal was Attempted. Intra-Cranial Neurectomy of Second and Third Divisions of Fifth Nerve. By John B. Roberts, M.D., Philadelphia. Reprints. 1892.

An Outline of the Technique of Abdominal and Pelvic Operations as Performed in the Medico-Chirurgical Hospital of Philadelphia. By William Easterly Ashton, M.D. Reprint. Philadelphia: The Medical Bulletin Printing House. 1893.

Human Anatomy, A Complete Systematic Treatise by Various Authors, Including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.B., Surgeon to, and Lecturer on Surgery at the Middlesex Hospital, London, etc. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1893.

Hospitals and Asylums of the World; Their Origin, History, Construction, Administration, Management and Legislation, with Plans of the Chief Medical Institutions, etc. By Henry C. Burdett, formerly Superintendent of the Queen's Hospital, etc. In four volumes and a portfolio. Vol. III. Hospitals; History and Administration. Vol. IV. Hospital Construction with Plans and Bibliography. The Portfolio of Plans. London: J. & A. Churchill. 1893.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery, Harvard University.

III.

DELIRIUM TREMENS.

It would seem at first as though there should be some excuse for including this in the surgical course. The excuse in my mind is that we have so much to do with it in all surgical cases, and that it is especially in surgical cases that it complicates the treatment, and leads to so many bad results.

By delirium tremens we mean a peculiar condition of the nervous system produced by the use of alcohol, and, perhaps, by its too sudden abandonment. I would not, however, confine the evils of the effects of alcohol in surgical cases merely to this disease. You all, I think, must notice as you go on through hospital practice and sights that the patients who do not drink do a great deal better than those who do, in every form of accident and injury. The calmness of body and mind is with the temperate. The resistance to shock is with the temperate. The ability to respond to stimulants promptly is with the temperate, for the intemperate have already used up their powers of vital resistance; they have become accustomed to the overuse of stimulants, and they do not respond readily to them, and you do not get the benefit from stimulants which you expect. An illustration of this is seen in etherization; as we said before, it takes a great quantity of ether, and laborious and excitable and protracted etherization, to overcome the drunkard, and make him go to sleep; wheresas the patient who is temperate, as a rule, takes it calmly, succumbs to it easily and recovers promptly. There can be no doubt, I think, that the continuous use of alcohol has a deleterious effect on the tissues, hardens them, thickens them, prevents absorption as readily, dilates the veins, leads to a slow and labored circulation; in that way delays absorption and, moreover, produces finally some changes in the brain, which in the end are structural. All these things count against the patient when he is suddenly brought to meet the strain of a severe accident or a severe operation.

Delirium tremens, applied as a name to a disease, indicates of course two marked conditions which are the characteristics of it; one is the temporary insanity, and the other is tremor. I should add to these, I think, a third characteristic, which is more marked in this affection than in any other single disease, and that is sleeplessness or vigilance. It is true that we see this more or less in other affections; but we always see it in the patient who has delirium tremens. A delirium, then, accompanied with tremor and with sleeplessness, expresses pretty nearly the description of a case of this kind.

There seem to be two varieties of it quite different from each other. One is the case in which the patient is very full of alcohol, and has not eliminated it from the system; and the other is the case in which he has been accustomed to the stimulation of alcohol for a long while, and has it suddenly withheld from him and misses its support. Perhaps we had better call the cases in the first class cases of pure alcoholism. In this class the patient is loaded with the results of the excretory products of alcohol which are not eliminated. His secretions are checked; his head is confused; his pulse is rapid; his skin is red and hot; his eyes are usually inflamed; his mind is irritable, somewhat delirious. He also is sleepless, maniacal. He easily passes to another state wherein alcoholism terminates in positive convulsions; and they are a well-known occurrence — not very frequent, but yet they do occur; are distinctly epileptiform in character and quite severe. On the other hand, the patient who is suffering from the want of alcohol, from true delirium tremens, is pale and subdued; has a weak, soft pulse, and a creamy, moist tongue. He is delirious; but he is very quiet and civil, as a rule. His delirium is entirely that of fear; and all the efforts which he may make, which may result in injuring himself or in injuring others, are not apparently from any spirit of ugliness or homicidal mania, but to escape from the imaginary peril which he sees about him and wishes to avoid. The patient with true alcoholism gets over that condition in twelve hours, perhaps, and then passes on to the second stage of delirium tremens. On the other hand, very many patients are brought into the hospital perfectly sober. It is difficult perhaps to extract from them the admission at first that they drink at all. They show for the first day perhaps no change from other patients; but soon after confinement in bed with a fracture, or with a painful broken rib, or with a wound — soon after confinement, within a few hours or a day — they begin to show the restlessness, the sleeplessness and the tremor of true delirium tremens. These two classes of cases then would seem to be quite distinct; and although the final treatment of the two is practically the same, yet the alcoholism requires a different treatment while it lasts during its brief period, from that of the patient who begins with a delirium tremens without any alcohol in the system. In the patient with delirium tremens the tremor is most marked usually in the tongue and hands. He rarely can hold the hands steady, almost never can protrude the tongue without constant tremor; and this is quite characteristic of this nervous affection.

This is not to be confounded with the patient who has a tremor from debility in advanced fever. Take, for instance, the typhoidal state, in which we have jactitation, subsultus of the tendons, shaking of the fingers, quivering of the muscles of the face, and the dry parched tongue and lips which the patient cannot control. In this typhoidal condition, perhaps, the patient is unable to protrude the tongue even though he tries to do so in answer to your request. On the other hand, the peculiarity of the patient with delirium tremens is that he is excessively anxious to do whatever he is asked to do by the doctor, with the idea that it will be a benefit to him; and being already in a state of fear, he is extremely submissive and overdoes everything that you ask him to do. If you ask him if he can sit up, he bounds up in bed. If you ask him to put out his tongue, he puts it out with great violence, and holds it out a long while. While he is thus afraid that he is going to die, his mind is in such a changeable state that no impression lasts longer than a few seconds; and even though you may congratulate yourself that you have made some impression upon him, you cannot have the slightest confidence that it will last with him after you have left him. In this condition of pure delirium tremens his fears are so great that he forgets pain, and will abuse a broken limb, or a wounded surface in a way that no patient could bear in any other nervous condition. It is repeatedly the case that patients with delirium tremens, who are not properly watched, will tear off the splints and get out of bed, tear off dressings, etc. They are totally insensible, apparently, to the feeling of pain, while the stronger impression is on them of some reason why they should escape. The reason why they wish to escape is because they see around them in imagination various distressing visions which frighten them to a terrible degree. All sorts of phantasms and illusions pursue them, and some of their delirious fancies are extremely absurd, of course. In this condition of mind they can hardly be held to be accountable for what they do; and they are really temporarily insane, and may commit crime without any desire to commit crime, but only to escape from imaginary dangers. The patient with delirium tremens, for example, will get out of bed and try to escape from the room or the ward of a hospital, and if opposed, will not hesitate to inflict homicidal violence on the person who meets him if he has the strength to do it. In that way, you see, occasionally murder and crimes are committed in the delirium-tremens condition; and it must be strictly borne in mind that these people are in a state of absolute mania, and not safe to be trusted for a moment. Their promises are worth nothing. They are extremely dangerous to handle without assistance.

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[1] [illegible]

If an accident of any kind happens to a person who is habitually taking alcohol, which suspends suddenly the ability to take it, as, for example, an accident which causes them to have nausea, then delirium tremens frequently supervenes. It is not necessary that there should be a surgical accident either; for it is a well-known fact that delirium tremens is extremely common on the immigrant ships a day or two after they leave port, in consequence of sea-sickness interrupting the ability of the drunkards to take their customary stimulants. It is extremely common; and occasionally such patients have to be confined; and occasionally they commit suicide by jumping overboard. So that anything that suddenly shakes the nerves and interrupts the action of the stomach bring on this condition.

It is a very curious fact that in some drinkers the delirium-tremens condition does not come on suddenly, but waits till a day or so after the occurrence of the accident before it begins to show itself.

Pathology. — The pathology of this affection is almost nothing. It is apparently a functional disease, and it does not terminate fatally very often. When it does terminate fatally, it is usually accompanied by great serosity of the brain, what is called in some books œdema of the brain; in the older books it was called by the older writers by the very impressive term of a wet brain. In this condition the autopsy shows the sinuses loaded with venous blood, the ventricles and the spaces about the arachnoid cavity loaded with serum which extends down into the spinal canal. The mode of death is by gradual coma coming on exactly like what is called sometimes a serous apoplexy; coming on gradually, sleep deepening into stupor, inability to be roused, and finally resulting in death. Other changes may be found in the organs due to the habitual use of alcohol, but other changes coming from delirium tremens do not seem to exist; so that practically it is a functional rather than a structural affection; an affection of worn-out and exhausted nervous energy; and the pathology points to the treatment, which should always be of a soothing, supporting and quieting nature.

Now, obviously, it will not do at all to consider the patient with alcoholism in the same category, as regards immediate treatment, as the patient with delirium tremens. The patient with alcoholism is already loaded with the effete results of this indulgence; and the sooner it can be eliminated from his system the better for him. With such a patient, then, sometimes an emetic is of use; always a mercurial cathartic is of use; and sometimes something to promote the secretion of the kidneys, or of the skin. After the alimentary canal and other emunctories have been thoroughly cleared out, then is the time to begin to apply the treatment we should give to real delirium tremens.

The only cure for this affection of exhausted nerves is sleep. This is a panacea in this affection. It is a cure, if it is long enough and if it continues uninterruptedly. To procure sleep has always been one of the great indications in the treatment of this affection, and the one thing most difficult to obtain. In almost all other affections we have in opium a most powerful remedy to procure sleep. Unfortunately there are two reasons why it is not advisable to use opium in delirium tremens; one is that it is totally inoperative unless enormous amounts are given. The ordinary dose only excites the patient. Where a grain of opium would do in one case, a good many grains are necessary to subdue the mania of the patient in delirium tremens. In addition to this, it seems to exert an unfortunate effect upon the brain; and it has been pretty well proved by investigations that narcotism produced successfully with opium has some dangers in delirium tremens; that it is liable to result in lasting coma, and to carry the patient off into that serous condition of the brain which terminates finally in death. Chloral also is objectionable to a certain degree on account of its depressing effects. We know that chloral is quite a powerful hypnotic. We also know that it has a marked effect in depressing the action of the heart, and that it is rather accumulative in its action; and if several successive doses are given the combined effect may last longer and be greater than we had expected. As a depressant to the nervous system and the heart, it is somewhat dangerous; not that it should be set aside, but be used with great caution. One might think that ether would offer the best possible remedy we could use in delirium tremens. The patient, however, succumbs to ether with difficulty, but finally goes to sleep. His muscles are relaxed; he bursts into a drenching sweat, and sleeps for a while with good effect; but so far as I have observed he always wakes with the delirium unabated; and it can be used with success, apparently, only as a temporary expedient. As a temporary expedient it is extremely valuable. In the patient with delirium tremens who is strong and violent, and suddenly meets with a severe accident, has a bad fracture, for instance, and has got to be transported, it may happen that etherization will be the best way to do it. He may be etherized fifteen to thirty minutes until he can be transported, perhaps put to bed, perhaps have his fracture treated, his limb dressed; but as a direct remedy, a curative agent, ether does not seem to have had a marked success. Chloroform, I should suppose, would quiet the patient quickly, but be a good deal more dangerous in this condition than in the ordinary condition, and be liable in some unexpected cases to kill the patient.

In order to procure sleep, as far as drugs are concerned, we have to resort to the milder class; and often they are quite as effectual as the stronger. The most efficient, and the most innocent of all that are efficient, is the bromide of potash. That may be given safely in large doses, at intervals of four to six hours, for quite a while; and although if given a long while it finally affects the brain, reducing its circulation so far that the patient becomes temporarily demented, as I have seen in a number of cases, yet for the few days that perhaps we have to use it for delirium tremens, it almost never does any harm. It frequently is successful in procuring sleep; and it is apparently an innocent agent. Now much milder agents are sometimes successful, as, for instance, the tincture of hops (which is a good bitter), or valerian, or the preparations made from valerian, especially the combination of valerian and ammonia known as valerianate of ammonia, which is a good stimulant and good quieting agent, and apparently perfectly harmless.

Certain agents that have a stimulating quality are also sometimes very useful, especially the compound spirits of ether, called otherwise Hoffman's anodyne; this used to be called the heavy oil of wine, is a stimulant and also a sedative agent. It is a good agent to use in delirium tremens. Probably paraldehyde would come in the same class, to a certain degree. Sulphonal is uncertain, extremely slow. Its therapeutic effects do not come on apparently for several hours after administration, and then last a good while. It is to a certain degree a depressant to the heart; and it is to be classed, I should think, in the treatment of this disease, somewhat in the same category as chloral.

Stronger agents were sometimes used with great success, but they became so dangerous that I think they have become pretty much abandoned. I would instance, as an example, digitalis. That used to be very largely given, twenty years ago, in delirium tremens; and the doses were enormous, sometimes one drachm of the tincture, sometimes that amount in two successive doses. This frequently quieted down the circulation to such a degree that the patient went to sleep; but sometimes fatal cases arose from its use, and it was then abandoned for safer agents.

There are some things which sometimes will put the patient to sleep merely by quieting the nervous disturbance which arises from the condition of the stomach. Of these capsicum is extremely valuable. It is appalling to see the ease and satisfaction with which the drunkard will take a large bolus of red pepper. He sometimes takes ten grains of this. It is easily administered in a crumb of bread. That sometimes quiets all the aching and distress at the epigastrium, and in that way tends to take the place of alcohol, and so secondarily to induce quiet and sleep.

Should alcohol ever be given? That is rather an important point. Many authorities think it should; some think it should not. I must say, for my own part, that I think a limited amount of alcohol, in the form of malt liquors, is useful and justifiable in treating these cases. You must bear in mind when you get one of these bad cases that in almost every case the patient has been a spirit drinker, accustomed to liquors which contain from forty per cent. to fifty per cent. of alcohol; and he is accustomed to carry large amounts. The percentage of alcohol in malt liquors is so small that he may drink a large quantity of them without approaching the intoxicating dose to which he was accustomed; and a pint or quart of ale is nothing, almost, to the habitual drunkard. The advantage of giving a certain amount of stimulant in this form is that it contains the bitter and narcotic effect of hops, which is very grateful to the stomach, and the nutritive effect of the malt, that is, it combines a tonic with a certain amount of nutrition and a moderate amount of alcohol. Many cases of delirium tremens do extremely well on being allowed a moderate amount of strong beer or ale; and they get along without much other drugging.

I know that in these cases the care of the patient is so wearing, and the anxiety, when the case is prolonged to the second or third night without sleep, is so great, that one is tempted to try other forms of drugs, and to administer them to the patient in large quantities to induce sleep. I do not think it is good practice. I think it defeats its end, and sometimes leads to bad results. I should rather pin my faith on mild drugs, and trust to food and gentle stimulation in the treatment of this affection.

This leads to another point: How much is it best, and in what way is it best, to restrain the patient? To tie them down and put them in the strait-jacket, or to fasten the ankles and wrists and put a sheet across the chest, as you sometimes see, is not in itself beneficial. I believe it is directly injurious; and if it can be dispensed with, it had better be. You can imagine for instance, the patient, almost terrified to death by the visions that he sees around him, tied down. He struggles frantically, exhausts himself, throws himself into a state of great prostration, becomes more and more alarmed. He cannot sleep, certainly, in that condition, and he probably receives more injury than benefit from it. At the same time, of course, in large institutions where a good many of these cases have to be taken care of, it is absolutely indispensable sometimes that some mode of confinement should be used; only I would enter a protest against its being used indiscriminately, or any more than is absolutely necessary. Take the case in which we can have our own way, in which the patient can be kept in a private room, or house, by himself, and have plenty of attendants; then it is never necessary to tie the patient, because the best form of physical restraint is by the nurses holding him temporarily and then relaxing, amusing him, talking with him, trying to win his confidence. In that way he does not exhaust himself, is not so alarmed, and gets well a great deal quicker.

Another point which I think is very important is, that these patients should not be left alone, and should not be shut up in the dark. Nothing terrifies them so much. They are very fond of society while in this state of mind. They seek intercourse with everybody about them. They are the better for it. Of course, if at any time they show the slightest disposition to go to sleep, then is the time to quiet things down, exclude the light, and while carefully watched, allow them to sleep as long as they will, not being afraid that they will sleep too long, as a rule. The presence of people with them, cheerful conversation, amusing them to a slight degree, letting them feel they are not deserted, assuring them they will get well, is of great importance in this nervous condition.

Now the next most important point, perhaps the most important of all, is food, nutrition If they can take nutriment, if the stomach will tolerate food, they almost always get well, and they almost always go to sleep after they have taken food. The trouble is, in the early stages, that the stomach is often extremely irritable and food is not retained. It is in this condition, I think, that minute doses of calomel are sometimes extremely useful, and also the use of carbonic acid gas in all forms of effervescing waters. Ice may be freely given and minute doses of calomel; and then gradually the patient can be tried with lime-water and milk, or some concentrated liquid food, etc. If the stomach will retain food, the patient should be fed on liquids at short intervals, precisely as we should treat a very sick patient in an exhausting disease. It is a condition of exhaustion, wants food, plenty of it, administered often in small quantities and in the liquid form. If you can once get the stomach to tolerate food, and afterwards give the patient something like a little malt liquor, frequently you can get along without any drug of a narcotic kind; and if that can be done, it is of great advantage.

I said that sleep was the panacea. It is in the majority of cases if it is lasting enough. Unfortunately, there is a certain percentage of cases where the sleep is not satisfactory. In the typical case the patient wears himself out in from twenty-four to thirty-six hours, and finally drops to sleep, and is thoroughly and dead asleep, and sleeps eight, twelve or fourteen hours, something of that kind, and wakes somewhat exhausted, but perfectly calm and conscious; then the disease does not come back. The thing is over, and he needs only careful nursing and feeding to get along. On the other hand, in the exceptional class of cases, the patient sleeps a shorter interval, and wakes delirious; and those cases are always of extremely bad prognosis. They terminate in two ways: either these short naps are ineffectual, and with recurring delirium, until finally the patient becomes exhausted, and passes into the condition of serous effusion of the head, and dies; or else, in another class of cases, and a pretty large one, the delirium keeps recurring, and he passes on to permanent insanity. I do not think it is perhaps realized how often we see cases at the hospital which after a week of struggling of this kind cease their tremor, perhaps cease a good deal the morbid vigilance, but remain permanently in a state of mania, and are practically insane. Eventually, perhaps, they have to be removed to insane asylums, and pass through some of the stages and treatment of ordinary mania, with various results. This would seem especially to be the case with powerful men of athletic habit, accustomed to live out of doors, and commit great excesses; at any rate, that is the class of cases I have in mind.

Sleep, when it comes and lasts, and the patient wakes sane and clear, is a cure. When it comes interruptedly, and the patient wakes delirious, the prognosis is extremely unfavorable.

You must see, of course, that with a patient in this condition, it is extremely difficult to treat a fracture, or to bring about a successful result in a head injury. It is in injuries of the extremities and in injuries of the head that delirium tremens is so disastrous, either in producing bad results to the injuries themselves, or in finally killing the patient. Delirium tremens, as you may imagine, is the worst possible complication of a scalp wound whether with or without a fracture of the skull. The patient's brain is in a morbid state of excitement for a good many consecutive hours. He is liable, of course, to set up a meningitis in consequence of his injuries; and his chances of doing this are very much increased by the delirium tremens which accompanies many of these cases. In injuries of the extremities, especially of the lower extremities, it is almost impossible, in fractures, to keep the parts still while the patient is in a state of delirium tremens. I have sometimes found that they did best by being slung up temporarily in the Nathan Smith anterior splint, in which the leg is suspended on a wire frame, and held up over a pulley, so that it hangs. In this way a fracture of the tibia or femur can be held relatively quiet, and the patient can move about all he likes without doing much injury to the leg, because the leg is kicking about in the air, and not reaching any other object. With this apparatus, the patient can get out of bed, sit on a chair, and get into bed without disturbing the fracture.

What could be better than instantly securing the patient, and doing the leg up in an immovable plaster cast? Any amount of apparatus that we can safely put on to the living tissues of the limb will not be sufficient to control the quivering and twitching of the long muscles, which the patient can keep up inside of the cast, so that it sometimes happens that upon removing the cast after a week or so, we find a compound fracture where originally there was a simple one. It is perhaps safer that the limb be put up in the Nathan Smith splint, and the patient watched a day or two until the delirium has subsided; or if the plaster cast is used, it is safer that it should be in the form of a high trough, having the small surface of the front of the bones exposed, and thus the condition of the fracture can be constantly seen and watched. It may seem almost incredible, but I have known of instances in which the patient removed the plaster cast from the leg when not thoroughly watched. To be sure he had very little of his finger-nails left in the morning. Also, more remarkable, this patient finally got a good leg, although he had a fracture in the middle of the femur, and we excepted almost anything to result from the way in which he tossed about for a number of days.

Other agents produce a certain sort of delirium tremens; for instance, tobacco, if used in very great excess; tea notably. The excessive tea-drinker has a tremor and a great nervous excitation or wakefulness, does not have the delirium, but the other phenomena of delirium tremens, and he has to be treated in the same way.

The treatment of the convulsions which we occasionally see in the drunkard is pretty difficult. I do not know that we can do much except to try as rapidly as possible to get the alcohol out of the system. These convulsions are occasionally fatal. I have seen several result fatally after a day or so of continually recurring convulsions following the condition of pure alcoholism. The treatment, of course, should be to eliminate the alcohol, and to soothe the patient if we can.

Three or four other agents I will speak of for a moment, which are extremely useful with the drunkard in averting an attack. For instance, a person comes to you, and says plainly: "I have had these attacks before, and I feel one coming on. I am getting shaky, cannot sleep, am beginning to think I see visions, etc., etc." What shall be done? Of course, he wishes and you wish, that he should abandon the habit of taking alcohol, and you want to carry him through this threatening attack, and compose his nerves. In that case there are some other agents that seem to do a great deal of good. Most important of these I think are the preparations of coca, given in small doses, especially the coca wine, which is extremely useful in counteracting the excitability produced by this state of slight delirium tremens. Camphor also is another old-fashioned remedy, sometimes very grateful to the patient, and very soothing. Asafœtida, a much-disused agent, but still, I think, an extremely valuable one, may be given in pills well coated over so that it is tasteless and does not nauseate the patient. It should be given largely to be of any effect — ten, twenty to thirty grains; and its advantage is that it is quieting, disposes to sleep. It is also to a very marked degree stimulating, and it is also somewhat relaxing to the bowels. These three qualities render it extremely valuable in slight nervous affections resulting from incipient delirium tremens or alcoholism. Hyoscyamus also seems to have a very good effect sometimes in quieting the patient and making up for the loss of sleep and the nervousness that he feels. These patients also may sometimes be given coffee and tea, if they wish it, to take the place of other stimulants. Once in a while some effect may be got from counter-irritation applied over the pit of the stomach, which sometimes affords great relief in this nervous state.

We would say then, in short, to sum the matter up, that if you have a patient who is in this incipient stage, you try these simple remedies and take care of him. If you have a patient who has been on a tremendous debauch, and is still full of alcohol, the treatment of delirium tremens will not be of the slightest avail until you have eliminated the alcohol from the system, and that can be done most speedily by simple cathartics, by producing sweating, stimulating the kidneys, and allowing a little time to elapse before you apply the other treatment. When you meet the real case of delirium tremens, it is best conquered by gentle and sustaining treatment rather than by any violent treatment, personal restraint instead of mechanical restraint, plenty of food if it can be taken; if liquor is given, in the form of malt liquor; if narcotics are used, the mildest possible agents to be tried first. If the patient sleeps, and has a good sleep and wakes once sane, he is certainly cured. If he has an imperfect sleep and wakes delirious, he may get another and better one, and wake up sane; but he is extremely liable to get a succession of short naps, and wake with a delirium that is liable to terminate in acute mania.

It is a little difficult, until you have seen a good many of these cases, to recognize this condition of delirium tremens when it is first coming on. Its incipient stages, however, are quite marked to one who has seen them. These patients usually begin by being very talkative and extremely communicative with regard to their past history and the nature of the accident. They seek conversation with every one about them. They are a little too wakeful and excitable. They have rather a too wide-awake look about the face. They are too alert all the time. Accompanying this there is very frequently a little tremor to be detected, until at last delirium tremens is developed with great rapidity and positiveness, and there can be no doubt about the case. Of course, if these early stages are detected and treated, we have a much better chance of warding off the subsequent affection, so to speak, than if they were overlooked; hence I think it is a good practice in treating all hospital cases, where we have to deal with such an immense amount of these results of drunkenness, to always consider that point when you look at a patient brought in with a broken leg, for instance. He has got a broken leg; what else? Is he a drunkard, or not? It is of no use to ask him. You must judge by looking at him; and in many cases you can learn to distinguish the person who drinks from the one who does not drink. If you are in doubt, you had better give him the benefit of the doubt, and watch him closely. Administer some gentle solution — a mercurial cathartic; perhaps early in the case, a mild stimulant, or tonic compound like beer; or the early administration of a sedative of simple nature the first night you see him. In this way you may sometimes avert or postpone, I believe, the severe cases, and lead them to better results.

The law holds the drunkard accountable for anything he does. It is a little in dispute, I think. A good deal is to be said on both sides; and I think a good deal is said on both sides by judges in court as to how far the patient actually crazy with delirium tremens should be considered an accountable being. We know how far the point is stretched in endeavoring to secure the acquittal of criminals, that they may have inherited insanity, or been insane, or had a temporary insane impulse, or something of that kind, and that sometimes this point is carried so far as to be abused. If any person is to be allowed any privilege or loophole to escape from the consequences of crime, it seems to me it should be allowed also to the case of delirium tremens. It would not do to excuse the man who is clearly drunk from the consequences of the crime he may have committed, because he voluntarily put himself in the condition; but if he has passed into the state of delirium tremens, and then committed a homicide, not from malice aforethought, but only because he was afraid something was about to happen to him, I think he ought to have the benefit of the doubt, as being temporarily under the dominion of an insane impulse. I would strongly impress upon your minds that you cannot trust in the slightest degree patients with delirium tremens. You cannot believe them to the slightest degree, and you should have them closely watched. By way of illustration I may cite one case which occurred in the City Hospital, in Ward K, which is on the ground floor, and which at that time did not have any netting or bar at the windows, and which happened to be used at that time for females. Going through, one morning, I found an old drunken woman, well advanced in delirium tremens, who attempted to cut her throat. She did not succeed. She only made a gash through the flesh, which had been sewed up, and that was doing perfectly well. The nurse said to me: "I wish you would control her, because she keeps pulling off the bandage, and I am afraid it will start the bleeding, etc." So I made some remarks to her, which I thought produced a very fine effect. I asked, "Do you want to get well?" "Oh, yes," she answered. "Well, if you want to get well, you must not touch these bandages. You will die if you touch them." "I will never touch them." She sank back quietly, and I walked down the corridor. Hearing a commotion, I looked around, and to my astonishment this patient had got out of bed, pulled off the bandages, and jumped out of the window. You may produce an impression one second; it is forgotten the next second; and a crime or suicide may be committed the moment your back is turned.

Original Articles.

REMARKS ON ACUTE PULMONARY DISEASES IN CHILDREN.

[illegible]

[illegible] Hospital.

SOME changes of opinion which have occurred recently in connection with the acute lung troubles to which children are subject constitute an excuse for this paper.

"Congestion of the lungs" is a term so generally employed that it appears to me worth while to try to define the conditions under which a child may be properly said to be suffering from the effects produced by it — to rescue the expression, if possible, from the ill repute into which it has fallen in the minds of those who object to a name which as constantly used both by doctors and laymen, implies too much, too little, or nothing at all.

Aside from the congestion which accompanies inflammatory conditions of the lung tissues and that which is present in venous stasis of the pulmonary circulation, has the term any valid claims to consideration as an entity? And if it has such claims, are there good reasons for ignoring them? The symptoms to describe which the name is used by some of the best French authorities are those of a frank pneumonia — most frequently of the apex — and differing from those usually observed only in their ephemeral nature: a healthy child is seized with all the rational and physical signs of an acute pneumonia, but in a day or two, aside from weakness, *is well*. In another class of cases the presence of dulness and a soft bronchial souffle is discovered in a child who has been ill only a day or two with a considerable elevation (103°–104° F.) of temperature and no special symptoms pointing to the chest. These signs fade away with little if any redux crepitation, and the child is soon playing about. Do not these cases correspond exactly to what is so often observed in epidemics of typhoid in cases of children? Are they not aborted pneumonias? Is it not better to call them so, in view of the fact that the Fraenkel-Talamon pneumococcus has been found in the sputa of a case which lasted only three days?

In that condition of the lung which sometimes accompanies an acute pleuritic effusion, and may give rise to symptoms which lead to further (and unsuccessful) tappings, we have something with a good and sufficient reason for existence — an intense congestion of the lung tissue which should, I think, be called "*pleuro*-pulmonary congestion," and not "congestion of the lung," or "lungs." Another disease in which, so far as we know, the condition of the lung is one of intense congestion, but which gives rise to symptoms so closely resembling a pleuritic effusion that the differential diagnosis is impossible excepting by means of an exploratory puncture, is Gromcher's "Spleno-pneumonia." I consider both of these maladies properly labelled (so to speak) by the terms just quoted, as conveying a definite idea of the diseases referred to; and it appears to me far better to adhere to the terms "Aborted pneumonia," "*Pleuro*-pulmonary congestion," and "Spleno-pneumonia," than to lump three diseases which present such very different symptoms as "Congestion of the lungs," the use of which should be limited to a condition rarely met with (in children at least) and to which I shall soon have occasion to refer.

Until within comparatively a few years so much confusion has reigned regarding acute pulmonary disease in children that the existence in them of a frank pneumonia of the type which is seen in adults has been denied by some, its great rarity and extreme gravity emphasized by others, while a third class of observers have insisted that it is frequently met with at all ages. From what standpoints these widely divergent views have been obtained I will try to explain a little further on. At this point I will merely state that frank (called also lobar, croupous, or fibrinous) pneumonia is recognized now as a common disease of childhood; that although most frequently observed between the second and sixth years, it also occurs in infants, and when uncomplicated is essentially benign until the twelfth year is passed. It is by far the commoner form of the disease in Boston among children who are well housed and cared for — the death of a child from "pneumonia" of any kind being extremely rare in the best dwelling portions of the city, bronchitis and grippe having under their conditions but slight tendency to result in broncho-pneumonia, which is practically the only type that kills, unless the Fraenkel-Talamon pneumococcus finds its way to the heart or brain in the frank form of the disease.

Broncho-pneumonia differs from the benign form as radically as any two diseases affecting similar organs can possibly differ. It requires only dirt, neglect, or overcrowding to thrive and *spread* — for its infectious nature (particularly in those forms of the disease which are most frequently observed in hospitals and other institutions where children are congregated) can no longer be regarded as doubtful. It may be caused by the presence in the lungs of any one of four microbes: the Fraenkel-Talamon pneumococcus, Friedlander's pneumococcus, the streptococcus, and the staphylococcus. In other words it is a *non-specific* infectious disease. Three fairly distinct types can be distinguished: the subacute and protracted, which occurs with the greatest frequency between the fourth and tenth years; the pseudo-lobar, between the first and fifth years; and lastly the acute, suffocating, catarrhal form which is usually observed in babies, and has masqueraded so long and successfully in the guise of "capillary bronchitis." It is of the last two that I propose to speak at some length, and incidentally to try to explain the reasons for the confusion which has reigned in regard to frank pneumonia and so-called "capillary bronchitis."

In regard to the subacute form, I think one of the most important facts to bear in mind is that it may last a year or two, and end finally in complete recovery. So long as the apices remain sound, there is always hope. Aside from the detection of physical signs at the apices, the diagnosis of phthisis can only be made (in the absence of expectoration) with certainty by obtaining the sputa for bacteriological examination through the use of apomorphia — the lungs being evacuated together with the stomach in the act of emesis. This procedure I have seen carried out, and the diagnosis of phthisis established in more than one instance. The pseudo-lobar or "mixed" form is mainly responsible for the very different views which were formerly entertained regarding frank pneumonia.

That this should have been the case admits of several explanations, no one of which would suffice alone; but if taken together, I think they are quite valid. Frank pneumonia is so rarely fatal before the twelfth year that the records of more than one large hospital fail to show an account of any autopsy of a *child* dying from this cause, and the natural inference might be drawn that a disease which never killed had no claims to existence. Again, cases of pseudo-lobar pneumonia (which is rare at best) have been observed in institutions where infants and very young children only are treated (and broncho-pneumonia is by far the most common form of the disease), where all or nearly all the rational and physical signs of the frank type were present, and the illusion was even carried out so successfully at the necropsies as to lead to the belief, that, while extremely rare, frank pneumonia in children was invariably fatal. Again, under exactly the same conditions a careful examination has shown the real nature of the disease, and strengthened the belief that frank pneumonia never occurred in children, for the reason that all the cases observed in one particular institution which had presented the symptoms of the disease during life proved to be something very different at the autopsy. Clinically the two forms (frank and "mixed") resemble each other so closely that aside from the very strong inferences which can be drawn from the patient's surroundings (particularly in hospitals and institutions), a diagnosis can only be made in many instances when a sudden drop of temperature and immediate convalescence shows what we have been dealing with. The fact that râles are heard in the lung opposite the site of extensive consolidation is not a reliable sign — as the coexistence of a bronchitis of moderate severity and a pure fibrinous pneumonia is occasionally observed. It is rather by the extremely difficult respiration and partial cyanosis, together with the concurrence of an *intense diffuse* bronchitis, that the diagnosis can at times be made. Again, while the consolidation of a pseudo-lobar or "mixed" pneumonia may be very extensive, it has but slight tendency to extend into the axillary space — a fact on which great stress is laid by the best observers. Fortunately, this type of the disease is by no means common.

Another fact which must be always borne in mind is this, no matter what *form* pulmonary inflammation may assume in a child — pneumonia of any type, pleurisy or simple bronchitis — it is often only the mask of acute tuberculosis. Hence the obvious necessity of inquiring into the patient's antecedents and examining carefully for enlarged glands in groins and axillæ. These cases of *apyretic* tubercle in young children, which suddenly burst out and rapidly kill are more commonly recognized at the present day than formerly.

The acute suffocative catarrhal form of broncho-pneumonia proves rapidly fatal in a large majority of cases. It kills so quickly in some rare instances that the gross aspect of the lungs is simply that of a purulent bronchitis. There is not sufficient time for collapse — the baby dies too quickly; and it is only after a long and careful microscopic search that a few of the air vesicles are found to contain leucocytes and disquamated epitheleum. It is this type of the disease which is responsible for the lengthy articles which used to appear in all books written on children's diseases, under the heading of "Capillary Bronchitis." Deaths from this cause constantly appear in reports of various boards of health as "bronchitis" or "capillary bronchitis."

Five years ago I was asked to write certain chapters for Keating's "Cyclopedia." and among them one on "Capillary Bronchitis." I had always thought it strange that I should never have seen a case; and I thought it still stranger when I failed to find an account of a single autopsy on the body of a child who had died of an "inflammation of the fine, but not the finest, bronchial tubes." I found myself suddenly confronted with one of the "most fatal diseases of childhood," of which apparently no child had ever died; and it was only after prolonged search and inquiry that I yielded to the belief which forced itself upon me that such a condition had no claims to consideration as an entity, and I so expressed myself. This belief is held to-day by the best authorities in Paris — physicians to the children's hospitals, whose opportunities for observation are practically unlimited. Acute suffocative broncho-pneumonia is the type which prevails in institutions like the Enfants Assistées, where it breaks out endemically in a contagious form every winter. In it the streptococcus apparently plays the leading rôle, although the other microbes which I have mentioned are also found. In the pseudo-lobar form of the disease occurring in infants it is still the streptococcus which is most frequently discovered, while in older children the pneumococcus is commoner. Certain observations have given rise to a suspicion that the bacterium coli commune may also cause broncho-pneumonia in the presence of infectious diarrhœa.

There is one other condition which has aided in keeping up the delusion concerning "capillary bronchitis." I refer to those extremely rare cases in which without any antecedent trouble, children (usually infants) are seized with what is apparently a diffused bronchitis of the finer tubes, as shown by crepitant and subcrepitant râles heard throughout both lungs, accompanied by hurried respiration, high temperature, and well-marked cyanosis. Suddenly — perhaps in twenty-four hours — all these symptoms vanish. To what is this condition due? Assuredly, to acute congestion. It is the only manifestation of "congestion of the lungs," pure and simple, which is ever observed in children and consequently the only condition to which the term can properly be applied. The best French authorities believe it to be connected with rheumatism, and in the few cases which have been observed in Paris the children have been of rheumatic or gouty parentage.

In conclusion, I would say that I believe we may consider the following points well established: certain forms of broncho-pneumonia are very infectious, and should be isolated; that "mixed" or pseudo-lobar broncho-pneumonia is responsible for the confusion which so long existed regarding the frequency and gravity of "frank" pneumonia; that children do not have "capillary bronchitis"; and that with them "congestion of the lungs" is extremely rare and tends to speedy recovery.

Medical Etiquette in Austria. — A most undignified ending in a question of medical etiquette is reported from Vienna. Drs. Jantsch and Popper, having both been called by the father to a case of measles, could not agree as to the medical ethics involved. They began a controversy which was finally brought to a court for settlement. The judge confessed himself unable to decide such fine questions as were involved in medical etiquette, and suggested that they might apologize to each other and behave as gentlemen in the future.

REPORT OF CASES OF TUBAL PREGNANCY: WITH REMARKS UPON THE CHOICE OF OPERATION.[1]

[illegible] A.M., M.D.,
[illegible] Hospital.

MY experience of extra-uterine pregnancy includes only cases in which a rupture had occurred, and as far as could be determined they were all cases of tubal pregnancy. I shall confine myself therefore to this class of cases, leaving the question of treatment by electricity or otherwise before the occurrence of rupture to those who have had experience of non-operative methods. It is my feeling, however, that even in this class of cases a laparotomy done at once, when the character of the case is first recognized, is practically a safer treatment than any method which, though seemingly more conservative, exposes the patient to the risk of rupture at a time when surgical aid cannot be obtained.

This remark does not apply to those cases of abdominal pregnancy in which the danger of uncontrollable hæmorrhage during operation is great, and in which, also, there is less danger of an early rupture, and therefore more opportunity for the employment of methods directed against the life of the fœtus.

The abdominal cavity is now opened with such freedom and with so little danger that the surgeon has opportunities of observing pathological processes in their earlier stages, and thus learns sequences of events which would be imperfectly unravelled upon the autopsy table.

Many cases of ruptured tubal or abdominal pregnancy leading to circumscribed effusion of blood into the pelvis, have formerly been classed under pelvic hæmatocele. This error would naturally not be rectified if the patient recovered, and in case she died, the true cause of the hæmorrhage might easily escape the search of a good observer. Amid the masses of clots which accumulate in the lower part of the abdomen, there would be but a remote chance of finding and recognizing the ovum, and unless the sac were already well developed, it might thus easily escape observation.

The clinical symptoms, too, are often misleading, and many a pelvic hæmatocele formerly ascribed to some accident to the pelvic vessels during a miscarriage, might be more properly accounted a ruptured extra-uterine ovisac; the seeming miscarriage being merely the expulsion of the decidua.

Since abdominal work has called attention, however, to the frequency of the occurrence of tubal pregnancies, we have come to recognize the less severe cases of tubal rupture, and now know that many gradually accumulating hæmatocles differ from the dreaded cases of sudden fatal rupture of extra-uterine sacs only in the degree of hæmorrhage; a difference dependent on the vascularity of that part of the wall which suffers rupture.

The cases which I have to report represent various degrees of severity; from one in which the lower abdomen was filled with clots and the patient was in a great degree exsanguinated, to one in which the effusion of blood took place slowly and was completely encapsulated.

The treatment appropriate to these cases varies with the existing conditions. When a sudden rupture occurs, with a great effusion of blood threatening life, there is manifestly but one course, and that is an immediate laparotomy. No time is to be lost, and the operation being one of emergency, must often be done with incomplete preparation.

If the case is one of tubal pregnancy, the procedure is fortunately not difficult. The tube is easily found, drawn to the surface and tied. The knife and ligature are the only essentials for this operation, so that with an anæsthetic and a pocket case, a ready man might save a patient who could not survive the time necessary for more complete preparation.

It is well to wash the clots out thoroughly by irrigation of the abdomen with hot water; and if this cleaning is not entirely satisfactory, it is well to introduce drainage into the pelvis for a day or two, until the fluid ceases to come.

CASE I is an instance of a rupture threatening life by hæmorrhage.

On January 17, 1891, in consultation with Dr. C. S. Millet, of Rockland, I saw a stout, married woman of twenty-five, who was suffering from a severe attack of abdominal pain.

The history was somewhat obscure, her menstruation having always been irregular. Three weeks before the attack she had passed a menstrual epoch, but a week later she had had a show for two days. The onset of pain two or three days before had been sudden, and it had been paroxysmal in character; and each paroxysm left her weaker than before.

The lower portion of the abdomen was very tender to pressure, and this sensitiveness was most marked on the right side, and it was on this side, too, that the resistance to pressure was greatest. As well as could be determined through the rigid abdominal wall, there was an ill-defined cake in the right inguinal region, and there was some dulness on percussion here.

The patient had been constipated, and had suffered considerably from nausea and vomiting. I saw no reason to differ with the diagnosis which had been made of probable appendicitis, especially in view of a constantly increasing fever, with a temperature which had reached 103° F. at the time that I saw the case. An immediate operation was advised and acceded to.

An incision was made in the right linea semilunaris, and at once on opening the peritoneum there was a gush of dark, fluid blood. The nature of the case was now clear, and the fingers carried down into the pelvis at once made out the right Fallopian tube buried in blood-clots, and with a mass about the size of a lemon at its distal extremity. It was drawn to the surface, ligated and cut away.

With a good deal of difficulty the abdomen was cleared of blood, drainage was introduced, and the wound was partly closed. The patient, in her weakened state, suffered seriously from the shock, but slowly rallied and made a good recovery.

The mass at the end of the tube was an unmistakeable ovi-sac, formed by a dilatation of the outer third of the tube.

In the second case the hæmorrhage was less severe, but still considerable. The blood was not encapsulated, but was effused into the general peritoneal cavity: At the same time, it did not escape with sufficient rapidity to threaten life.

CASE II. Harriet P., aged thirty-three, entered the hospital June 24, 1892. She had been twice married, but had had no children. One miscarriage had occurred six years ago. Her catamenia, which began when she was fifteen, had always been irregular and painful, with but moderate flow. Since the miscarriage she had had intermittent pains in the ovarian regions, especially on the right side.

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[1] [illegible] Obstetrics and Diseases of Women of the [illegible] December [illegible], 1892.

The present history was that the catamenia ceased April 25, 1892. The breasts became notably larger in June. On June 10th she began to flow slightly, with much pain. On June 23d, the day before entrance, a mass of membranes was expelled. The flowing increased after this expulsion of membrane, and continued during the first part of her stay at the hospital till July 1st, when in the night she had a great deal of pain in the right inguinal region. After this, at intervals of a few days, she had several attacks of very severe, sharp pain in the right, lower abdomen. There was a constant flow, slight in amount, and of a dark, brownish color. Examination showed a mass on the right of the pelvis, and also a resistance on the left side. An operation was advised, and on July 22d a laparotomy was done.

Immediately on opening the peritoneum, there was an escape of fluid blood, and the pelvis was found filled with clots. The uterus was pressed forward to the right by the mass of blood in the left side of the pelvis. The left tube and ovary were incorporated in this clot, and containing a mass at their extremity, they were pulled up and tied off. The right ovary was somewhat enlarged and cystic, and was also removed. There was considerable oozing after the clots were cleared out, and a drainage-tube was introduced.

Her recovery was slow and comparatively uneventful, and the healing was complete about the middle of August. September 1st she left the hospital well, although there was still a small sinus at the site of the drainage-tube. This soon closed.

In the third case the effusion of blood was quite rapid, and was accompanied by rather severe constitutional symptoms; at the same time it was encapsulated and shut off from the general peritoneal cavity.

Case III. The patient, Kate G., entered the Massachusetts General Hospital July 7, 1892. She was a stout woman of thirty-four, who gave the following history.

Her catamenia were regular after they first established themselves at the age of thirteen. She was married in September, 1891; her catamenia ceased on the 4th of May, 1892. Further than this no special sign of pregnancy was noticed. Eleven days before entrance, while sweeping, she was seized with a severe pain in the lower abdomen. Soon after, vomiting came on, and this had persisted ever since.

One week before entrance she began to flow, and about this time a tumor was noticed in the left side of the pelvis. This greatly increased in size, until it extended across the middle line and became nearly central.

As soon as she could be prepared for operation she was etherized, and on bimanual examination, a large mass which rose up above the pelvis was found to be continuous with a fluctuating swelling in the posterior vaginal cul-de-sac. An aspirating needle introduced into this drew liquid blood, and the rapid increase in the tumor making me fear that active hæmorrhage was going on, I at once did a laparotomy.

Upon opening the sac in which the blood was contained, the upper wall of which was made up of coils of intestine glued together, there was a great escape of fluid and solid blood which was very fetid in odor. The sac was cleared out as completely as possible, and the general peritoneal cavity was thoroughly irrigated. Drainage-tubes were then introduced into the bottom of the cavity, and some gauze was packed in to control the moderate oozing that existed.

This patient made a slow, but good recovery from this operation, although for several days the temperature was decidedly raised.

In the fourth case we had a condition similar to that in Case III, but still more chronic in character. It is interesting mainly because a different plan of treatment was followed.

Case IV. Sarah M., twenty-six years of age, mill-hand at Lawrence, entered the hospital September 1, 1892. She had been six years married. Four years ago she had a miscarriage at three months, and two years ago bore a child at term. The catamenia were always normal, except for pain at the commencement.

She had her last regular catamenia thirteen weeks ago. After going for five weeks without any show, she began to flow, and continued to have a bloody discharge for eight weeks. This ceased a few days before entrance at the hospital, but there was a little recurrence during the journey from Lawrence to Boston. When this flowing first began, she had considerable abdominal pain, which began suddenly while at work in the mill. She went home, and on reaching the house, fainted. From this time she was a sick woman, with a good deal of abominal pain. This extended through to the back and down the legs. For three weeks before entrance she had been troubled much by vomiting.

Examination of the abdomen showed a hard, tender mass on the right, reaching up out of the right side of the pelvis and extending about two inches above the pubes. By vaginal examination the posterior cul-de-sac was found to be bulging and low down. The uterus was pressed forward under the pubes. In this case there was no history of any recent hæmorrhage, and it seemed a safe and proper case to treat by opening through the vagina.

This was done by Dr. Balch, and the sac, which was filled with foul smelling clots and fluid blood, mixed with pus, was thoroughly washed out. The temperature, which had been 103° before the operation, fell to normal on the following morning, and the patient made an uninterrupted good recovery.

Besides these cases which I have reported, I have seen a number of cases of pelvic hæmatocele, in some of which, at least, there is but little doubt that the cause of the hæmatocele was a rupture of an extra-uterine pregnancy. Some of these I have seen disappear by absorption, without operation. In one case which I remember, I introduced an aspirating needle and withdrew a moderate amount of fluid blood, and then left the rest to be removed by absorption. This case resulted favorably.

These cases occurred so long ago that my memory does not serve me with sufficient accuracy to establish in any of them a positive diagnosis of extra-uterine pregnancy; but I mention them as throwing some light upon the course which these limited effusions of blood will sometimes follow. The fact that severe secondary hæmorrhages may occur in these cases, taken with the fact that these effusions so frequently become putrescent, would incline me to resort to a vaginal incision, with drainage, in any case in which absorption did not quickly establish itself. When the tumor shows a tendency to enlarge by successive hæmorrhages, operation cannot be safely delayed, and in these cases the incision should be through the abdominal wall, in order that the bleeding point may be seized and controlled.

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Clinical Department.

A CASE OF TUBAL PREGNANCY.[1]

BY FANNY BERLIN, M.D.

MRS. W. H. B., age twenty-nine; married five years; one child four years old. Mrs. B. has not been in good health since birth of child. Before and after marriage she suffered greatly from dysmenorrhœa; since birth of child she has been quite free from it. But she has been troubled with leucorrhœal discharge, owing to a cervical endometritis, which, in its turn, was due to a badly lacerated cervix and retroversion of the uterus.

On the 25th of September, 1891, her husband requested me to see his wife, who, he said, after having felt apparently quite well, while going to the bathroom, was suddenly seized with a severe attack of pain in the right abdomen. The pain was so intense that it made her quite sick at her stomach and very faint. As she had eaten a great many grapes the previous evening and swallowed the seeds, she thought that "they must have lodged in her vermiform appendix and produced the intense colic."

When I arrived at her bedside at about 10 A. M., I found her lying on her back with thighs flexed on the abdomen, looking quite pale and distressed and complaining of great soreness in the abdomen. Her temperature was 99° F; pulse 84, rather weak. The abdomen was very tender to palpation over the entire surface, especially so in the ileo-cæcal region; and quite tympanitic on percussion. Examination *per vaginam* was negative. I gave her a hypodermic injection of one-quarter of a grain of morphia and one-hundreth of a grain of atropine, and ordered hot poultices to the abdomen, to be changed every two hours. I saw her again at 5 P. M., and found her so much relieved that the hot poultices were discontinued, and rest and liquid diet ordered.

September 26th. Found her quite comfortable. An enema of soap-suds and turpentine brought away a great quantity of flatus and fæcal matter. Temperature and pulse were normal.

September 28th. Still complains of pains in ileocæcal region. Bowels had not moved since the enema was given. Half an ounce of castor oil was ordered.

September 30th. Tenderness to pressure in ileocæcal region is less, but she still complains of same pain.

October 3d. Found her much better. The soreness had nearly all gone, and she had had almost no pain. She said her monthly period was due on that day. She was allowed to sit up in bed, and to get up the next day if she continued to improve.

On the 6th of October she surprised me by walking into my office. She had come in the electric cars from one of the suburbs of Boston. Said she felt quite well, but worried over the non-appearance of her monthly period, which was due on the 3d of October. I made a vaginal examination, but found nothing abnormal except the old condition, namely, retroversion of the uterus and laceration of the cervix.

I did not see nor hear from her again until the afternoon of the 20th of October, when I was summoned by telephone to come "immediately." I arrived there at 2 P. M., and heard the following report: On the 12th inst. she had a slight show of blood, which continued until the 17th, when she flowed very freely; and on the evening of the 17th she passed "a funny looking clot, like a piece of raw chicken." This was not saved. The flowing continued, and on the evening of the 19th she fainted upon going up stairs; and on the 20th, at 11.30 A. M., she was taken suddenly with excruciating pains in the lower part of the abdomen, perineum and vulva. She fainted, and later vomited freely.

When I saw her she was extremely pallid; pulse 60, weak. Her looks suggested to me the occurrence of internal hæmorrhage. Examination, *per vaginam*, showed the following: exquisite tenderness of vulva, lower and upper part of vagina. In posterior cul-de-sac an irregular mass, the shape and size of which at that time, owing to the extreme sensitiveness of the parts, could not well be outlined. She was still in a great deal of pain, which necessitated the administration of a quarter of a grain of morphia hypodermatically. I also gave one ounce of brandy by the rectum; and, enjoining absolute rest, I left her for the night, after having told the family that I thought an internal hæmorrhage had taken place, probably in consequence of a ruptured tubal pregnancy; that an operation would most likely have to be done, but as she then seemed in a comparatively fair condition, immediate interference did not seem indicated.

October 21st. A. M.: Slept very little; was in pain, and used two one-grain of opium suppositories. Temperature 99.6°, pulse 90. Local examination shows the same as yesterday. P. M: Temperature 100°, pulse 104. Is in a good deal of pain. Vagina seems more crowded by the mass, and extreme tenderness prevails. Morphia (one-quarter of a grain) hypodermatically.

October 22d. A. M: There is less tenderness externally, but the tumor seems to crowd down more into the vagina, and fluctuation can be detected. Temperature 99.6°, pulse 90. Ordered Hunyadi water (two ounces). P. M: Is again in pain. Temperature 99.8°, pulse 90. Had two movements of the bowels. Morphia (one-quarter of a grain) hypodermatically.

October 23d. A. M: Passed a comfortable night; not much pain; temperature 99.2°, pulse 84. At 2 P. M. I was again summoned in great haste; and when I got there I found her deeply collapsed — face extremely pallid, extremities cold, sighing respiration, and barely able to speak. Temperature 97°, pulse extremely weak. The attack had come on without any apparent exertion on her part. Of course, I knew that a fresh hæmorrhage had taken place, and that waiting much longer was hazardous. I told the family that an operation would have to be done, and asked for a consultation; to which request they gave their consent. At about 4 P. M., Dr. Maurice H. Richardson kindly saw the case with me. He concurred in my diagnosis of internal hæmorrhage, and also advised an operation. The patient had by this time rallied considerably from the shock; and we decided to postpone the operation until the following morning.

October 24th, at 9 A. M., the patient and the surroundings have been made as aseptic as was possible in a private house. I opened the abdomen, assisted by Drs. M. H. Richardson and Grace Walcott, Dr. Lena Ingraham administering the ether. The peritoneal cavity was found considerably filled with fluid and clotted blood. In the small pelvis, on the right side, was found a mass, the size of an egg, closely attached to the upper part of the uterus and including the uterine end of the tube and right ovary; the terminal end of the tube was free. The mass was tied close to the uterus and cut away. The left appendages were examined, found normal, and left *in situ.* The abdominal cavity was then thoroughly washed out with warm water, and the wound closed with silkworm-gut stitches. The patient stood the operation well, and made a rapid and very good recovery.

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[1] Read before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, December 28, 1892.

The report of the examination of the specimen made by Dr. F. B. Mallory, is as follows: Terminal portion of Fallopian tube about one and one-fourth inches long; ovary somewhat flattened, stained with blood on one side; also a mass of clotted blood, size of an egg. Microscopic examination of clotted blood showed chorianic villi and bits of placental membrane present. Corpus luteum in ovary. Fallopian tube normal Attachment of placenta not determined. Diagnosis, extra-uterine pregnancy. Three points of interest suggest themselves in connection with this case:

(1) The probable time of conception and the rupture of the tube and internal hæmorrhage.

(2) The possibility of an earlier diagnosis.

(3) The treatment in the case under consideration.

With regard to the first point, I believe that conception must have taken place very soon after the menstrual period in September; in fact, the patient rejects all possibility after this date. Consequently, the first symptoms of interruption of pregnancy were on the 25th of September, or in the third week of conception. This is unusually early, as according to Tait ("Diseases of the Ovaries"), the usual time of rupture is between the second and third month of gestation. Bland Sutton, however ("Surgical Diseases of the Ovaries and Fallopian Tubes"), gives the date of rupture or abortion in tubal pregnancy as at any date from the third to the twelfth week. I do not believe that there was any great internal hæmorrhage until the 19th of October, or six weeks from the last menstrual period, the first symptoms of disturbance being principally the pain.

Ought I to have made my diagnosis earlier, namely, on September 25th? I suppose one more experienced in diagnosing cases of extra-uterine pregnancy might have done so. But the absence of local symptoms on repeated examinations *per vaginam*, the seat of the pain in ileo-cæcal region, the very constipated habit of the patient, and, last but not least, the fact that the omission of a monthly period could not then properly be considered, made the case look to me then as one of a mild attack of appendicitis. At the next attack I saw my error, and it was fortunately not too late.

As to the treatment: I do not think I should have treated the case differently had I made an earlier diagnosis. There was no indication for actual interference until there was reason to believe from the collapsed state of the patient and local appearance of a semi-fluctuating tumor in the posterior vault of the vagina that an internal hæmorrhage was going on. There was, moreover, no tendency towards the effused blood being absorbed, but, on the contrary, a great tendency toward repetition of the hæmorrhage. Under such circumstances it is my firm conviction that nothing except opening the abdomen and tying the bleeding blood-vessels would have saved my patient's life.

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CASE OF EXTRA-UTERINE PREGNANCY.[1]

BY GRACE WOLCOTT, M.D.

Mrs. M. P., colored, forty years of age, was seen in January, 1891. She had had three children, the last one three years previously.

She complained of pain in the pelvis and amenorrhœa for three months, having had one profuse period which did not correspond to the menstrual epoch before that time. Upon examination a mass was found in the pelvis, posterior to, and above the uterus, which was thought to be a fibroid at first, but upon subsequent examination the chances of its being an extra-uterine pregnancy were discussed. The breasts contained no colostrum, and no fœtal pulse was to be heard.

The patient's general condition was poor and was growing worse. She suffered considerable pain and was unable to work.

The possible necessity of an operation was explained to her, but she was extremely timid and declined to consider it. She was put upon general treatment to improve her condition if possible.

She was seen ten weeks later, at her home, when examination showed the abdomen corresponding to the seventh month, but having a different feel from a normal pregnancy. There were diffused pulsations not synchronous with the maternal pulse. Fœtal parts, or what simulated them, were made out. The breasts contained colostrum.

The patient's condition was much worse than before. She was greatly emaciated, the digestion very poor, pulse rapid and weak, respiration rapid. The heart and lungs were normal.

Again the necessity of operation was explained to her.

After seeing her several times and relieving the urgency of her condition, I stopped my visits, as they promised to send for me at any time should she be worse. In the meantime I made arrangements for a hasty operation as soon as the emergency should arise. Hearing nothing I called two weeks after my last visit and was told that she died very suddenly one week previously. The physician who was called in said she died of "heart failure."

This case seemed to me like the one which was reported to this Section by Dr. Cushing, in which I assisted at the operation. I had the opportunity of examining his case and knew its clinical history, and in many points they are alike.

From what I could learn of the patient's condition shortly before death, it seemed to me probable that the sac had ruptured, and that either shock or hæmorrhage was the real cause of death.

A Jack of all Trades, as described in an old English paper: "At a village in the Wilds of Kent, over a door is this inscription: 'Burdon, surgeon, carpenter, man midwife, and schoolmaster; likewise fine pens, and teeth drawn by the maker; also a curious assortment of blacking balls.'"

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[1] Read before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, December 28, 1892.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

G. H. WASHBURN, M.D., SECRETARY.

Meeting, December 28, 1892.

Dr. A. T. Cabot read a paper on

EXTRA-UTERINE PREGNANCY.[1]

Dr. Grace Wolcott and Dr. Fanny Berlin reported

CASES OF EXTRA-UTERINE PREGNANCY.[2]

Dr. E. W. Cushing: I think that these papers have been of very great interest, and I certainly should coincide in my views with what Dr. Cabot has so wisely concluded. This subject is one which has been of a good deal of interest to me. It came very near my house at one time; and at that time I took the pains to look up all the cases and specimens in the Museum at Harvard, which, Dr. M. G. Parker and I photographed with much labor, and it may interest some of the gentlemen here to look at the pictures. These were cases reported by Dr. Jackson; and the state of feeling then was very different from what it is now. He reported them with the same accuracy and scientific interest as if a man had been struck by lightning. The death was as if from the judgment of God; surgery had nothing to do with such cases.

From a study of these pictures it is easy to see how comparatively simple in most cases an operation would have been. The first picture is one of Dr. Bernay's, of St. Louis, — a double uterus with an extra-uterine pregnancy in the tube of one horn. The others are ordinary cases.

Now, how different is the condition of things is seen by reference to these histories that have been reported to-night. How easy and how simple is the saving of such cases. Personally, I have had only one case of extra-uterine pregnancy, and that was in the ninth month, and comes almost under a different category from what we are considering to-night,— the removal of a ripe fœtus rather than making a diagnosis and operating on a case in its very beginning.

Now, in the first place, comes the question of diagnosis before rupture. Plenty of diagnoses have been made; but it is hard to see how anybody can attain such perfection as to be sure of his case. I cannot conceive how, if a man is sure of his case, he can do anything else than have the abdomen opened (if he does not open it himself); and I wish to register my opinion against the electrical treatment which I understood to be under discussion to-night. There are several cases on record to show what a trifling with life it is to adopt any such treatment. In the first place, was Janvrin's case, where he gave electrical treatment, went home, and came back to find the patient dead the next day. You remember how Dr. Engleman, of St. Louis, who certainly is as good in electrical treatment as anybody in this country, publicly stated that he would have nothing to do with this treatment in the future, saying, "I have abandoned the teaching that electricity should be tested in the early stages of extra-uterine fœtation and would now urge immediate operation."

To remove an extra-uterine pregnancy, before rupture, is, as things now go, hardly worthy of the name of an operation. It is one of the easiest things in all abdominal surgery, unless it happens to be an interstitial pregnancy. To find an unruptured tube and take it out, is very simple. I have seen it done once or twice by accident, where it was supposed to be something else. After rupture the operation is more complicated but, *a fortiori*, there is nothing to do except to tie that bleeding vessel. The difficult cases in which to decide what to do are those cases where the symptoms are not so violent as to imply a rupture and hæmorrhage, but gradual, such as we used to call pelvic hæmatocele. I have seen two or three of those cases. The case I once reported, with the figures, in this Society was practically one of them.[3] That was some years ago. To-day I should operate in such a case instead of waiting. The case got well, but I do not think it was good surgery to wait under the circumstances. I have seen two other cases of pelvic hæmatocele where I am satisfied it was a rupture of an extra-uterine pregnancy. One was ten, the other four years ago. In the latter case I kept the woman in her bed. I had in the next room everything ready to operate at a moment's notice, and in that way I watched the case several days. The symptoms disappeared and the hæmatocele was absorbed. I can understand that in some doubtful cases such delay, with the possibility of immediate operation and with vigilant watching the case, is justifiable, and would be followed by good results; but it seems to me the thing to be impressed on everybody is that an extra-uterine pregnancy is a very dangerous thing — that the operation is not a dangerous one as things go, not a difficult one in proper hands, and followed in the vast majority of cases by perfect recovery. All this applies to cases in the earlier months. As for doing anything in later cases, where there is a fœtus present, trying to kill that fœtus after bones have formed, and leaving it to cause suppuration and poison the woman, and set up all sorts of trouble, seems to me barbarous. What to do in the later stages, when there is a fœtus in the abdomen, of six, seven or eight months, becomes a very grave question, which I had to consider once, that is, balancing the life of the mother against the life of the child and the danger of removing a placenta while the circulation in it was still active, against the risk of rupture, sepsis or other accident from delay. Mr. Tait advises waiting until the child is viable, in the faith that it is between the layers of the broad ligament and extra-peritoneal, then remove it, and if the placenta is not easily removed, cut the cord off and leave it inside. In my case I waited. We were not quite sure what the case was. There had been no fœtal motion and no fœtal heart was heard. I waited until symptoms of failure of general health arose, and found the child was dead, had died about the eighth or ninth month, and it was not in the layers of the broad ligament, but in a capsule in the abdomen. The placenta lay half in the tube and half adherent to the intestines, etc., in the abdomen. It broke in two. The part not in the tube was fatty. The part in the tube gave rise to some hæmorrhage, which yielded to packing with gauze. I introduced a drainage-tube in the cup-shaped dilatation of the tube which was sewed to the abdominal wound, and one in the abdomen. The case did very well. I think, if possible, and if the woman's health is not suffering, there is very much to be gained in having the circulation in the placenta mostly stopped at the time of the operation; and with careful watching I should say that chance would rather overbalance the danger of rupture of the sac and what is to be gained by the possible saving of the living child. The question is a little different from Cæsarean section. It is one thing to kill a child outright and another to decline to greatly increase the mother's risk by interfering before the child has died from natural causes. I think that all casuists would admit a distinction in that case.

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[1] See page [illegible] of the Journal.

[2] See page [illegible] of the Journal.

[3] Annals of Gynæcology and Pædiatry, May, 1890.

The only other point is as to the whole question of Mr. Tait's theory of rupture into the folds of the broad ligament, as being the principal cause of hæmatocele. He makes a great distinction between the cases where the tubal pregnancy causing hæmatocele or allowing a fœtus to develop, ruptures between the folds of the broad ligament, and the cases which rupture into the abdominal cavity and are almost necessarily fatal. It looks like a distinction based on theory rather than on results. The two Prices have operated on over seventy-five cases of extra-uterine pregnancy, and hæmatocele reckoned as extra-uterine pregnancy, but never had a reason to suppose there was rupture between the folds of the broad ligament. I know the Prices are very strongly of the opinion that the slow cases are those either where the rupture is small and of little vascularity, or where there are already adhesions in the abdominal cavity, as most of the cases of extra-uterine pregnancy occur in women who have had some pelvic disease, and there are already adhesions which retain the blood and give it a chance to coagulate; therefore, I should like to ask Dr. Cabot whether he knows by report of his friends or of his own experience of any case where there has been an extra-uterine pregnancy rupturing into the broad ligament.

Dr. Cabot: I never saw or heard of such a case.

Dr. Cushing: In regard to the operation, another point is making an incision and seeing blood before the peritoneum is cut through. It might be important in getting consent, to say we will cut down to the peritoneum and see whether there is blood; and, if so, we will open the peritoneum.

Dr. E. S. Boland: I rise to speak of extra-uterine pregnancy from the standpoint of the general practitioner; my one case not having been reported here.

I have had *one* case in *two* patients. The first was a woman, twenty-seven years old, the mother of three children, who having missed one or two periods with some irregularity as to time and amount, believed herself pregnant. She was attacked, after a hard day's work at house-cleaning, with tearing pain in the abdomen, prostration and extreme restlessness. Distress was extreme when I found her; pulse small and frequent; and a general appearance of severe suffering, referred to the lower abdomen. Vaginal examination negative. I gave a hypodermic of morphia; and from the history and condition made up my mind I had to deal with what I had been dreading to meet for fifteen years, namely, a ruptured inter-abdominal pregnancy. I got a specialist in council at the first opportunity, and he could see nothing but colic. Shortly afterward the woman vomited an *immense* amount of chocolate pie and ham; and my ectopic gestation vanished, leaving me very sore indeed.

A few months after, I was called to my next case early in the morning, and found the woman in apparent collapse. She was the mother of four children, the youngest still at the breast, being only ten months old. I learned that she had menstruated once or twice since the birth of the last child; but beyond this fact there was no reason to suspect pregnancy, so she had plenty of milk still. The day before, she had felt a sharp pain in the abdomen while breaking kindling-wood in the basement, and some hours later a similar pain while washing dishes as she stood at the sink; but these had passed off, and during the night she was comparatively comfortable. When I called at 7.30, A. M., she lay on the bed, with weak, fast pulse, gray face, cold extremities, shallow respiration, temperature 99°, and that general make-up of symptoms that Dr. Maurice Richardson calls *peritonism*, — very much like a typhoid-fever case with peritoneal invasion of fæces. I give her a subcutaneous injection of a quarter of a grain of morphine — more for its action on the heart than for relief of pain — as distress and sinking rather than pain was complained of, and applied heat externally. I told the family she was suffering from an internal hæmorrhage, and insisted on their getting their own family physician. He called soon after, and, agreeing with me as to the existence of an internal hæmorrhage, requested me to do what I could, as he was unable to care for the case. I hurriedly found the specialist who had set me right before, and brought him to her bedside. Mindful of my former (probably) ptomaine-tossed patient, I said nothing about tubal pregnancy; but he did and urged immediate operation. This was at 12 M.; at 1.30 P. M. we had her in St. Elizabeth's Hospital, where two hours later the consultant opened the abdomen and found the ruptured tube (left) and the aminotic sac still intact, about the size of an almond, with the fœtus, as big as a bumble-bee, clearly visible in the water-clear fluid. There was at least three pints of clotted blood in the peritoneum. The left tube was ligated and removed with the ovary, the peritoneum washed out with sterilized warm water slightly salted, and the wound closed without drainage. The patient made an uninterrupted recovery, and is able to do her work at home at present. I speak of these patients to show the difficulties of an exact diagnosis. In my first patient I had, as it seemed to me, great grounds for fearing this grave condition; but in the other case, until the advent of collapse, there was not sickness enough to, as the family thought, justify them in calling a physician.

Dr. Washburn: I should like to mention one thing, that in some cases the pregnancy occurs near the uterine end of the tube, and may become ultimately a true uterine pregnancy, if let alone. One case, which I operated on about a year and a half ago, was evidently trying to do this, but probably never would have succeeded, as the attachment was too far up in the tube. Just one end of the sac protruded into the uterine cavity, and the whole mass of the placenta was shaped like a large cigar, and extended way up into the tube; but there are cases where undoubtedly from the history of the case, pregnancies do change from a tubal into a uterine form, so that the treatment by palliative means is justifiable in those cases. The great trouble, as has been said, is to make an accurate diagnosis. All who have seen any number of cases agree as to the great difficulty of making a diagnosis. We have probably all of us seen cases which we were pretty sure were cases of extra-uterine pregnancy which have cleared up entirely under treatment after a little while, and have disappeared, and have proved the inaccuracy of our first belief; and the general practitioner is not ready to advise an operation which has to his mind a certain amount of risk, and is looked upon with a good deal of dread by the persons who are to be operated upon. So there is a certain amount of basis for those who believe in non-operative treatment to stand upon, although the great majority of evidence from those who have seen many cases, is that early operation certainly gives a very much larger percentage of recoveries than any other method of treatment. I have been very much interested in some of the statistics in Dr. Price's paper in the last *Obstetrical Journal*. He had collected about four hundred cases, and gave the different methods of treatment in different cases; and the percentage of recovery by operative treatment was vastily better than by any other method that was used.

DR. CABOT said, in regard to the difficulty of deciding between extra-uterine pregnancy and a fibroid, that in his third case the diagnosis of probable fibroid was made by a first-rate gynæcologist just before the very rapid enlargement began which made it evident that there was something more than that, showing that while there was still a little hard mass packed down against the side of the uterus, it was very difficult to distinguish it from a fibroid.

He said that he was sorry not to hear something about the electrical treatment, because he knew nothing about it himself, and wished to know what could be said in its favor. Certainly, in cases of tubal pregnancy he could not imagine that it would do any good, or that any one would wish to employ it; the operation of removing the tube after the diagnosis is made being perfectly simple and the mortality practically nothing. The cases in which he supposed the electrical treatment might properly be applied were those where the pregnancy was abdominal, not tubal, and where consequently there was more danger of hæmorrhage in the operation. He supposed that in some of those cases electricity was a proper method to use with the object of killing and bringing the growth of the fœtus to a stand-still while it was yet small. Practically there being but little danger of rupture in these cases, the time could be afforded to go to work slowly; and if the fœtus could be killed while still small, it would leave the woman in better condition than to let her go to term with a child of full size to afterwards mummify or putrify, as the case might result.

He mentioned one case which seemed to him an instance of a pregnancy starting in the tube and becoming uterine. The patient was sent to him by a first-rate observer, with the diagnosis of extra-uterine pregnancy. Between the time of the examination which led to that diagnosis and the time that Dr. Cabot saw the patient about a month elapsed. At this second examination there was no doubt felt but that the fœtus was in the uterus, although it lay somewhat at one side, as if in one horn of a bicornate uterus. The woman went to full term and was delivered successfully by the practitioner who had first seen her. He felt sure, — and no doubt correctly, — that the fœtus when he first examined her was just outside of the uterus, in the uterine end of the Fallopian tube.

In regard to the difficulty one sometimes met in deciding between a fibroid and another tumor, Dr. Cabot mentioned the last laparotomy but one which he had performed, in which the patient was sent to him with a diagnosis of fibroid, which he thought to be probably correct, as the enlargement seemed to be continuous with the uterus. Even after the abdomen was opened, he saw no reason to change this opinion until, after separating adhesions deeper in the pelvis, a cyst ruptured and discharged purulent contents. Even then he was not sure that it was not a case of fibroid with a sloughing or suppurating centre; but the after examination showed it to be merely a suppurating cyst.

DR. CUSHING: I have read cases where it has been reported, but I have looked on them with grave suspicion as to whether it was really extra-uterine pregnancy. It is very difficult to tell unless it is followed by some serious trouble such as sloughing, or bones coming away, or inflammation, or operation of some kind. Winckel for a long time advocated injecting morphine into the sac to kill the fœtus. I think it is discarded on all hands now, so that those cases are apt to get into the hands of men with a surgical tendency, and they proceed to perform an operation. I was under the impression that an abdominal pregnancy as distinct from tubal was one of the rarest things in the world. There are plenty of cases where the child when larger is found free in the abdomen, or with a slight shell made of adhesions. Sometimes it is entirely free. I think the truth is that those cases were in the beginning tubal, that the generation was in the tube, that the tube ruptured and the placenta afterwards became implanted outside. There was a case of lithopædion in Albany, where at the woman's death the sac was found entirely distinct, both tubes *in situ* and reasonably healthy. There was a case published in Philadelphia the other day where there was an abdominal pregnancy the placenta being inserted entirely free from the tube; but I am inclined to think that the tendency of belief is to suppose that in the early stages those cases were generated in the tube, that the tube ruptured, that the placenta escaped partly and became implanted and by the process of healing the placenta was cut off and the tube closed, or else it escaped by the abdominal end of the tube. It seems to me the finding of a lump as big as the fist, supposed to be an abdominal pregnancy, as distinct from tubal, is not enough to warrant the omission of surgical measures in favor of electrical treatment, on the supposition that it may be abdominal and therefore curable. I cannot see at any stage why Tait's method would not be better, — to open the abdomen and remove the fœtus, and if the placenta will not come away, to tie off the cord and await developments.

PATHOLOGICAL SPECIMENS.

DR. WASHBURN showed, for Dr. Haven, a specimen of multiple fibroid of the uterus removed by the latter a week ago. The patient was doing well.

DR. CUSHING: I have a specimen of myoma of a good deal of interest from a certain difficulty in distinguishing whether it might not be a pregnancy. This woman was within the child-bearing period, and last July began to notice a lump in the abdomen which grew quite rapidly. In July it was as large as the third month of pregnancy. Menstruation had not ceased. I passed a sound in, and it went apparently only the natural depth. I do not much believe in passing sounds to make a diagnosis, but I was deceived once from omitting to do so, so this time I passed a sound in. I opened the abdomen, and there was the uterus quite soft and very red, with large veins, freely movable in the abdomen, and looking very much like a pregnant uterus. I passed the finger around, and found a little knob of fibroid. There was no colostrum in the breasts, the menstruation had not ceased, so I concluded to remove it. I tied it off, as I have done in five cases, by tying the broad ligaments off on each side, dissecting down a flap above anteriorly and posteriorly, cutting a cone out of the cervix, dilating the cervix and draining it with iodoform gauze into the vagina and closing in the stump of the cervix with catgut. This is evidently a large, soft, solitary myoma, and recalls the question whether it would not be better in such a case to split the uterus behind as the soft myoma is almost always single, and shell the thing out, and match the uterus together and leave it. It always seems to me that leaving the uterus in that way with a big wound in it and a chance for effusion of blood and sepsis, is much more dangerous than to remove the whole thing.

I have here another specimen which is very interesting. It was supposed to have come from a miscarriage some two years ago, after which time there had been more or less inflammatory symptoms; finally an abscess formed, which ruptured into the intestine, and ever since there had been occasional discharge of matter into the intestine. The woman was running down. The whole pelvis was filled with a cake; and with a good deal of difficulty I got down behind it, and found first some foul pus and then some oily matter which made me think of dermoid. I failed on careful search to find any opening into the bowel, but knowing that one was present I put in Mickulick's drainage. I removed both tubes as they were inflamed and adherent. The tumor is a dermoid.

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NEW YORK ACADEMY OF MEDICINE.

An important special meeting of the New York Academy of Medicine was held on March 9th, in reference to

THE PRESERVATION OF THE PURITY OF THE CROTON WATER-SUPPLY.

The meeting was called to receive and consider reports from the Committee of Conference with the Board of Health and from the Section on Public Health.

Dr. T. M. Cheesman made the report for the Committee of Conference and it was largely devoted to the results of his personal investigations of the pollution of Tennette Brook, a stream which runs into the main branch of the Croton River and carries with it much sewage from the town of Brewster on its banks. The report concluded as follows: "To protect the waters used for domestic purposes throughout the whole State we need legislative enactment, and not only this, but, what is quite as important, and without which all legislation is futile, a thorough and conscientious administration of the laws. We know that our drinking-water is polluted, and we cannot but believe that the germs of Asiatic cholera may possible gain access to it before many months have passed. Why, then, longer hesitate in demanding that all sources of sewage pollution of our drinking-water shall be removed at once? . . . If we have a right to collect and store the water on the Croton water-shed, and conduct it to the city for our uses, we cannot justly be denied the right to protect and preserve its purity."

Dr. H. D. Chapin, in behalf of the Section on Public Health, presented a synopsis of the laws which have been enacted bearing on the protection of the Croton water-shed, and showed how, by the law of 1890, all the previous legislation had been nullified, and practically all protection been removed. In conclusion, he urged what is known as the Webster bill, which has just been passed by the Assembly at Albany. This act provides that power be given to the Commissioner of Public Works to acquire for the city property abutting on the Croton water-shed to the value of $350,000 annually.

Dr. E. G. Janeway thought the pending bill was altogether undesirable. The Commissioner of Public Works, he said, was not a sanitary engineer, and this law gave him jurisdiction over Westchester, Putnam and Dutchess Counties, where he had no jurisdiction. He believed that the protection of the Croton water-shed could be accomplished without the wholesale purchase of land, and, as this was a matter that concerned other counties than that of New York, that the matter should be intrusted, not to a city official, but to a competent commission appointed by the State.

Dr. T. Mitchell Prudden gave a written expression of opinion, which was in part as follows: "The bill before the legislature on this subject contains one provision to which I think we should strongly object, as citizens as well as physicians, namely, the conferring on one individual the power to take land. Such power should be in the hands of a commission of several men. It should be mandatory on this commission to acquire such land only as, in the opinion of sanitary experts and engineers, would be desirable or necessary in the carrying out of a consistent plan for the protection of the water. It would be very easy indeed for the taxpayers of this city, through the Commissioner of Public Works, to dispose of a half million of dollars annually in the purchase of real estate in the vicinity of the streams of Putnam, Westchester and Dutchess Counties without in any essential particular improving the condition of the Croton water-shed. What this city needs, then, is, in my opinion, first, a consistent plan, approved by sanitary experts, for the safe disposal of town and village sewage on the water-shed, and legal and financial power to carry such plans into effect; second, such legislation as shall forbid, under compelling penalties, individual pollution of the water, and an honest and efficient enforcement of that legislation; third, the power and means to acquire, under proper safeguards of individual rights, such real estates as may, in the minds of competent sanitary experts and engineers, be necessary to protect the water, after the sewage problem shall have been, so far as possible, solved by the more simple and effective measures which science has made known."

On motion, Dr. Prudden's statement was adopted as the sense of the meeting; and a committee of five was appointed to go to Albany and present these views to the legislature. The committee was composed as follows: Drs. E. G. Janeway, J. W. Roosevelt, A. Jacobi, W. H. Thomson, and R. H. Derby.

The Parisian university schools have been the scene of a demonstration by the students against the admission of women to the classes. The school authorities gave in to the demand by making special arrangements to separate the sexes. Such an agitation by Parisian students is unexpected as they are not oversentimental about the status of their female associates.

Recent Literature.

Practical Midwifery: A Handbook of Treatment. By Edward Reynolds, M.D., Physician to Out-Patients of the Boston Lying-in Hospital, Assistant in Obstetrics in Harvard University, Fellow of the American Gynæcological Society, etc. 12mo, cloth, pages 421, with 121 illustrations. New York: Wm. Wood & Co. 1892.

In view of the well-known fact that the systematic treatises on obstetrics, which must necessarily treat fully the science as well as the art of midwifery, and include in their contents chapters on pelvic anatomy and embryology, are unable to devote much space to the many technical details of obstetric practice, the author of this handbook set himself the task of preparing a volume which should "furnish to students and inexperienced practitioners a full description of those practical details of conduct which are necessary to the management of every case of gestation, labor, or the convalescence therefrom." In following this plan, the author has consumed no space by extended discussions of theories, or of the relative advantages and disadvantages of various methods: he has sought rather to give a clear description of at least one method of dealing with emergencies, and of one justifiable plan of treating the varying conditions of obstetric practice. In short, he has endeavored not to supplant, but to supplement, the systematic treatises commonly used in medical schools, and to impart to the student much that is usually learned, if at all, only from lectures and individual teaching.

The work is divided into six parts, treating respectively pregnancy, labor, obstetric surgery, abnormal labor, the pathology of labor, and the puerperium. Part I is in our judgment the least valuable, owing to the fact that the personal experience of no one man is so extensive in the complications of pregnancy as in the management of labor and the puerperium. To speak authoratively on the manifold complications and intercurrent affections of pregnancy one must have had a profound and extensive experience. The subject is very well treated, however, by the author, and there is not much that calls for adverse criticism. The author places the date of quickening at about the end of twenty-two weeks: this date is commonly placed at the eighteenth week, and in our experience it falls below the eighteenth week oftener than it goes beyond the twentieth. Salivation is said to occur "rather less constantly" than nausea and vomiting: we had supposed this to be a very rare affection, having observed it but twice in fifteen years. In speaking of hydatidiform mole, the author says that "instances have been reported, in which, in twin pregnancy, one amniotic sac was completely filled with the mole." As the so-called hydatidiform mole is a cystic degeneration of the chorion, we fail to see how the amnion can be filled with the degenerated mass. In the treatment of hydramnion, the author lends the weight of his authority to aspiration of the uterus through the abdominal wall: we question the wisdom of this procedure.

The author's treatment of Part II is admirable and will prove of the utmost value to the student. The obstetric nomenclature is that adopted by the Washington International Medical Congress. Abdominal inspection, palpation, and auscultation as measures of diagnosis are worthily treated, and the aseptic management of labor receives the attention it deserves. The chapters on normal labor and delayed labor are strongly written; but we do not agree with the author that the membranes should be ruptured in the interval between pains, nor do we see why milk should be prohibited the patient during the labor in view of the possible necessity for etherization.

The part on obstetric surgery is perhaps the strongest section of the book: it is written *con amore.* The preparations for operation are clearly and fully described to the utmost detail. We have never seen the subject better treated outside the lecture-room. The chapters on forceps and version are admirable in the thoroughness and soundness of all their teachings. The chapter on the destructive operations is also excellent; but we do not agree that after craniotomy the external blade of the cranioclast should be placed over the face. In most cases application over the occiput results in a successful extraction, and the features of the child are not disfigured, — a matter of some importance, as many parents wish to see the face of their child, even though still-born.

The section on abnormal labor begins with a chapter on labor in posterior positions of the occiput. We confess to a certain disappointment in the treatment of this subject: while much is commendable, especially the operative treatment, the author's meaning is not always clear. The treatment of brow and face presentations is good, and the teaching of the management of breech cases, including the manual extraction, is beyond criticism.

In the section on the pathology of labor, the chapter on contracted pelves, while not equal to Schoeder's classical treatment of the subject, is clearly written, and adequate to the general scope of the book: pelvimetry receives careful attention. The chapters on eclampsia, placenta prævia, concealed accidental hæmorrhage, and post-partum hæmorrhage are extremely well done; and the treatment of these serious complications, an ill their phases, is clearly presented with marked attention to details. The operative treatment of the varying degrees of perineal lacerations is excellent, although we do not agree that "in all primary operations . . . an extreme amount of swelling is certain to appear within the first forty-eight hours." We think the author is in error in his statement, in the chapter on multiple pregnancies, that in twins from a double-yolked ovum the two children are contained within a single amniotic sac: the weight of authority shows that while the placenta and chorion are single, each child has its separate amnion, although the septum between the two sacs sometimes partially atrophies. The author has treated the subject of asphyxia neonatorum with commendable care, and it may be said that throughout the book great stress is laid on the value of fœtal life.

Part VI opens with an excellent chapter on normal convalescence. The care of the new-born child and of premature infants receives careful and comprehensive treatment. The chapter on pelvic complications and intercurrent diseases of the convalescence is well done; but we do not agree with the author as to the wisdom of using pessaries as early as the end of the second week for the relief of uterine malpositions. It seems to us preferable to await the natural recovery which is generally observed to ensue as the patient gains strength and the uterine ligaments recover their tone, and to reserve active interference with pessaries for the comparatively few cases in which spontaneous reposition of a displaced uterus does not occur. At the end of two months it would seem sufficiently early to correct any existing malposition. The diseases of the breasts and nipples are very fully and successfully dealt with. The chapter on septicæmia is clearly and forcibly written, and its teachings are in accord with the most approved modern practice. We cannot agree that phlegmasia alba dolens, due to extension of a thrombus from the pelvic veins into the thigh, is *always* the result of sepsis, while admitting that such is generally the case. We are persuaded that cases of phlegmasia do occur by extension of thrombi in pelvic veins, which thrombi are the result of pressure and bruising in difficult instrumental labors; and that such thrombosis and extension are especially likely to occur in anæmic and debilitated women, and when not initiated by septic absorption. The book closes with a satisfactory index prepared by Dr. F. H. Brown.

Of the book as a whole we can speak in terms of high commendation. The general plan and arrangement are excellent, and we are confident that it will prove to be what its author intended, a book for students *par excellence.* The numerous illustrations, while not invariably artistic, are such as clearly to express the meaning of the text. The book reads well, the style is almost always clear, and the English is faultless. We congratulate the author on his work, which reflects great credit on himself, on his hospital, and on his school.

C. M. G.

A Handbook of the Diseases of the Eye, and their Treatment. By Henry B. Swanzy, A.M., M.B., F.R.C.S.I., Surgeon to the National Eye and Ear Infirmary, Dublin, etc. Fourth edition, with illustrations; 12mo, 518 pp. Philadelphia: P. Blakiston, Son & Co.

This book, although intended mainly for students, is an excellent work for the busy practitioner. Its descriptions are clear and full, yet not too voluminous to make it a satisfactory handbook for ready reference. The chapter upon granular lids and their treatment is fully up to the times. Expression of the contents of the follicles early in the disease is recommended; and the advantages and limitations in the use of jequirity at a later stage of the disease are clearly put, and its use judicously advocated. Indeed, the treatment is especially good in all the conjunctival diseases.

It seems rather strange to us in America to see the statement that errors in refraction do not produce blepharitis; nevertheless, our author holds that opinion in common with other English ophthalmologists.

Considerable space is given to a well-considered *résumé* of the present knowledge of the pupil — conditions in health and disease. Two good colored figures are given which illustrate very well the several theories of the supply of the macula region as distinguished from the rest of the field of vision, showing the effect of a lesion in the cortical centre, the optic tract, the chiasma or the fasiculus lateralis in each eye. Dr. Swanzy has not brought himself to the advocacy of the simple extraction without iridectomy, and regards the danger of prolapse of the iris as a fatal objection to that operation.

Altogether it expresses the conclusions of a man who, while quite up to the times, is, nevertheless, not an enthusiast in regard to any method of treatment simply because it is new. The book justifies its fourth edition.

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283 Washington Street, Boston, Mass.

THE SELF-PURIFICATION OF RIVERS.

Vigorous discussion has been going on for the past two or three years in Europe as to the so-called self-purification of streams, the principal rivers under observation being the Isar at Munich, the Elbe at Dresden, the Spree and the Oder.

At the meeting of the German Public Health Society at Leipsic in September, 1891,[1] the subject of a thorough investigation of the rivers of Germany, on the part of the State authorities, was discussed, with a view to fix definite standards for the degree of pollution which might be permitted in each.

Professor Frankland, at the Congress of Hygiene in London in August, had maintained that the disappearance of microbes in running water was due to deposition only, while Professor Pettenkofer had stated that he believed that the self-purification of rivers was, for the most part, due to the vegetable life in the water, just as the surface of a manured field was purified by vegetation. Professor Pettenkofer remarked that Prausnitz had examined the subject from a bacteriological point of view, and, while he found that immediately below the exit of the principal sewer of Munich, the number of bacteria in the water was considerably increased, before the river had reached Freising the germs present were reduced by eighty per cent. It might be said that notwithstanding the great diminution in the ordinary species of water bacteria, it was possible that pathogenic germs might pass into the river, and cause mischief to inhabitants lower down the stream. Dr. Niedner showed that, in the case of Dresden, after a flow of only one mile below the town, the germs in the Elbe were decreased by one-half.

Professor Buchner claims, in a lecture before the Munich Medical Union, in 1892,[2] that typhoid and cholera bacilli, freely distributed in water, were destroyed by direct sunlight in from one to two hours; and by diffused daylight, in from four to five hours. The disinfecting activity of light was so powerful, that, for instance, water which contained in a cubic centimetre 100,000 germs of *bacillus coli communis* was found after one hour's action of direct sunlight to be completely germ free. He therefore believes that town sewage could be disinfected by direct light in white enamelled settling tanks.

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[1] Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege, 1892, p. 1[illegible].

[2] Centralblatt für Bakteriologie.

With the foregoing conflicting statements, whatever may be said relative to the pollution of ordinary streams not used as sources of water-supply, no such principle should be accepted for a moment as applied to rivers used for water-supply purposes, especially in the light of recent investigations upon the Merrimack River. Professor Frankland said at London, in August, 1891, that while the self-purification of rivers has frequently been supposed to justify the use for domestic purposes of river water which has received sewage contamination, he was inclined to take the safer ground that the evidence of purification is wholly inadequate to justify such a course.

While the investigations of the State Board of Health of Massachusetts relative to the prevalence of typhoid fever at Lowell and Lawrence are still fresh in mind, it is worth while to emphasize the published opinions of the Board expressed in 1890–91, that the continued outbreaks in those cities were due to the admission of typhoid fever excreta into the river from towns higher up the stream where it was known to have existed. The results of investigations were made public, as a warning not only to those communities but also to others similarly situated.

Notwithstanding this, it is now but a few days since another investigation became necessary still lower down the river, at Newburyport. For the past ten years or since the introduction of a public water-supply, this city has been comparatively exempt from typhoid fever (its death-rate from this cause being but little more than two per 10,000 annually). A few weeks since, in consequence of a scarcity of water, the Water Company began pumping a portion of its water from the river, and distributing it to the inhabitants, after having been warned in November against the danger of such a course by the State Board of Health. In January, 1893, the cases of typhoid fever, following closely after a similar prevalence in Lowell, suddenly rose from an average of less than one per month, to thirty-four in January, with four deaths.

Newburyport is seventeen miles below Lawrence and twenty-six below Lowell. The argument for the self-purification of rivers does not gain credence from these experiences upon the Merrimack.

THE INCREASE OF CANCER.

In a paper read before the Manchester Medical Society,[1] Mr. W. Roger Williams, F.R.C.S., Eng., dwells upon "The Prevalence of Cancer, and its Increase," contributing some new and striking figures to the subject.

Prior to 1837, when the Registration Act came into operation, there was no reliable information as to the prevalence of cancer in Great Britian. Mr. Williams has compiled a table showing annually for England and Wales, the total deaths, the deaths from cancer, the death-rate from cancer per million living, the proportion of deaths from cancer to population, and the proportion to total deaths — this for each year from 1838 to 1890 inclusive. There has been a very large and steady increase in the proportionate mortality from cancer, according to this table, during the last fifty years in England and Wales. This proportionate mortality is now more than four times what it was then. In 1838, it caused 2,448 deaths, the proportion being 1 in 6,244 of the total population, 1 in 140 of the total mortality, or 160 per million living; in 1890, the deaths due to cancer numbered 19,433, being 1 in 1,480 of the total population, 1 in 28 of the total mortality, or 676 per million living.

Among women of thirty-five years of age and upwards, deaths from cancer have increased from 1 in 91 for the decennial period, 1851–60, to 1 in 12 for the period 1887–89. But the increasing mortality from cancer has affected males to a much greater extent than females. Thus, from 1851 to 1890, the increase for males was 167 per cent.; whereas for females it only amounted to 91 per cent. For both sexes the percentage of deaths from cancer above the age of fifty-five years is greater than it used to be, and a far larger proportion of the male deaths than of the female deaths occur after sixty-five years of age.

This undue incidence of the increasing mortality in males is ascribed to the sociological fact that, as a result of urbanization the conditions of men's lives have come to resemble more closely those of women than formerly. Excess of food, want of proper exercise, and changed surroundings are suggested as the chief causative agents. On the other hand, as the death-rate from cancer has increased, the death-rate from tubercular disease has diminished — and this, too, as the outcome of improved hygienic conditions and augmented prosperity. Mr. Williams suspects that a large proportion of those saved from tubercle, eventually die from cancer and insanity.

Figures are cited to show that in Norway, the Netherlands, in Prussia, in Australia and New Zealand, the mortality from cancer has been steadily increasing, whilst in Ireland, where the usual marked improvement in general well-being has not obtained, but rather the reverse, the mortality from cancer has at times been stationary, or shown a very slight increase only. Whatever the cause, the results of a comparison of the increasing mortality-rates for cancer and the decreasing rates for the infectious and the tubercular diseases, as shown by the registration reports for England and Wales, are very curious and suggestive.

Increased accuracy of diagnosis and care in making returns may account for a small difference, but not for the great increase in cancer shown in the above figures; and, on the other hand, they scarcely explain the decrease in other diseases.

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[1] Medical Chronicle, February, 1893.

USEFUL MICROBES.

It is well in this age of microbiphobia, when the fear of infection prompts to the complete sterilization of everything eaten and drank, and even the air that is breathed, to have the attention directed to the beneficent rather than the lurid side of the question.

Prof. Albert R. Leeds, in the March number of the *American Journal of Medical Sciences*, has done good service in emphasizing the uses of microbes in the economy of Nature. The complete removal of bacteria from our drinking-water by filters or any other process of sterilization would, he says, in one sense be a misfortune. Bacteria are Nature's physicians, constantly busying themselves in seeing that the decomposing and worn-out particles which would otherwise clog the machinery of Nature are gotten out of the way and resolved into their simple and harmless elements. They are universally present: in the air, in the waters under the earth. They dwell with the trout in the waters of the purest mountain torrent, and are found at the bottom of the coldest well. Frequently, in a sample of milk when fresh, he has found hundreds to the teaspoonful, while in the course of a few hours, their number has increased to millions. With their aid it is possible to make good cheese, and each one of its peculiar and delicious flavors from the *pianissimo* of Cottage Cheese and Brie through the *crescendo* of Stilton, Gorgonzola, and Roquefort, and up to the *fortissimo* of the indescribable Limburger Käse, is due to its peculiar flavor-developing bacteria. The choicest gilt-edged Darlington butter owes its aroma and dainty taste to cream ripened by bacteria under suitable dainty conditions.

The human mouth, stomach, and intestines contain bacteria in immense numbers and variety. There is in saliva an average of more than ten thousand colonies per cubic centimetre. If we assume that a litre of saliva is secreted daily, we shall have the enormous aggregate of over ten million bacteria. Some of the bacteria of the alimentary canal have a peptonizing action, converting the proteids of the food into peptones, others are diastatic, splitting cane sugar into dextrose and lævulose. Some have a reducing action, breaking down all albumin into products of fermentation and putrefactive decay, with the evolution of hydrosulphuric acid and ammonia. They are more especially active and abundant in disordered conditions of digestion. The reducing action of other varieties is exerted upon the fermentable sugars of the food, decomposing them into lactic and carbonic acids. Considering then the peptonizing, soluble-making, reducing actions of these alimentary bacteria, is it not eminently probable that they are intimately concerned in, if not essential to, the processes of digestion?

Unfortunately, among the countless multitudes and species of bacteria which are gardeners *par excellence* in the garden of Nature, working ever towards making it sweet and pure for man's in-dwelling, there are some which are too vigorous and hasty in their action for our immediate safety and comfort. These are the pathogenic, the toxic, the morbific genera, which tend to sweep away or extirpate any poorly nurtured, non-resistant, or diseased organism that comes in their way. Yet they are as abnormal, so to speak, as is disease itself. A thousand samples of milk taken at random will probably not show a single pathogenic bacterium. A thousand springs, wells, and water-courses might readily be found in our vicinity of which the same may be said. But inasmuch as the bacillus of typhoid fever and tuberculosis has been found in diseased cows' milk the unfortunate recommendation was made to physicians some years since to sterilize all milk by long-continued boiling. Pasteurized milk, which leaves the constituents of the milk in their natural condition, has taken the place of this tortured, over-cooked milk, in which scarcely a single element is left in its proper and digestible state. While the Pasteurizing of milk, or its heating for ten to thirty minutes at a temperature of 160° F., does not certainly destroy every germ, it reduces the probability of their presence to a minimum.

So with regard to water, by long-continued boiling, it can be rendered absolutely germ-free. The same result can be obtained by filtration provided the filtering medium is fine-grained enough, and the rate of filtration is sufficiently slow. But with the materials and the methods essential to an economical supply of the immense quantities of water required by our great cities, no process of filtration ever has made or in the nature of things can make the filtered water absolutely germ-free and sterile, and even if it could, sterilized water is an artificial commodity of very questionable value. Experience has shown that such water unless kept in reservoirs as far as possible out of contact with light, heat, and air, spoils very rapidly. As soon as the spores, ever floating in the atmosphere, fall into it they develop in the presence of sunlight with great rapidity, and the water so fertilized becomes filled with microscopic organisms, algæ and fungi. These in their decay and by the production of foul odors and tastes render the water unfit for domestic uses.

The reduction of the bacteria, as far as can be practically accomplished by filtration, and not to the point of absolute sterility, is all that is necessary or desirable in an engineering plant designed to supply the water for the multifarious uses of a great city. This is, indeed, the system which has proved eminently satisfactory during the last thirty years for the supply of the five and a half million of inhabitants of London. No epidemic of cholera such as rapidly devastated London prior to the installation of its filter system (comprising 100 acres of filters delivering 160,000,000 gallons daily of filtered water) has occurred since the seven London water companies were compelled in 1852 by Act of Parliament to filter their water. In the fifty years prior to the passage of this Act, Professor Leeds says there had been four great epidemics, all of which had been traced by such overwhelming evidence to the drinking of unfiltered water that the compulsory installation of the filters ensued. To-day the death-rate of London is lower than that of most cities, and the percentage of typhoid fever is correspondingly low.

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MEDICAL NOTES.

Miss Garrett and Johns Hopkins University. — The following instructive item is taken from a daily paper: "A committee of the trustees of Johns Hopkins University has been appointed to confer with Miss Mary Garrett, who recently gave $354,764 to complete the $500,000 endowment for the medical department of the university. Miss Garrett is not satisfied with the curriculum prepared by the medical faculty. In the conditions accompanying the gift to the university, she outlined the curriculum so far as it pertained to the studies upon which students should be examined for admission, and she will not submit to any changes."

New Periodicals. — The New York Eye and Ear Infirmary has begun the publication of a series of reports to appear at intervals as material is collected. The *Woman's Medical Journal*, a monthly journal devoted to the interests of women physicians appears in Toledo, Ohio, dated January. The *Pacific Medical Record*, published at Portland, Ore., monthly, under the editorship of Henry W. Coe, M.D., also begins with the year. The *Revue Neurologique* published twice a month in Paris by G. Masson; *Clinica Chirurgica*, a monthly periodical under the direction of Professors Bottini and Tausini in Milan; and the *Boletin del Consejo Superior de Salubridad*, from Guadalajara, have been received.

Quarantine in Canada. — The fear of cholera during the past summer has aroused attention in Canada to its quarantine stations. Under the constitution the subject of quarantine was assigned to the Federal Government of Canada and is under the direction of the Governor in Council. There are nine maritime quarantines, the most important being at Grosse Isle, which guards the St. Lawrence from April 15th to December 1st. This station, with the one at Halifax and the one at Victoria on the Pacific, is now being fitted up with new apparatus and accommodations from a recent appropriation of over $200,000. A national sanitary conference met in January, and submitted a report urging several reforms in quarantine matters. The quarantine at Grosse Isle is about twenty miles below Quebec in the St. Lawrence River. The work at this station would be aided by a government vessel and all suspicious vessels thoroughly overhauled.

Compulsory Notification in England. — The compulsory notification of infectious diseases may be said to be in its experimental stage in England, and consequently, attracts a good deal of attention in the English medical journals. There appears to be some opposition to it in the community, due partly to conservatism and partly to the faulty wording of the law. Instead of requiring any one who takes charge of a case of infectious disease to report it, the law applies only to qualified practitioners of medicine. The result is that in many cases no regular physician is called, in order to avoid the necessity of notification, but instead the case is treated by some one to whom the law does not apply. The doctor is liable to arrest if he fails to notify, but a quack or an apothecary is under no such obligation.

NEW YORK.

Typhus Fever. — The official records show that from November 30th up to March 4th there were reported 318 cases of typhus fever, with 115 deaths, a mortality of 36.2 per cent. On March 11th there were about thirty patients ill with the fever at the hospital for contagious diseases on North Brother Island.

The United Charities Building. — This building at Fourth Avenue and 22d Street, the munificent gift of Mr. John S. Kennedy, was opened on March 6th with appropriate addresses. It is seven stories in height, and cost, with the site, nearly $700,000. In the basement are the baths of the Children's Aid Society, and the four lower floors are occupied by the Children's Aid Society, the Charity Organization Society, the Association for Improving the Condition of the Poor, and the New York City Mission and Tract Society; while the other stories are to be rented out at low prices to other charitable organizations.

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Miscellany.

PROTECTION AGAINST FIRE IN THE MEDFIELD ASYLUM.

In order to contradict mistakes which have appeared in different papers concerning the new asylum for the chronic insane which is to be built by the State of Massachusetts, the commissioners have published certain details:

The State owns four hundred acres of land in Medfield, bordering on the Charles River.

The buildings are twenty-five in number, eighteen of which are to be occupied by the chronic insane, the remainder to be used for the administrative building, a laundry, kitchen, etc. The buildings are to be from seventy-five to one hundred and fifty feet apart, built of brick, only two stories high, and are to contain on an average less than sixty patients each. When completed, they will have the appearance of ordinary brick dwelling-houses. Special pains have been taken in planning, not only to make them additionally secure from taking fire, but also to prevent a fire from spreading. In constructing the interior, every partition, floor, ceiling and stairway will be fire-stopped. In addition, between the first and second stories the whole floor is to be covered with fire-proof material, all partitions will be plastered on wire lathing, and all channels and pockets for pipes will be made smoke-tight. There will be no fire in any of the buildings which are occupied by the insane, they will be heated by steam, which will come from a boiler-house.

Every building will, in addition to the stairways, have a suitable fire-escape placed on the outside, access to which will be by means of a door, which may be opened either from the outside or from the inside. In case a fire should occur in any of the buildings, a large force pump, will connect directly with the hydrant system. There is to be a water-tower 110 feet high, which by gravity pressure will throw streams high over the roof of any building. There will be ten full-size hydrants with two outlets each, supplied from an eight-inch main, through six-inch connections, and located at suitable intervals, and within reasonable distances of all the buildings, and from six to ten good streams of water may be brought to bear upon any of the buildings, through comparatively short lines of hose.

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CARE OF THE PAUPER INSANE IN NEW HAMPSHIRE.

The State Board of Health of New Hampshire has issued a preliminary report of their investigation of the burning of the Strafford County Asylum for the Insane, an investigation conducted at the instance of the Legislature. The general conclusions and recommendations which the report formulates in regard to the care of the pauper insane, is worthy of attention, and should be brought to the notice of the proper authorities in some other States besides New Hampshire. The report states that:

> The system of caring for the county insane is the same in all counties, differing only in some minor details. It was not originated through carefully matured plans after due consideration of the requirements of the insane, but it was the outgrowth of a forced necessity, the guiding principle of which has been to house, clothe and feed this unfortunate class at the smallest possible expense to the county. To this end, few provisions have been made for anything beyond the brute necessity of life. The principle that the insane should always be regarded as sick persons who require expert medical treatment and special care with reference to surrounding influences has not been taken into consideration in caring for our insane poor. Insanity is now recognized by the highest medical authorities as a disease, possessing an infinite variety of symptoms and manifestations, and requiring the most scientific, competent, considerate, and careful treatment and management. This more humane and logical method of treating the insane has been so frequently demonstrated to be the best and most successful, even among the so-called chronic class, that the most sceptical have only to search the records to be convinced. It is through failure of legislative bodies to recognize the fundamental fact that insane persons are sick persons, that no better treatment has heretofore been provided.
>
> The system under which the county insane are now cared for is lamentably defective, inasmuch as the only authority legally qualified to make these institutions what they ought to be has little or no knowledge of the requirements necessary to the most modern and humane methods of providing for this class. The county delegation, upon which rests the power to appropriate money for these institutions and to fully equip them in accordance with modern methods of managing the insane, too often, in fact generally, fail to study and to understand the needs of our asylums.
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> Among the defects which may be mentioned under the present county system are:
>
> *First.* Lack of suitable buildings. In several of the counties of the State this statement admits of no qualification, the buildings used being unfit *in toto.* In other counties this criticism may not be so forceful so far as the buildings themselves are concerned, but when the matter of classification is taken into account, proper and ample facilities are not to be found at any of the county institutions.
>
> *Second.* No classification of patients. This is a radical defect in every county of the State. The custom of grouping together in one ward all the different classes of the insane, from the simplest case of delusional insanity to the most violent case of acute or chronic mania, is in itself a sufficient condemnation of the method.
>
> *Third.* Lack of skilled attendants. For the proper care of the insane attendants more or less skilled in the care of, and possessing a knowledge of the characteristics of this class of patients are essential. Moreover, insane persons should at all times be under the watchful supervision of some attendant, a requirement not fulfilled at our county almshouses.
>
> *Fourth.* Lack of expert medical and surgical treatment, which cannot be readily obtained at our county institutions.
>
> *Fifth.* Lack of occupation and entertainment for the patients — features highly essential in the treatment of the insane.
>
> In this same category many other defective conditions pertaining to our county asylums might be mentioned.
>
> The report recommends:
>
> *First.* That the State assume entire support, control, and management of the insane, and that county asylums for the insane be abolished.
>
> *Second.* That all buildings hereafter constructed to be occupied as almshouses, asylums for the insane, jails, and orphans' homes shall be built of brick, iron, or stone, with partitions of fire-proof or slow-burning material, the plans and specifications to be first approved by the State Board of Health, or such other authority as the legislature may direct.
>
> *Third.* That the State Board of Health (or some other State authority) shall make at least annual inspections of such institutions, and shall have mandatory powers in all matters relating to the protection against fire, drainage and sewerage, ventilation of buildings, and other matters pertaining to the health and safety of the inmates, and all orders upon these matters shall be executed or carried into effect by the county commissioners or other legal authorities in charge.
>
> *Fourth.* That we believe it to be for the best interest of all county institutions that the law should be so amended that one county commissioner be elected bi-ennially, so that all members of the board shall not go out office simultaneously, as often does occur under the present law.
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> We believe the foregoing recommendations to be for the best interests of the State. and we are prepared to support them, and to give our reasons therefor, before any legislative committee.

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THE SPRAYING OF FRUIT-TREES.

American fruit has been maligned in England during the past two or three years because it was known that the trees were sprayed with different poisonous substances to prevent destruction by insects. In this country also at one time last year suspicion was cast upon grapes for the same reason. Prof. C. M. Weed, in the last number of the *Popular Science Monthly*, describes the spraying of different plants and the immense gain to farmers which has resulted from this method of killing insects and fungi. Many million dollars' worth of different corps are destroyed in this country annually by these parasites. On fruit-trees, especially apples, Paris green or some other poison is sprayed, just after the blossom's petals have fallen off, but it has been proved, experimentally, that before the apples have become ripe, all traces of the poison have been washed away and have entirely disappeared. The brown rot of grapes is prevented by spraying with a combination of copper sulphate, ammonia and water, but here also practically no copper salts remain upon the grapes when they reach market. Not only is the quantity of poison very small which reaches any one or even several bunches of fruit, but between the time of spraying and time of harvesting, the little that there is, is washed away by the rain.

A law has been passed in Ontario forbidding the spraying or sprinkling of fruit-trees while they are in bloom with Paris green or other substances poisonous or injurious to bees. The object of this law is entirely for the protection of the bees, and does not apply to trees after the blooming period is passed.

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THE LIABILITY OF A CORPORATION TO PAY A PHYSICIAN.

THE question of the legal liability of a corporation to compensate a physician called in by it to attend an injured employee is discussed by L. D. Bulette in the *International Medical Magazine.* If a person requests a physician to attend a patient there is no implied promise to pay, unless the relation of that person to the patient is such as raises a legal obligation on his part to call in a physician, consequently the physician summoned to treat an employee of a corporation cannot, on that account, demand payment from the company unless the person summoning has been authorized to do so. In a case cited in Missouri, the judge, in delivering the opinion of the Court of Appeals, says among other things that no implication arises where one calls in a physician to attend upon a stranger or upon one for whom there is no legal obligation to furnish necessities. It has even been held that a special request of a father to a physician to attend his son in his house implied no obligation to pay, if the son was over twenty-one years of age. Even if a corporation agrees to pay the physician who is called, it does not necessarily bind itself to pay for subsequent visits. It is the duty of a physician to learn the true legal status of the patient; he cannot rely upon any seeming legal and necessary dependence of his patient upon the person calling him in.

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THERAPEUTIC NOTES.

THE USE OF FLAME IN SURGICAL WOUNDS.[1] — M. Félizet brought this subject under the notice of the Société de Chirurgie in October, 1892, alluding more especially to the difficulty experienced oftentimes in thoroughly eradicting tuberculous tissues in operations. The method of applying extreme heat which he adopted was the *rapid* passing over the tissues of a blow-pipe flame. Micro-organisms are thus destroyed, and healing hastened; the tissues become dehydrated completely but never cauterized, unless the action of the flame upon them be prolonged beyond what is proper. During this proceeding the lips of the wound are to be protected by moistened compresses. There is commonly no reaction, no pain nor loss of blood; union may be expected by first intention; if suppuration occur it should be taken as indicating that the "flaming" has been incompletely carried out. —

A METHOD OF STERILIZING HARD AND SOFT RUBBER INSTRUMENTS.[2] — Lannelongue recommends for the sterilizing of hard and soft rubber instruments subjecting them to the fumes of quicksilver. The instruments are rolled in flannel impregnated with mercury and placed in closed vessels. By a simple test you can demonstrate that the space becomes filled with the fumes of the quicksilver. The bacteriological examinations show that after a very short time the instruments are thoroughly aseptic. As a lubricant the author is in the habit of using olive oil; a few globules of the quicksilver are kept on the bottom to keep the oil sterile. Since these measures have been adopted the author has had the best results.

TREATMENT OF OBESITY. — According to the *Therapeutic Gazette* Dujardin-Beaumetz recommends the following system of treatment for obesity, first establishing the fact that the heart and circulation are in good condition. Every morning a sponge bath with warm water and cologne, followed by a brisk dry rubbing and massage. Every morning a glass of Rubinat, Carahana, or Villacabras water. At the end of each meal a desertspoonful of the following solution:

℞ Iodide of potassium, 15 grammes;
Distilled water, 250 grammes.

Follow rigorously this diet: *First meal,* a slight breakfast at eight o'clock; a cup of chocolate and 20 grammes of bread. *Second meal,* lunch at noon; 2 eggs or 100 grammes of meat, 100 grammes of green vegetables, salad, 15 grammes of cheese, any amount of fruit, 50 grammes of bread, and a glass and a half of liquid (light white wine mixed with Vichy water). *Third meal,* dinner at seven o'clock; no soup, 100 grammes of meat, 100 grammes of green vegetables, salad, 15 grammes of cheese, any amount of fruit, 50 grammes of bread, a glass and a half of liquid (white wine with Vichy water); abstinence from all drink between the meals; suppression of coffee, tea, brandy, and other liquors; exercise out-doors.

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OBITUARY. — WILLIAM D. HODGES, M.D.

DR. WILLIAM D. HODGES, whose death last week is mourned by an unusually large circle of friends, was born in Boston in 1854. He was the son of Dr. R. M. Hodges. Dr. Hodges graduated from Harvard College in the class of 1877, and entered the Medical School. At the end of his course he became surgical house-officer in the Massachusetts General Hospital; a service which he thoroughly enjoyed. In 1881 he took his degree and went to Europe, spending much of his time in Vienna in medical study. On his return to Boston he began medical practice, at first in Boston only, later during the summer months he practised in Nahant, and became a citizen of that town. He had for many years before graduating lived in Nahant in summer, and took a deep interest in local affairs. He was elected representative from the district in which Nahant is included and served in the legislature of 1891; and in other positions also had done good and painstaking public work. In Boston he served as physician to the Boston Dispensary for two years, and subsequently as surgeon for diseases of the rectum, and also as physician to the Baldwin Street Home. He was a member of the American Climatological Society, the Boston Society for Medical Improvement and the Boston Society for Medical Observation.

Dr. Hodges was much interested in meteorology; he kept a careful record of the weather at Nahant, and did much good original work in this branch of science, and was a member of different meteorological and natural history societies.

For the past year or two his health has been poor, so that it became necessary for him a few months ago to give up his active medical work. Early in the winter he made a voyage to the West Indies, and latterly had gone for rest with his wife and child to a hotel in Lexington.

Dr. Hodges was a man who endeared himself to those with whom he came in contact. His kindness of heart and cheerfulness not only won for him friends on all sides, but also prompted him to do a large amount of work without thought or hope of recompense. He was always ready to entertain or to help any one, friend or patient, who called upon him, and his loss leaves a blank in many hearts.

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[1] [illegible] March.

[2] University Medical Magazine.

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Correspondence.

WILLIAM D. HODGES, M.D.

Boston, March 12, 1893.

Mr. Editor: — As soon as may be after the shock of the sad death of Dr. William D. Hodges, I am anxious to offer my tribute to the memory of a departed colleague, the more so that few are so well able as I to testify to the strain under which he broke down. For the last five or six years he has shared in the summer practice at Nahant. It is a satisfaction to me to recall how uniformly pleasant were our relations, and to remember the many acts of professional courtesy and kindness for which I remain his debtor. His life during the summer was a very exhausting one. He was at the call of all his townsmen. He took an interest in all town affairs, especially in those relating to sanitary matters. As town physician he was prompt and efficient. He was kind to the poor and needy. Much strength and time were spent on distant and unremunerative visits by night as well as by day. He found time also to record meteorological observations and to serve as secretary of the Nahant Club. It was his object not only to be a physician but a useful and leading citizen. He was successful in this worthy ambition; but the work, wear and worry were too much. They brought on depression and insomnia. He leaves a record of good work well done.

Thomas Dwight.

RECORD OF MORTALITY

For the Week ending Saturday, March 4, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	862	311	[illegible]	[illegible]	2.64	[illegible]	[illegible]
Chicago	[illegible]	—	—	—	—			
Philadelphia	1,092,168	[illegible]	147	12.54	15.62	.44	6.38	[illegible]
Brooklyn	955,333	371	125	11.07	21.60	[illegible]	4.59	[illegible]
St. Louis	[illegible]	—	—	—	—	—	—	
Boston	[illegible]	[illegible]	77	9.89	19.35	[illegible]	[illegible]	1.72
Baltimore	461,139	—	—	—	—			—
Cincinnati	305,000	131	52	6.84	18.24	[illegible]	3.04	—
Cleveland	281,353	111	47	12.60	14.40	[illegible]	[illegible]	—
Pittsburg	[illegible]	85	34	11.76	15.34		[illegible]	
Milwaukee	[illegible]	[illegible]	[illegible]	12.32	16.94	[illegible]	[illegible]	3.08
Washington	230,360	[illegible]	44	6.64	30.71	.83	[illegible]	—
Nashville	[illegible]	—	—	—	—	—	—	—
Charleston	56,048	27	[illegible]	—	[illegible]	—	—	—
Portland	40,000	14	4	7.14	28.56	—	7.14	—
Worcester	92,313	15	[illegible]	[illegible]	[illegible]	—	—	—
Lowell	[illegible]	[illegible]	21	[illegible]	[illegible]	[illegible]	[illegible]	—
Fall River	[illegible]	26	11	[illegible]	[illegible]	—	[illegible]	—
Cambridge	[illegible]	[illegible]	[illegible]	7.89	15.78	—	—	2.63
Lynn	60,809	24	7	4.16	37.44	—	—	—
Springfield	[illegible]	21	5	[illegible]	[illegible]	—	9.52	—
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	[illegible]	12	[illegible]	[illegible]	[illegible]	—	—	[illegible]
Holyoke	40,099	9	0	11.11	44.44	—	—	—
Brockton	32,783	10	[illegible]	[illegible]	[illegible]	—	—	[illegible]
Salem	31,495	15	6	26.66	20.00	—	26.66	—
Haverhill	30,065	[illegible]	[illegible]	—	—	—	—	—
Chelsea	29,479	12	[illegible]	[illegible]	[illegible]	—	—	8.33
Malden	27,252	[illegible]	2	16.66	16.66	—	—	—
Newton	26,498							
Taunton	26,464	[illegible]	7	20.00	13.33	6.66	6.66	—
Gloucester	26,008	1	—	—	—	—	—	—
Fitchburg	25,444	14	[illegible]	—	14.28	—	—	—
Waltham	20,942	7	[illegible]	—	—	—	—	—
Quincy	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Pittsfield	18,294	[illegible]	[illegible]	—	[illegible]	—	—	—
Northampton	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Everett	14,745			—	—	—	—	—
Newburyport	14,031	[illegible]	[illegible]	—	—	—	—	—
Amesbury	[illegible]	1	1	—	—	—	—	—

Deaths reported 2,791: under five years of age [illegible], principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, [illegible] acute lung diseases 581, [illegible] croup 125, scarlet fever 45, diarrhœal [illegible], whooping-cough [illegible], typhoid fever 26, cerebro-spinal meningitis 21, measles 12, erysipelas 10, malarial fever 8, small-pox 4, puerperal fever 1, typhus fever (New York) 1.

From whooping-cough New York 17, [illegible] Brooklyn 1 each, Boston, [illegible] From typhoid fever [illegible] Boston 4, [illegible] Brooklyn [illegible] Cleveland, Milwaukee, Washington, [illegible] Lowell and Cambridge 1 each. From cerebro-spinal meningitis [illegible] New York [illegible] Washington 5, Brooklyn, Lowell and Quincy [illegible], Milwaukee, Worcester, Lynn and Malden 1 each. From [illegible] 4, New York 3, Cincinnati 2, Brooklyn, Boston and Pittsburgh 1 each. From erysipelas Pittsburgh 3, New York 2, Philadelphia, Brooklyn, Boston, Cambridge and Taunton 1 each. From small-pox New York 3, Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending February 25th, the death-rate was 19.7. Deaths reported 3,909; acute diseases of the respiratory organs (London) 427, whooping-cough 94, measles 93, diphtheria 66, diarrhœa 50, scarlet fever 41, fever 29, small-pox (London 4, Manchester 3, Liverpool and Oldham 2 each, Bolton and Salford 1 each) 13.

The death-rates ranged from 13.9 in Huddersfield to 28.5 in Bolton; Birmingham 19.1, Bradford 21.4, Bristol 16.7, Croydon 24.9, Gateshead 20.1, Hull 18.5, Leeds 19.9, Leicester 16.8, Liverpool 22.4, London 19.7, Manchester 21.0, Newcastle-on-Tyne 19.3, Nottingham 18.2, Salford 17.7, Sheffield 18.0, Sunderland 19.4, West Ham 17.0.

METEOROLOGICAL RECORD,

For the week ending March 4, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S...26	[illegible]	[illegible]	[illegible]	24	[illegible]	[illegible]	[illegible]	N.W.	W.	[illegible]	[illegible]	C.	C.	[illegible]
M...27	[illegible]	[illegible]	[illegible]	[illegible]	70	45	58	W.	N.W.	14	[illegible]	C.	C.	
T...28	30.25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.	[illegible]	[illegible]	F.	N.	[illegible]
W...1	29.85	36	41	30	[illegible]	[illegible]	70	W.	W.	[illegible]	[illegible]	O.	C.	[illegible]
T...2	29.85	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	[illegible]	[illegible]	C.	C.	
F...3	29.81	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	70	S.W.	S.W.	[illegible]		F.	O.	
S...4	29.46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	N.W.	[illegible]	[illegible]	N.	O.	[illegible]
☞	[illegible]	[illegible]	[illegible]	[illegible]	72	[illegible]	[illegible]			11	[illegible]			[illegible]

* [illegible] N., snow. † [illegible] ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 4, 1893, TO MARCH 10, 1893.

First-Lieut. Henry R. Stiles, assistant surgeon, U. S. A., will be relieved from duty at Jefferson Barracks, Missouri, on receipt of this order at that post, and will report in person to the commanding officer, Fort Omaha, Neb., for duty at that post.

Captain Marcus E. Taylor, assistant surgeon, U. S. A., will be relieved from duty at Vancouver Barracks, Washington, at the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Logan, Col., for duty at that post.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING MARCH 3, 1893.

Murray, R. D., surgeon. When relieved, to proceed to Key West Quarantine for duty. March 1, 1893.

Bailhache, P. H., surgeon. To proceed to New York, N. Y., for duty. February 13, 1893.

Purviance, George, surgeon. Detailed as chairman, Board of Examiners. February 13, 1893. To inspect Reedy Island, Delaware River. February 23, 1893.

Hutton, W. H. H., surgeon. To proceed to Solomon's Island, Md., as inspector. February 6, 1893. When relieved, to proceed to Detroit, Mich., for duty. February 13, 1893.

HAMILTON, J. B., surgeon. Detailed chairman, Board to prepare Quarantine Regulations. February 16, 1893. Detailed as chairman, Board to examine officers, Revenue Marine Service. [illegible]

AUSTIN, H. W., surgeon. Detailed as member, Board to prepare Quarantine Regulations. February 16, 1893.

GASSAWAY, J. M., surgeon. Detailed as member, Board of Examiners. February 13, 1893.

STONER, G. W., surgeon. To proceed to Baltimore, Md., for duty. February 13, 1893.

GEDDINGS, H. D., passed assistant surgeon. Detailed as recorder, Board to prepare Quarantine Regulations. February [illegible]

WERTENBAKER, C. P., passed assistant surgeon. Detailed as recorder, Board to examine officers, Revenue Marine Service.

CONDICT, A. W., assistant surgeon. Ordered to examination [illegible]

HUSSAY, S. H., assistant surgeon. Ordered to examination [illegible]

PERRY, J. C., assistant surgeon. Ordered to examination for promotion. February 14, 1893. To proceed to Savannah, Ga., for temporary duty. February 25, 1893.

SMITH, A. C., assistant surgeon. Ordered to examination for promotion. February 14, 1893.

ROSENAN, M. J., assistant surgeon. To proceed to Hamburg, Germany, for temporary duty. February 14, 1893. When relieved, to proceed to Antwerp, Belgium, for duty. February 25, 1893.

NYDEGGER, J. A., assistant surgeon. To proceed to Charleston, S. C., for duty, temporary. February 24, 1893.

EAGER, J. M., assistant surgeon. To proceed to Key West, Fla., for duty. March 1, 1893.

GODFREY, JOHN, surgeon. When relieved to proceed to San Francisco, Cal., for duty. February 13, 1893.

IRWIN, FAIRFAX, surgeon. Detailed for duty in office of the U. S. Consul, Marseilles, France. February 25, 1893.

WHEELER, W. A., surgeon. Detailed as recorder, Board of Examiners. February 13, 1893. Detailed as member, Board to prescribe Quarantine Regulations. February 16, 1893.

WARDEN, EUGENE, passed assistant surgeon. To proceed to Baltimore, Md., for temporary duty. February 13, 1893.

WHITE, J. H., passed assistant surgeon. To proceed to Hamburg, Germany, for duty. February 27, 1893.

CAIRINGTON, P. M., passed assistant surgeon. Granted leave of absence for seven days. March 1, 1893.

WILLIAMS, L. L., passed assistant surgeon. When relieved, to proceed to Charleston, S. C., for duty. February 14, 1893.

BRATTON, W. D., passed assistant surgeon. Detailed as member, Board to examine officers, Revenue Marine Service. February 28, 1893.

KINYOUN, J. J., passed assistant surgeon. Detailed as member, Board to prepare Quarantine Regulations. February 16, 1893.

GUITERAS, G. M., passed assistant surgeon. To proceed to Gulf Quarantine Station for duty. February 23, 1893.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

The preliminary programme of the eighth annual meeting to be held in the Army Medical Museum and Library Building, Washington, D. C., on May 30, 31 and June 1, 1893, is as follows: (1) The President's Address, A. L. Loomis. (2) Discussion on [illegible] Cretinism in the United States, William Osler, Baltimore. [illegible] Pathology of Texas Cattle Fever and their bearing on the Comparative Study of Protozoan Diseases, Theobald Smith, Washington. (6) Experiments with the Bacillus Diphtheriæ, A. C. [illegible] H. C. Ernst, Jamaica Plains. (9) Gonorrhœal Myocarditis, W. T. Councilman, Boston. (10) The Prophylaxis of Cholera with especial reference to Immunization, E. O. Shakespeare, Philadelphia. (11) Creosote in the Treatment of Tuberculosis, J. T. Whittaker, Cincinnati. (12) On a Simple Continued Fever, G Baumgarten, St. Louis. (13) The Treatment of Typhoid Fever, S. A. Fisk, Denver. (14) The Intestinal Treatment of Chlorosis, F. Forchheimer, Cincinnati. (15) Probable Origin and Early Symptoms of certain Chronic Diseases of the Kidneys, C. S. Bond, Richmond, Ind. (16) The Reactions of the Urine with Ether, A. H. Smith, New York. (17) A Study of Addison's [illegible], New York. (18) Two Cases of Cystin Calculus, James Tyson, Philadelphia. (19) Two Cases of Diaphragmatic Hernia, James Tyson, Philadelphia. (20) Subphrenic Abscess with especial reference to cases which simulate Pneumo-Thorax, A. L. Mason, Boston. (21) Subphrenic Abscess, S. J. Meltzer, New York. (22) Sarcoma of the Lung, with specimen, D. W. Prentiss, Washington. (23) Pulsating Pleural Effusions, Jas. C. Wilson, Philadelphia. (24) The Importance of Uterine Displacements in the production of Vomiting during the early stages of Pregnancy, G. M. Garland, Boston; To be discussed by Drs. W. T. Lusk and W. M. Polk. (25) Experimental Observations concerning the nature of Chorea, H. C. Wood, Philadelphia. (26) Title to be announced later, W. M. Polk, New York. There will probably be time at the meeting for the reading of two or three papers more than those on this programme. Members who desire to contribute such papers are requested to send the titles of them to the Secretary, Dr. Henry Hun, 149 Washington Avenue, Albany, N. Y. The Constitution provides that papers shall not exceed thirty minutes in the reading.

THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY.

This Association will hold a special meeting at the hall of the New York Academy of Medicine, No. 19 West 43d Street, New York City, March 23, 1893, at 8 P. M.

The subject for discussion will be "Specific Remedies for the Treatment and Cure of Alcoholic and Opium Inebriety."

Short papers will be read by Dr. Norman Kerr, of London, Drs. Kiernan, Clevenger and Moyer, of Chicago, Dr. Hughes, of St. Louis, Dr. Peterson and Clark Bell, Esq., of New York, Drs. Mason, Mattison, Mann and Wood, of Brooklyn, Dr. Day, of Boston, Dr. Crothers, of Hartford, Dr. Russell, of Winchendon, Mass., Dr. Quimby, of Jersey City, and others.

The profession are very cordially invited to be present.

T. D. CROTHERS, M.D., *Secretary.*

THE PAN-AMERICAN MEDICAL CONGRESS.

SECTION ON THERAPEUTICS.

Members, whether specialists or general practitioners, who desire to read papers at this meeting should notify the undersigned at once of their intention and should send him by July 10th, at the latest, an abstract of their paper in order that it may be translated into the three official languages of the Congress and published in the programme. The importance of this Section and the interesting papers which have already been promised, give assurance of a very successful meeting.

H. A. HARE, M.D., *President of Section.*

RECENT DEATHS.

WILLIAM D. HODGES, M.D., M.M.S.S., died in Nahant last week, aged thirty-nine years. An obituary notice of Dr. Hodges will be found on page 274.

CHARLES P. STRONG, M.D., M.M.S.S., died in Boston yesterday morning, aged thirty-seven years. He graduated from Harvard College in the class of 1876, and from the Medical School in 1881. At the time of his death he was physician to out-patients at the Massachusetts General Hospital, assistant surgeon in the Free Hospital for Women, and assistant in gynecology in the Harvard Medical School.

EDWARD H. JANES, M.D., died in New York, March 12th, aged seventy-three years. He was assistant sanitary superintendent of the Board of Health, with which he has been connected for twenty-seven years, during which time he had organized and directed many public sanitary works of New York City.

BOOKS AND PAMPHLETS RECEIVED.

City of Cambridge: Report of the Board of Health for the Year 1892.

Chólera et Fièvre Typhoïde. Par M. L. Galliard, Paris. Reprint. 1893.

Hypnotism as a Therapeutic Agent. By William Lee Howard, M.D., Baltimore. 1893.

United States Quarantine Laws and Regulations, Treasury Department, February 24, 1893.

Annual Report of the Health of the Imperial Japanese Navy, for the twenty-fourth year of Meiji. Tokyo. 1892.

Hydrotherapy in the Treatment of Nervous and Mental Diseases. By Frederick Peterson, M.D., New York. Reprint. 1893.

Possibility of Establishing Tolerance for the Tubercle Bacillus. Involution Form of the Tubercle Bacillus and the Effect of Subcutaneous Injections of Organic Substances on Inflammations. By Samuel G. Dixon, M.D. Reprint. 1889.

Original Articles.

TEN DAYS' EXPERIENCE WITH INFLAMMATIONS OF THE VERMIFORM APPENDIX.[1]

BY MAURICE H. RICHARDSON, M.D.,
Visiting Surgeon, Massachusetts General Hospital, Boston.

Appendicitis is frequently a very mild disease, and many cases doubtless recover without perforation or abscess. From numerous consecutive cases of this kind, the clinical aspects of which at times may have been alarming, the practitioner feels a security in the management of subsequent cases which may be followed and frequently is followed, by the most deplorable results. The proper treatment of appendicitis can be determined only by the study of a great number of cases of all types. The opportunity of watching this disease at the outset is seldom given the consultant, most cases having become well advanced at the time of his first examination. Early observations made by intelligent physicians are of great value in deciding the question of treatment in the first few hours of an appendicitis, and it is to be hoped that every practitioner who sees a case at this time will give us the benefit of his experience.

It has been said recently by an eminent English surgeon that the importance of appendicitis is very much exaggerated in this country, and that operations for its relief have fallen into well-deserved disrepute. Such statements do much harm, in my opinion, not only because they make light of a most serious matter, but because they encourage unwarranted confidence in treating palliatively a disease conspicuously treacherous and disparage the only possible means of averting death in a large percentage of cases. To show conclusively that the field is *not* a small one, and that the operation is not unimportant, I have only to say that in 1891 and 1892, in my private practice, the total number of deaths from appendicitis exceeded largely the total number of deaths from all other causes, and that in 1892, out of 150 private operations 34 were on the appendix, with eight deaths.

During the ten days beginning October 30, 1892, I was called to seven cases of appendicitis. They seem to me of sufficient interest to be reported in connection with Dr. Broughton's paper, inasmuch as they present clinically the chief features of mild, severe, and fulminating cases. In all I was assisted by Dr. Mumford.

Case I. Mrs. H. C., age fifty, I saw at Wakefield on Sunday, October 30, 1892, with Drs. Heath and Odlin. This woman had always been well and strong, and had a good family history. Eight weeks before she had been seized with pain under the liver extending into the splenic region. There were chill and fever. The pain continued, gradually increasing in severity and extent. At the end of four weeks it had become localized in the right flank, and was very severe, extending along the course of the right ureter and onto the anterior aspect of the right thigh. The temperature for the ten days before the operation had been ranging from 100° to 104°; the pulse about 100. Her general appearance was bad; the tongue was red; and there was marked cachexia, suggesting malignant disease. Dulness and tenderness existed over the whole right half of the abdomen. The right thigh was drawn up. The temperature was 100.8° and the pulse 100. Vaginal examination was negative. Diagnosis, abscess of appendicular origin.

Through a cut made in the right flank, extending downward and forward, large quantities of pus of strongly fæcal odor were evacuated. The appendix could not be seen nor felt. The discharge contained fæcal concretions, which could come only from a perforated appendix. Very good dependent drainage was established in the flank with rubber tubes and gauze. Convalescence became rapidly established and a satisfactory recovery followed.

In this case the abscess was slow in formation, and its walls therefore strong. Its contents were under considerable pressure; and both constitutional and local evidence proved the presence of a septic focus. Although her symptoms were not of alarming severity, the patient was profoundly septic and much exhausted.

A favorable termination without operation could not have been reasonably anticipated, nor would further delay have been justifiable. A localized peritonitis in any region not remote from the usual or occasional seat of the appendix, occurring in robust health, is so much more frequently caused by an affection of the appendix than by any other pathological condition (in the absence of pelvic disease) that I feel confident that the abscess sprung from an inflamed and perforated appendix from which had escaped the fæcal concretions found at the operation. From a clinical standpoint the remedy was obvious, whatever the pathological condition may have been.

Case II. A. H. B., age fifty-five, Wakefield, a patient of Dr. Charles Jordan, was operated on immediately after the preceding case. On the evening before (Saturday, October 29th) operation had been declined because the case seemed hopeless. On the preceding Tuesday, after six hours' tramping in the woods, he began to have pain in the right inguinal region, which rapidly became worse. He had had, last spring, two attacks of pain in the abdomen similar to the present, but not so severe. The day before (Monday) he took for constipation some of "Carter's Little Liver Pills," which produced two or three loose dejections. The pain was "irritating and cutting." There was vomiting once after a slight chill. On the second day (Wednesday), the day of Dr. Jordan's first visit, the pulse was 102 and the temperature 100°. There was great tenderness over the cœcum, but there was no general tenderness or distention.[1] On Thursday morning there was general distention, but less pain. He felt more comfortable, but in the course of an hour there was "tremendous pain," requiring opiates. The temperature was 101°, and pulse 114; no vomiting. On Friday, the fourth day, there was distention, tenderness, pain and fever. No change for the better. On Saturday, the fifth day, the distention was somewhat relieved by dejections and passage of flatus. I found a much distended and tympanitic abdomen, with great general tenderness. The facial expression was good. The pulse was 100, temperature 100.8°, tongue heavily coated, and general appearance fair. His mind was somewhat clouded. Rectal examination was negative. There was a right inguinal hernia. The diagnosis was general peritonitis from appendicitis. Operation was declined by the family because of the grave prognosis.

On the following day (Sunday), the sixth day, I found the patient in better condition than I had thought possible. The hernial protrusion was so marked that it seemed possibly the cause of his symptoms. I therefore advised a rapid exploration of the right inguinal ring. No strangulation was found. The bowels presenting were much injected, covered with lymph-flakes, and bathed in thin, foul-smelling fluid. The appendix was perforated and sloughing and there was a hopeless peritoneal inflammation. I tied off the appendix, washed out the abdomen and packed with gauze. The patient rallied well from the operation, but died on the following Tuesday.

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[1] Read before the Boston Society for Medical Observation, December 5, 1892.

[1] In the light of the subsequent history, an operation at that time would probably have been successful.

An operation on Saturday would have been better than one on Sunday, though the same result would probably have followed. The latest hour when a cure could reasonably have been expected was on Wednesday, the second day. By an exploration on the first day the patient, in my opinion, would have been exposed to a very slight risk, and would very probably have recovered.

CASE III. J. R., age sixty-nine, a patient of Dr. F. C. Granger, of Randolph, Mass., was seen for me by Dr. Mumford on the 31st of October. There was a history of three months' debility and constipation following the grip. On the 28th of October he had been suddenly seized at night with extreme pain in the right inguinal region. This was followed by vomiting, which was obstinate, and obstipation. This condition had continued for three days, accompanied by tenderness over the appendix, general abdominal distention, restlessness, occasional mild wandering, heavily coated tongue, a temperature ranging from 98° to 100°, and a pulse of from 70 to 90. On the 31st he was seen by Dr. Mumford. His expression was anxious and haggard; the abdomen distended and board-like, pain and tenderness everywhere over it, the knees drawn up, and the general condition so excessively feeble that operative measures could not be considered. A large, resisting, doughy mass could be felt in the region of the appendix and by the rectum, where he was exquisitely tender. He failed rapidly, and died the following day. An autopsy was performed, the result of which I have not been able to get. This was a case in which — whatever may have been found at the autopsy — the symptoms pointed very strongly to an inflammation of the appendix, and I have therefore included the case in my list. Some other pathological condition may have been found, but the symptoms to which this condition gave rise would have demanded an abdominal exploration if the general condition had been better.

CASE IV. R. S., 3d, age twelve. This case I report in some detail to show that it would have been better to operate during the first attack. Perfect recovery followed the operation, but I am inclined to believe that the patient was subjected to an unnecessary risk.

History (by R. S., 2d).—"R. S., 3d, age twelve, a strong and healthy boy, had had no illness of any kind during the preceding six months. On Saturday morning, October 22d, he complained of a pain in the abdomen. This was not intense, yet sufficiently severe to make him glad to go to bed. As there had been no movement of the bowels for twenty-four hours, a laxative was given. The pain was still persistent during the rest of the day and evening, with a certain amount of general tenderness over the abdomen. The temperature was not taken. There was one movement of the bowels during the night. On the morning of the 23d, the condition was about the same, except that the abdominal pain was somewhat less severe. Soft food was given during the day, and he was kept in bed. Examination of the abdomen at about six o'clock in the evening showed tenderness, now confined to a small area in the right side and flank, beginning at a point three and a half inches to the right of the umbilicus, from there extending backwards about two and a half inches, and reaching from the crest of the ilium below to the border of the ribs above. The tenderness was very trifling, and there was absolutely no pain over the tender area except on palpation. Dr. Richardson, in consultation about nine o'clock the same evening, considered the general condition to point to some affection of the appendix. The temperature at nine o'clock in the evening was but 100.5°. The tenderness on pressure in the right side continued to be noticed till Thursday. From Monday till Thursday there was almost nothing in the general condition of the patient to point to any serious trouble in the abdominal cavity. The bowels were moving freely, the appetite was good, the tongue clean, and there was no elevation of temperature, the only indication of possible trouble being a slight amount of tenderness. On Friday, Saturday, and Sunday he was able to be up and about. On Monday morning he was sent to school with directions to return at about eleven o'clock. On arriving home he looked very pale and tired, complaining that his side pained him, and that the teacher had made him stand up at the blackboard, which he found fatiguing. About twelve o'clock there was a chill, followed by considerable fever and increase in abdominal pain. There was well-marked dulness at the seat of the previous tenderness, with an increased area of resistance. The temperature at three P. M. was 102°. During the night there was one large operation of the bowels. The temperature on the following morning was 102°. Dr. Fitz, in consultation, confirmed the previous diagnosis of appendicitis. On Tuesday the temperature was 102.2° in the afternoon. The appetite was poor and the tongue foul. Wednesday morning the temperature was 102.2°. There was no increase in the area of pain or dulness. The right thigh was not flexed at any time, and the dorsal decubitus was maintained throughout. Dr. Richardson saw the child at eight P. M. The temperature at that time was 103.5°, and there was no abatement in the local symptoms."

On the following morning, November 3, 1892, after a consultation with Dr. Fitz, an incision was made four inches in length half-way between the crest of the ilium and the ribs. A collection of pus was found behind the ascending colon. Great care was taken not to break down the adhesions of the abscess and no attempt was made to find the appendix. The temperature immediately fell and an uneventful convalescence followed, during which a small fæcal concretion was discharged.

The diagnosis, which was clear before, was made absolutely certain by the presence of the fæcal stone. I have no doubt whatever that the prognosis in this case would have been much more grave had I made any attempt to remove the appendix. Unless the indications are very clear for the excision of the appendix itself the exploration should be very cautious and should be limited to free drainage. The absence of thigh flexion in this case, (and its presence is rather exceptional in my experience,) is not remarkable inasmuch as the inflammatory process could not have involved either the psoas or the iliacus. This symptom is seldom present unless the muscular fibres of these muscles are directly involved by a retro-peritoneal inflammation, or unless there is a tense abscess well down in the iliac fossa. The presence or absence of this symptom has little weight.

Case V. Mrs. ——, age fifty, I saw November 4, 1892. She had always been well, and came of a strong family. Last July she was taken with pain and tenderness in the right iliac region, with increase of temperature and pulse. At the end of three days a tender bunch was discovered at the seat of pain. During the next ten days the tumor gradually disappeared and her symptoms subsided. Some few weeks later she was thrown from a carriage and bruised quite severely, but had no return of the abdominal symptoms.

Sixteen days before I saw her she was as usual till ten P. M., when she was seized with very severe pain in the lower part of the abdomen. An hour later she had a very large movement of the bowels, accompanied by pain. Dr. J. A. Gordon was summoned and found a temperature of 102°. The lower part of the abdomen was tender, and there was pain of a lancinating character requiring morphine in quarter-grain doses. The temperature and pulse gradually rose, and the abdominal pain gradually became more general, though confined to the right side. She had three or four loose movements a day. At the end of seven days the temperature returned to normal, and the general symptoms had improved. On the eighth day the temperature began to rise again, and the local signs reappeared in the right iliac fossa. On the tenth day a large swelling was found in the right lower quadrant. On the twelfth day the temperature was 103°; on the thirteenth and fourteenth 99.5°. On the fifteenth the temperature was 105° and the pulse 130. November 4th, a swelling was discovered in the right side of Douglas's cul-de-sac.

During her illness there was occasional nausea and vomiting. The pulse most of the time was quick and feeble. I found what seemed to be an abscess pointing in Douglas's fossa. There was extensive dulness over the right lower quadrant. Her general condition was alarming.

In the afternoon, after consultation with Dr. Fitz, I made an incision in the right iliac fossa. We came down immediately upon a mass of inflammatory thickening about the cœcum, containing one or two small abscess-cavities filled with thick pus of foul odor. The inflammatory process had been going on a long time. The exploration was made with the greatest care, and the peritoneal cavity was not opened. The appendix was not found, but a thickened mass adherent to the cœcum presented itself, and seemed to be the remains of a long-inflamed and obliterated appendix. Examination *per vaginam* revealed a boggy condition in the pouch of Douglas, with an enlargement of the fundus uteri. The uterine body was thought to be retro-flexed, tender and inflamed, filling the cul-de-sac and pressing upon the rectum. It did not seem at the time best to interfere with the pelvic condition. I explored the right side of the pelvis between the uterus and the brim through the abdominal wound, but could feel nothing definite. The incision was packed with gauze.

On the following day the abdomen was very much distended and the general condition alarming.

During the following week there was no evacuation whatever of the bowels, nor was there any escape of flatus. There was marked gurgling in the intestine, showing that there was no interference with peristaltic contractions. The mass in the pelvis gradually increased in size, pointed behind the cervix, and pressed distinctly upon the rectum. The cœcum, which presented in the wound, gradually became much distended, until there was marked bulging of the intestinal coats. It seemed to me that there was a mechanical obstruction low down, and that the pelvic swelling was sufficient to prevent the passage of intestinal contents. I considered seriously the question of making an artificial anus through the distended cœcum which presented itself in the wound.

At the end of a week I made an incision through the posterior cul-de-sac and evacuated quite a large quantity of odorless pus. Drainage-tubes were placed in the wound and it was thought there would be no further obstruction. The obstipation continued, however. The bulging of the intestine in the right iliac fossa became more marked, until finally the intestinal contents burst through the remains of the vermiform appendix, making an opening about the size of a ten-cent-piece. For the next few weeks the cœcum emptied itself entirely through the abdominal wound, and there was hardly any discharge per rectum. Gradually, however, the abdominal wound closed, and natural passages of the bowels began to take place. From that time the convalescence, though slow, has been progressive.

This case has seemed to me one of the most remarkable and unusual cases of inflammation about the appendix that I have ever seen. At the present time (February 11, 1893), I have seen one or two cases which were very similar. The symptoms which were difficult to explain and to meet were those of an acute intestinal obstruction. More or less complete obstruction may undoubtedly be caused by the pressure of inflammatory masses in the pelvis. Such a cause existed in this case. If the contents of the bowel had not escaped by their own pressure through the stump of the appendix or through an incision in the gut, I have no doubt whatever that the patient would have succumbed.

The existence of fæcal fistulæ in connection with inflammations of the appendix is not uncommon. In my experience there is very frequently a fæcal discharge for some time after the operation. It is rare, however, for the entire contents of the bowels to escape in this way. I have recently operated twice for large openings in the cœcum resulting from appendicular abscesses. In each case the suture has been followed by a perfect recovery. Dr. Keen has recently reported a similar case, in which he closed a large opening by suture, and Dr. Ela reported one some time ago. Such conditions, I think, have resulted from the breaking of the abscess into the cœcum and not from rupture of the cœcum caused by intestinal pressure. The latter event seems to me quite unique. The combination of mechanical obstruction with an open wound at the ileo-cœcal valve and an intact gut must be excessively rare. There is no doubt as to what happened in this case, for we watched the progress of the distention and observed the appearance of the bowel daily. At first there was a bulging through the inflamed tissues of the outer wall of the intestine. At one spot in the cœcum, apparently weaker than the rest, a small, soft swelling appeared, which became more and more prominent until finally, with a gush, the bowel gave way and there was an enormous discharge of fæcal matter. It seemed to Dr. Fitz and to the rest of us that this condition was due to the giving way of the stump of the appendix.

One is often annoyed by the existence of a fistula following operations upon the appendix. It seems to me, no matter what the operation may be, that such an escape of fæcal matter can seldom be avoided. The fistulous tract almost always closes: in fact, invariably closes unless the opening in the cœcum is very large. It would seem that operations for the closure of large intestinal fistulæ are very successful. In the cases referred to of my own the convalescence was rapid and complete, and the same results were obtained by Dr. Ela and by Dr. Keen. Dr. Porter's successful intestinal resections for fæcal fistulæ following gangrenous hernia are familiar to all; and in a recent case of my own complete resection and suture for the same cause were followed by gratifying results.

Case VI. B. McG, age sixteen, I saw in consultation with Dr. Chandler, of Townsend, Mass., November 5, 1892. A young, robust girl. She was taken on Thursday night with grumbling pains in the bowels. On the following day she attempted to go to Boston, but had to stop at Ayer and return home. During the next week there was continual pain, elevation of temperature and pulse. There gradually formed a tumor in the right flank and in the right iliac fossa. A week from the following Saturday I went to Townsend and found the girl in great pain, with a tender tumor occupying the whole right side of the abdomen. Dulness extended from the median line to the back, downwards into the iliac fossa and upwards as far as the liver. She was profoundly septic, but there was no general peritoneal inflammation. I made a large incision in the right flank and evacuated an enormous amount of fæcal matter. Great care was taken not to break up any of the adhesions, nor was any attempt made to find or isolate the appendix. The pus contained several very characteristic fæcal concretions. Two large drainage-tubes were placed in the wound. The abscess cavity was washed out with a weak solution of creoline. The incision was carried well down into the flank so that drainage was dependent. The convalescence was good.

This case illustrates a type where the general peritoneal cavity is protected by inflammatory adhesions. The symptoms, while not fulminating, were violent; septicæmia was pronounced, and pressure upon the abscess wall considerable. The adhesions were strong enough to withstand much pressure. The girl was in imminent danger, however, of further extravasation. Fatal collapse might have occurred at any moment from separation of the recent adhesions. All cases of this kind, it seems to me, should be treated by incision and drainage as soon as the tumor is discovered. The results in this class of cases are very brilliant; and unless at the time of the operation the adhesions are separated by careless manipulations, the prognosis is very favorable indeed.

Case VII. H. B., North Abington, Mass., Tuesday, November 8, 1892. This case is one of the most interesting that I have ever seen. It is remarkable for the rapid development of the symptoms, for the early operation, and for the apparent improvement under the most hopeless conditions. Although death followed in this case, yet it is a very encouraging one, considering the fact that no one present believed he could live through the night.

H. B., age forty-one, a patient of Dr. Wheatley, was taken on Monday morning, November the 8th, with pain in the right side of the abdomen. He had complained of this pain several times before, and had had attacks, the initial symptoms of which differed in no way from the present. Vomiting was associated with the pain. His pulse was 80. On Monday night the temperature was 100°. He had a comfortable night. On the following morning (Tuesday) his temperature was 101° and pulse 120. The temperature remained at 101° during the day, but before night the pulse had risen to 132. During the second day there was no vomiting. On Tuesday evening at five o'clock I found the abdomen much distended and hard; the pulse was 132 and weak. The general appearance was bad; rectal examination negative. There was no dulness anywhere. The tenderness and pain were general. I made a diagnosis of perforation of the appendix and general peritonitis.

Although the prognosis was very unfavorable, it seemed to me that the only chance was to open the abdomen. An incision was made over the usual seat of the appendix, in the right linea semilunaris. The tissues of the abdominal wall were œdematous. The mesentery immediately presented, and was gangrenous. The abdomen was full of pus; the intestines were bathed in thin, foul-smelling fluid; the serous surfaces were covered with flakes of lymph; the intestine was distended; there was an acute general peritonitis. This condition of things seemed to me hopeless. On account of the patient's alarming weakness and the plainly hopeless local conditions I made no prolonged efforts to find the appendix.

This case seemed to me before and during the operation practically hopeless. The intestines floated in thin, offensive sero-pus, and in places were covered with diphtheritic-looking patches. The swollen and gangrenous omentum was cut off, and the bleeding-points tied. Gauze was packed deeply into the pelvis about a double drain, and also down into the right flank. After the operation the pulse was better than before. At the time I thought that he would die before morning. The next day the pulse was 112; and the temperature was normal. There was no movement of the bowels on that day. The bowels moved on the following day, and he was very much improved. This improvement continued for a day or so; but he finally died on Saturday, persistently vomiting, and much distended.

The operation in this case was performed within thirty-six hours from the time of the attack. The fæcal extravasation had become so extensive, however, that there was a marked general peritonitis. This is one of the few cases in my experience where I have been able to operate within the first forty-eight hours; and yet the condition of things found shows that an operation to be successful must be done much earlier in cases of this variety. The onset of the disease did not differ from that in cases of much less severity. The constitutional and local symptoms were not as severe as in other and milder cases, and yet the condition of things found at the time of the operation indicated a most extensive and fatal peritonitis.

The fulminating cases in this brief series died, as it was supposed at the time they would. The cases of localized abscess all recovered after suitable drainage.

The earliest operation, undertaken under most unfavorable conditions, though it did not succeed, was encouraging. I think I may safely assert that the results, on the whole, would have been better if every case had been explored within twenty-four hours of the onset of pain. We should probably have saved all the lives and should have avoided much unnecessary risk and suffering.

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TREATMENT OF CHRONIC ENDOMETRITIS BY CURETTING AND GAUZE DRAINAGE: WITH A SYNOPSIS OF TWENTY SEVEN CASES.

BY WALTER L. BURRAGE, A.M. M.D.

To Dr. William M. Polk, of New York, is due in a large measure the credit of having developed and perfected a method of treating endometritis that is rapid in its performance and efficacious in its results.

The method consists of divulsion, curetting and thorough irrigation of the uterus and then packing it lightly with an antiseptic wicking of gauze, the gauze being allowed to remain in place for several days.

Although gauze has been employed as a uterine packing time out of mind, it had not been used in just this manner until Dr. Polk so used it, and called the attention of the profession to the matter in a paper read before the Practitioners' Society of New York in the spring of 1888. In this paper he spoke briefly of the unsatisfactory results obtained by the usual methods of treatment of endometritis. A consideration of the conditions present in endometritis, he said, should lead to the institution of a more rational therapy. In this affection there is an inflamed and suppurating surface lining a nearly closed cavity, and the conditions are almost exactly comparable to those present in an abscess with an opening of insufficient size for the free escape of pus. The discharge is retained in the cavity bathing the already inflamed surfaces, keeping up the irritation, and preventing thereby any attempts on the part of nature to effect a cure. In the case of an abscess-cavity with a small opening the plain indications are to enlarge the opening and drain away all the irritating discharges as rapidly as they are formed, and a similar mode of procedure should be equally effective in the analogous condition found within the uterus in endometritis.

Again, in the same year (1888) he read a paper before the American Gynæcological Society on this subject, and referred to nine cases he had treated with success. Last December, in a third paper, before the New York Academy of Medicine, Dr. Polk advocated his plan of treatment in cases of endometritis associated with salpingitis or other periuterine inflammation, opposing the ground taken by most writers of textbooks, that where there is periuterine inflammation, the cavity of the uterus should not be invaded. He reported forty cases.

There is no doubt that treating the uterus in this way is a radical procedure; it is, however, founded on solid surgical principles, on cleanliness and drainage. The idea that pelvic inflammation following the passage of the sound was due exclusively to violence is giving way to the belief that the inflammatory trouble was caused largely by lack of asepsis, as to the sound, the vagina or both.

In case of salpingitis, ovaritis, retroversion and pathological anteflexion, it has been my experience that by correcting the endometritis in the method about to be described the symptoms of these affections have been ameliorated. Curetting and drainage should accompany the Alexander-Adams operation for retroversion, for the reason that the replacing of the uterus is not alone sufficient to overcome the deep-seated inflammatory condition of the endometrium that is found in retroversion of long standing: so in many cases of old lacerated cervix, the accompanying endometritis persists for years if not treated at the time of repairing the cervix. The same is true in some cases of cœliotomy for the removal of pus tubes. We have all seen bothersome hæmorrhagic endometritis causing annoyance a long time after the tubes and ovaries were out. It certainly seems to be a more rational plan to treat all the disease at once, rather than a part of it.

Curetting and gauze drainage confine a patient to the house for from ten days to three weeks. The average stay in the hospital of Polk's forty cases was eighteen days. I have not looked up the statistics of mine, but should say the average was a little lower. Most of the older methods of treatment, besides not being as thorough, took months of painful applications, and then the results were far from satisfactory. One especial advantage of this method is that the physician has the immense benefit of an ether examination, a procedure of inestimable value in the diagnosis of pelvic affections in women.

Chronic endometritis will be treated of in this paper from a clinical point of view. The different anatomical varieties enumerated by Pozzi are, — interstitial, glandular, polypoid, and the lesions of the cervix, and inflammation of the ovules of Naboth, granulations and folliculitis. A positive diagnosis of many of these without a microscopic examination of the scrapings is impossible. I have classified the cases as hæmorrhagic, painful, catarrhal and purulent. Where there has been good reason to believe from the history that a purulent discharge is infected with the gonococcus, it has been called gonorrhœal. I have not demonstrated microscopically the presence of the gonococcus in any of the cases reported to-night. By endometritis is meant an inflammation of the endometritium involving in most instances both cervix and body. It is a mistake, I believe, to consider inflammation of the endometrium of either the cervix or the body as a circumscribed lesion. The disease is apt to be more pronounced in one than the other, but treating one to the exclusion of the other gives unsatisfactory results.

The symptoms of endometritis, broadly, are pelvic pain, leucorrhœa, irregular catamenia, dysmenorrhœa, metrorrhagia or scanty menses, bladder and rectal symptoms, and reflex neuroses. Common symptoms are dyspepsia, neuralgia, constipation, sleeplessness and lack of energy and strength.

The physical signs are alteration in consistency and volume of the cervix, sensitiveness to light pressure bimanually of the cervix, body or both; the presence of erosions and dilated Nabothian follicles; a discharge from the os of clear transparent white-of-egg mucus, or opaque tenacious mucus, pus or blood, or a combination of any of these. Passage of the probe or sound shows increased uterine depth and is attended by more or less pain.

The hæmorrhagic form effects the body more than the cervix. The diagnosis is established by almost

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[1] Read before the Boston Society for Medical Observation, December 5, 1892.

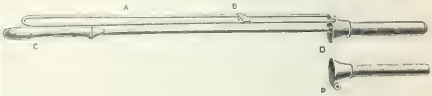
continual losses of blood through many months, the flow being unattended by pain as a rule, though in this variety there is likely to be constant lumbar pain; by finding on physical examination a uterine interior that has a boggy feel to the examining probe or sound, and the probe on withdrawal being followed by a flow of blood. In the painful form constant pain in the pelvis, and its consequent weakness, are the chief features. It has an insidious course; respites and exacerbations are to be expected. It seems to be the result of an infection that has developed slowly, and not the sequel to an acute attack. The cervix is hard, even sclerosed; in many cases it is abnormally long and the canal very tight, admitting a probe with difficulty; the canal is very sensitive; the discharge is either clear, transparent, white-of-egg, or viscid, opaque mucus. The catarrhal and purulent forms are characterized by abundant cervical discharge and by erosions of the cervix. The disease in this form is more pronounced in the cervix. There are many reflex nervous symptoms.

It is not my purpose to go into the symptoms nor diagnosis of chronic endometritis at length. Enough has been said to show on what features my diagnoses are based. We will proceed to the consideration of the operative treatment.

The operation of curetting the uterus is the one operative gynæcological procedure that is done most often by the general practitioner. There are so many different methods, many of them faulty either in lack of asepsis or thoroughness, that it seems worth while to describe in detail a method that if carried out in all its minutiæ is accompanied by uniformly favorable results.

An anæsthetic is a necessity in cases of chronic endometritis. Curetting — following abortion, and in certain fibroids where the canal is patulous and the uterus non-sensitive — may be done with cocaine or even without that. I have used a two-per-cent. solution of cocaine, injected with a hypodermic syringe in two or three places in the walls of the cervical canal. This does away with most of the sensitiveness, which, as a rule, is situated in the cervix and about the internal os rather than at the fundus.

Now as to curetting for chronic endometritis. The instruments needed are: two divulsors, a small light one with narrow blades bent at a good angle, and a large and strong one, with corrugations to prevent slipping: oftentimes Hanks hard-rubber dilators will be sufficient; a sound; dressing-forceps; bivalve speculum (Graves); American bullet-forceps; cervical speculum; tampon screw, or forked pusher; pair of ordinary scissors and curette. A word as to the curette. I have had considerable experience with the blunt wire loop and with Emmet's curette forceps, and they are neither satisfactory; the dull wire because being dull, it does not scrape well (the only office of a curette), and the curette forceps (a valuable instrument for pinching off mucous polypi), because with it you cannot go over the entire endometrium thoroughly and remove all the disease. The curette I like best is a modification of Sims's sharp curette, modified in being less sharp, the loop smaller, and the staff slender, flexible and elastic, so that the scraping is done with a non-rigid instrument. Thus you do away with the danger of going too deeply and of perforation. The harm to be derived from scraping away the endometrium, if done with reasonable gentleness, is to my mind chimerical. The trouble that resulted as it was done in the days of Sims, looking at the question from our stand-point to-day, was due less to the removal of the tissue than to lack of asepsis. If the endometrium is diseased, it is a rational process to remove it, especially as we have every reason to believe it is readily reformed. As to the divulsors: the small one is for tight canals, met most often in anteflexed uteri; the large one (Warthen's I prefer), is to complete the stretching. One divulsor is not enough. The forked pusher is a slender steel rod with metal handle, the rod being tipped with a shallow U, the prongs of which engage the gauze and carry it into the uterus. The cervical speculum is the only other instrument that needs special mention. In tight virgin cervices, particularly in the long anteflexed variety, it is next to impossible to wash out the uterine cavity before and after curetting with any ordinary irrigator because the cervix shuts down tightly on the tube preventing a return flow; hence the danger of forcing irrigating fluid and *débris* from the endometrium through the Fallopian tubes into the peritoneal cavity. This has been the bugaboo of irrigation in the past. Most intra-uterine irrigators and double-current apparatuses are complicated and hard to keep clean, and the openings for the return flow are apt to become clogged by clots and tissue while in use. In placing the gauze after the irrigation, the mucous membrane of the cervical canal having been rendered adhesive by the corrosive, it is found to be difficult to get the gauze through the cervix up to the fundus; but with the cervical canal lined with a sheath of polished metal, placing the gauze becomes an easy matter. The instrument I use is one I modified from Polk's original pattern, now no longer manufactured. It has two cylinders, as you see, with a detachable handle, and two obturators, one fitting each cylinder, and fixed on either end of a flexible staff. The larger cylinder, No. 28, French, is for use with the patient anæsthetized, and the smaller one, No. 25, French, is for subsequent treatments, should they prove necessary. In the cut, D D are the cylinders, A the detachable wire handle with its sliding clamp B, and C the obturator that is not in the cylinder. All the parts are metal, nickel plated. The instrument is made by Codman & Shurtleff of this city.



This completes the list of instruments. Other necessary apparatus consists of a basin of corrosive (1–3000), and a half-dozen balls of absorbent cotton about an inch in diameter, to be used with the dressing-forceps for sponging. They are as useful as sponges and sponge-holders and far less trouble and cleaner, as a ball of cotton is used but once and thrown away. For irrigation, an ordinary douche-pail or bag hung on a peg or the gas-fixture near by and filled with warm corrosive (1–3000), a piece of glass tubing, six to eight inches long, and of a diameter of not over three-sixteenths of an inch, should be fitted to the end of the rubber tube from the douche-bag. Prepare two pieces of plain gauze, each double thickness, one-half to three-quarters of an inch wide and three feet long. Sterilize them. Having cleansed the hands, impregnate one strip with iodoform or dermatol by rubbing it in a clean basin with the powder; place the other plain strip with it and have the basin within reach.

While the patient is being prepared for the ether, the operator prepares his hands and forearms by washing in soap and hot water with a nail-brush for five minutes by the clock, changing the wash water at least five times. Then he stains them brown with a saturated solution of permanganate of potash, and completes the preparation by dissolving the color in a saturated solution of oxalic acid and rinsing in warm water.

The patient's bladder and rectum having been emptied she is anæsthetized and placed on a table on her back in the lithotomy position, with her buttocks at the edge, and resting on a Kelly apron or obstetric pad, the flap of which is gathered into a pail on the floor. A Clover or Ott leg-holder is a handy thing to have as it does away with the need of an assistant to hold each leg. With this appliance, and one assistant to give the ether, it is possible to do a very thorough, clean and speedy operation.

The instruments, previously sterilized by steaming in an Arnold sterilizer for half an hour or boiling in a one-per-cent. solution of washing soda for ten minutes, are laid on a sterilized towel on a table within easy reach of the operator's right hand, as he stands facing the patient at the foot of the table.

The first step in the operation is a thorough bimanual examination. This should never be omitted, for, no matter how good an examination may have been had without ether, it is always possible that some important fact as to the condition of the uterus or the adnexa may be brought out when the abdominal walls are thoroughly relaxed by the anæsthetic. In certain stout patients and in those with rigid abdominal walls, a satisfactory examination can be obtained only in this way. The bimanual examination is to be made before scrubbing up the field of operation, for the reason that after the vagina has been treated with corrosive it becomes rough and sticky, and thus interferes with the tactile sense. Next scrub the external genitals and buttocks with a nail-brush and soap and water. Hooking back the perineum with the left forefinger, introduce a piece of soap the size of a prune in the vagina and pour in a little water with it. With a rotary movement of the forefinger and middle finger of the left hand in the vagina wash it thoroughly. Hooking back the perineum again, pour water into the vagina from a basin until it runs out free from soap. Irrigate the vagina and external genitals with corrosive from the basin in the same way. We have now a clean field for operation. Insert the bivalve speculum in the vagina and seize the anterior lip of the cervix with the bullet-forceps. The forceps make two small holes only and serve to steady the uterus during the entire operation, and are preferable to the tenaculum, which is apt to tear out again and again.

Pass the sound to determine the patency, direction and depth of the uterine canal, and also the condition of the interior of the uterus. A pedunculated fibroid or abundant fungosities may be diagnosticated and located by this means.

Divulse the cervix. For this purpose, all the time holding it immovable by means of the bullet-forceps held in the left hand, pass the closed blades of the small dilator into the canal and through the internal os. Dilate slowly. Further dilatation is accomplished with the large Warthen dilator. A moderate degree of stretching is sufficient. Ten minutes or more should be devoted to this part of the operation, as with quick divulsion, especially in a cervix having inelastic tissues it is an easy matter to tear through into the broad ligament. In this connection let me say, Don't approximate the handles of the large dilator by means of the thumb-screw on them. You cannot estimate the force you are using. Bring the handles toward each other by the grasp of the hand until you think you have put the tissues sufficiently on the stretch, and then turn the screw to hold the handles as they are until the resistance is overcome. In most cases after dilatation you should be able to pass a No. 20 Hanks dilator with ease. Having removed the dilator, introduce the large cervical speculum. Irrigate for a moment the interior of the uterus by inserting the small glass-tube through the speculum to the fundus, first being careful that the water is running warm. Remove the speculum and introduce the curette to the fundus, and scrape in turn and thoroughly the anterior and posterior walls and the cornua, devoting the most attention to the seat of the fungosities, if present, and to the region of the internal os. It is here that the disease seems mostly to lurk, and a tight internal os is the chief obstacle to drainage. It is well to curette until all soft tissue has been removed. When this has been accomplished the curette makes a characteristic grating sound on the uterine wall. Next, the cervical canal should be attended to, the walls receiving a good scraping. Pass the uterine speculum again and irrigate the cavity thoroughly like any abscess-cavity and until the wash-water runs out clear. Leaving the speculum in place, take your strip of plain gauze from the basin and engage one end in the tip of the tampon screw or pusher, whichever instrument you happen to have. Carry the gauze to the fundus to one cornu, disengage the screw and withdraw it until its end is at the region of the inner extremity of the uterine speculum. Take a fresh hold of the gauze there and carry it to the fundus and to the other cornu, and so on until the cavity of the uterus is full. Pulling on the free end, withdraw all the gauze. The uterine cavity is now dry and free from corrosive. The next move is to pack it with iodoform or dermatol gauze, and the packing is carried on as just described, care being taken to pack from inside the uterus and not from outside the speculum. In the latter event you will find that the speculum has been filled instead of the cavity of the uterus. In packing, the gauze should be carried first into one horn and then into the other, and so on until the cavity is lightly filled, remembering that the shape of the interior is similar to an isosceles triangle of solid dimensions flattened from front to back with its base at the fundus and its apex at the internal os. A forcible packing is likely to excite subsequent uterine contractions. Now holding the gauze in place with the tampon screw remove the uterine speculum. Cut off with the sterilized scissors any excess of gauze, leaving about an inch projecting from the os. Having removed the bullet-forceps, wiped out the vagina with a piece of absorbent cotton and taken out the bivalve speculum the operation is finished. It is my custom to place a suppository of aqueous extract of opium (one grain) and extract of belladonna (one-half grain) in the rectum before putting the patient to bed. The entire operation should occupy about twenty minutes.

As to the after-treatment. The patient is kept in bed for from three to four days to a week; she is assisted by the nurse to sit up to pass urine, the use of the catheter being avoided as far as possible; after passing water the vulva is sprayed off with warm water. A vaginal douche of four quarts of hot corrosive (1 to 5000, temperature 110° to 115°) is given every night and morning while the patient is under treatment. The bowels are moved on the third day. Occasionally there is a rise of temperature on the second or third day. This generally means defective drainage. Any temperature above 101° after the first night means danger. Now and then one meets with an irritable and intolerant uterus, where the patient suffers from cramp pain in the abdomen on the second or third day. The pains are sometimes relieved by the spontaneous expulsion of the gauze, at others they pass away in an hour or two. If not, the indication is, as in the case of a temperature above 101°, for the removal of the gauze. In removing the gauze it is important to observe the same antiseptic precautions with reference to the hands and instruments as with an operation. By passing the left forefinger to the external os and sliding the tampon screw along it, it is an easy matter to take out the gauze without disturbing the patient in bed.

At the end of a week the patient is placed on the table is the Sims position, a small Sims speculum passed, and the gauze removed. Should there still be present much sensitiveness of the cervix or fundus, accompanied by an unhealthy discharge, and this condition I have found mostly in cases of long-standing anteflexion, fix the cervix with tenaculum or bullet-forceps and introduce the uterine speculum, using the small [illegible], No. 25, and irrigate the cavity of the uterus with warm corrosive (1 to 3000). Dry it out and repack with antiseptic gauze. It has been my experience that the cervical canal remains well open when gauze has been introduced. Generally the small speculum will pass with only a momentary pain. In certain cases where the gauze has been expelled early, it may be necessary to pass Hanks dilators up to No. 16, when it will be found that the speculum enters easily. Putting in the gauze through the speculum is rarely accompanied by pain, due to the fact that the cervix, the sensitive portion, is protected by the speculum from contact with the gauze.

One or two packings, a week apart, are generally sufficient to cure the most obstinate cases. Now and then a case will need longer treatment. In most cases one packing is sufficient. The uterine canal has remained patulous for months after this treatment in many of my cases, and the tissues of the cervix were soft. The amount of watery oozing while the gauze is in place is very large, but soon decreases after its removal. Local depletion seems to be assured.

The gauze although left in in some instances as long as ten days has never come out anything but perfectly sweet.

I have made a tabulated statement of twenty-seven cases of chronic endometritis that were treated by curetting and gauze drainage; being all the cases, exclusive of Alexander-Adams operation, so treated by me in the six months from February to September of this year. Five of them were fibroids, Nos. 23 to 27 inclusive. In these the relief was only temporary, both as regards symptoms and anatomical results. Of the remaining twenty-two, three, Nos. 4, 13 and 20, were unsuitable cases for this treatment. As the result proved, the general symptoms of hysteria far outweighed in importance the local symptoms. One case, No. 12, had an attack of pelvic inflammation following the operation and was made worse by it. This was a hospital case; and I think I can place the fault in asepsis that caused the bad result. In the other eighteen cases the results were very satisfactory. I have not included my Alexander cases, because there the results might fairly be attributed to the restoration of the uterus to a more normal position in the pelvis. There was a rise in temperature on the second or third day in four cases, Nos. 10, 12, 17 and 19. In No. 10 there was a cystitis due to the use of the catheter, and the temperature might well be attributed to that. No. 12 we have just referred to. Nos. 17 and 19 were undoubtedly instances of the rise of temperature being due to defective drainage, removing the gauze in every instance brought the temperature down. In Nos. 5 and 19 I tore into the broad ligament on the left side while divulsing, without any subsequent harm in either case. Five cases, Nos. 2, 7, 10, 17 and 20, had had previous local treatment for periods ranging from nine months to two and a half years without relief. No. 2 had been under treatment by gradual dilatation of the cervical canal, douches, etc., for nine months without any improvement in her symptoms; and in spite of the fact that she had both ovaries prolapsed and one of them much enlarged, she was entirely relieved for six months, and then suffered only from a dragging sensation, due undoubtedly to the prolapsed ovaries and hard work. No. 7 had had an operation on the cervix and perineum a year before by one of our foremost operators, without relief. In two cases, Nos. 14 and 21, the curetting was done as a preliminary to abdominal section, with the object of doing away with the diseased condition of the endometrium before removing the more serious trouble in the adnexa. In No. 14 the curetting and drainage had the effect of relieving the pain and diminishing the purulent discharge. (The temperature dropped from 102° to normal.) In No. 21 it relieved the pain, and the temperature fell from 101.4° gradually until it reached normal on the third day.

To sum up the advantages that this method of treatment of chronic endometritis seems to possess, we may enumerate; its quickness of performance; its thoroughness; the local depletion of the pelvis, including drainage of the Fallopian tube if their uterine ends are not occluded; and, in cases of stenosis a permanent increased calibre of the uterine canal.

In closing, I wish to say that this method of local treatment, like any other, should be accompanied by hygienic and tonic general treatment to ensure the best results.

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FIVE CASES OF APPENDICITIS.[1]

BY HENRY W. BROUGHTON, M.D., JAMAICA PLAIN, BOSTON.

THE following cases present some interesting features, and may add something to the study of an important disease. I make the report from the standpoint of a general practitioner, who sees these cases early, and upon whom devolves considerable responsibility. He must usually make the diagnosis, which is not always easy. Moreover, he must learn to weigh the value of the earlier symptoms; for a correct interpretation of these will be his guide as to the proper *time* for consultation, and the settling of the important question of operation. Just here, as I understand it, lies a difficult problem. How to differentiate be-

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[1] Read before the Boston Society for Medical Observation, December 5, 1892.

No. of Case.	Name, Age, Social Condition.	Pregnancies.	Diagnosis.	Chief Symptoms.	Catamenia.	Condition of Uterus.	Depth of Uterus in Inches.	Uterine Discharge.	Uterine Tenderness on Bimanual Examination.	Condition of Adnexa.	Amount of Tissue obtained by Curetting. Small, less than ʒ i. Large, more than ʒ i.	Details of Treatment.	Anatomical Results.	Symptomatic Results.
1	M. M. 30 m.	Sterile.	Painful endometritis, retroversion, vaginitis.	Pain in left side and back for three yrs. since marriage.	Irregular, 5–6 weeks, scanty.	Retroverted 1st d., fixed.	2¾	Clear mucoid.	None.	Normal to feel.	Small.	Gauze for 6 days. " " 7 "	No uterine discharge, no vaginitis.	Relief of pain. To have a course of packing.
2	I. B. 21 m.	Sterile.	Painful endometritis, anteflexion cervix and body, prolapsed ovaries.	Dysmenorrhœa 9 yrs., pelvic pain 2 yrs. Previous treatment by gradual dilatation for 9 mos.	Regular, painful, increased flow.	Mobility limited by adhesion on left. Pinhole os.	3½	Clear mucoid, profuse.	Both cervix and body.	Both ovaries enlarged to twice normal size.	Large.	Gauze for 7 days. " " 7 "	Slight uterine discharge, no tenderness, normal flow 6 mos. after operation.	Relieved of all pain for 6 months. Then dragging sensation in pelvis.
3	H. D. 50 m.	7 c. 6 ab.	Hæmorrhagic endometritis.	Irregular and profuse for 1½ yrs.	Regular till 1½ yrs. ago.	Anteverted, mobility good.	3½	Bloody mucoid.			Large.	Gauze removed in 2 days because of uterine colic.	No discharge when she left the hospital.	Relieved of flowing when left hospital.
4	N. S. 15 s.		Catarrhal endometritis, hysteria.	Pelvic pain, headache, amenorrhœa. (Previous medical treatment for 5 mos.)	Irregular for 9 mos., scanty.	Anteflexed, long cervix.	2¼	Clear mucoid.	Slight of cervix.	Ovaries both small.	None.	Gauze for 6 days.	Local condition the same 2 months after.	Pain not relieved.
5	M. C. 23 s.		Painful endometritis, anteflexion of cervix, prolapsed ovaries.	Pelvic pain for 1½ yrs., dyspepsia.	Irregular, scanty.	Retroposited.	2½	Clear mucoid.	Both cervix and body.	Both ovaries in cul-de-sac, right enlarged one-half.	None.	Gauze for 7 days. (Tore through cervix into left broad ligament while divulsing.)	No tenderness and no discharge 4 months after. No bad results from tear.	Pain relieved for 4 mos.
6	T. B. 49 m.	11 c.	Catarrhal endometritis, vaginitis.	Vaginal discharge.		Retroflexed.	3	Viscid muco-purulent abundant.			Small.	Gauze for 7 days.	Relieved from both endometritis and vaginitis when discharged from hospital.	Subsequent history unknown.
7	M. H. C. 31 m.	1 c. 12 yrs. ago. 1 ab. 11 yrs. ago	Painful endometritis, prolapsed ovary and tube.	Pain in right lower abdomen for 12 yrs., dysmenor. for 12 yrs. (Oper. on cervix and perenium 1 yr. ago.)	Regular and painful.	Normal in position and mobility.	2¾	Viscid muco-purulent abundant.	Both cervix and body very tender.	Left ovary and tube prolapsed and adherent.	Large.	Gauze for 6 days. Then expelled after uterine colic of 3 hours.	No discharge and no sensitiveness 1 month after.	Pain entirely relieved when last heard from 1 month after.
8	A. B. 26 m.	4 c. 9 to 2½ yrs.	Hæmorrhagic endometritis, neurasthenia.	Irregular and profuse flow, pain in right abdomen for 2½ yrs. (Previous cœliotomy 2 yrs ago.)	Irregular, profuse.	Normal in position and mobility.	3	Bloody mucoid profuse.	Both cervix and body.	Left ovary and tube enlarged and tender.	Large.	Gauze for 7 days. " " 8 "	No discharge and no sensitiveness at end of two weeks.	Relieved at end of two weeks. To convalescent home.
9	L. H. 18 s. Colored		Gonorrhœal endometritis, retroversion.	Pain in back and inability to walk for 3 weeks, bubo on both sides.	Irregular, dysmenorrhœa, always.	Retroverted in 3d week and fixed.	2¾	Muco-purulent	Both cervix and body.			Gauze for 7 days.	Discharge decreased in amount. Home in 8 days, advised packing.	Entirely relieved of pain. Seen on street recently by another patient.
10	L. J. 23 s.		Painful endometritis, vaginitis.	Dysmenorrhœa for 3 yrs. (Curetting in Baltimore 2 yrs. ago.)	Irregular, painful.	Retroverted, and mobility limited by tight utero-sacral ligaments.	2¾	Mucoid profuse.	Of cervix.	Normal to feel.	Large.	Gauze for 3 days. Temperature 102°, and pain on 3d day, cystitis.	Slight mucoid discharge 4 mos. after. Vaginitis well.	Entirely relieved 4 mos. after.
11	E. McG. 22 s.		Painful endometritis, prolapsed ovary and tube.	Dysmenorrhœa, debility.	Irregular, painful.	Anteverted and to the left.	2½	Muco-purulent.	Of cervix.	Left ovary and tube twice normal size, and adherent in cul-de-sac.	Large.	Gauze for 7 days.	No discharge and no tenderness 6 weeks after.	General strength improved 6 weeks after. Had had no catamenia then.
12	P. McK. 26 m.	Sterile.	Gonorrhœal endometritis, retroversion.	Dysmenor and dyspareunia for 10 yrs. (Left ovary removed 3 yrs. ago, Alexander right side 1 yr. ago.)	Regular, painful, profuse.	Retroverted in 3d week, mobility good.	3	Muco-purulent.	Extreme of both cervix and body.	Right ovary prolapsed and adherent.	Large.	Pelvic inflammation. Temp. 102° morning of 3d day and gauze removed.	Uterus fixed. Freely movable in 2 months.	No relief because of pelvic inflammation.
13	H. C. 26 m.	1 ab. 15 yrs. ago	Catarrhal endometritis, retroversion, hysteria.	Backache, nausea, dyspepsia for 3 yrs.		Retroverted and retroposited, fixed.	3⅜	Mucoid.		Thickening at base of broad ligaments.	Moderate.	Gauze for 2 days. Removed for violent nausea and screaming without relief.	Discharge diminished and sensitiveness less.	No relief.
14	S. I. W. 27 m.	1 c. 9 yrs. 1 ab. 2 yrs. ago	Gonorrhœal endometritis, salpingitis, ovaritis, sub acute pelvic inflammation.	Pain in abdomen from acute attack of pelvic inflammation 6 wks. before, gonorr. 5 yrs.		Retroverted and to the left.	3	Purulent, profuse.	General pelvic hyperæsthesia.	Adnexa involved in an extensive exudate.	Large.	Gauze for 5 days, Cœliotomy in 7 days, adnexa removed.	Discharge lessened.	Entirely relieved of pain in abdomen.
15	N. C. 16 s.		Painful endometritis, anteflexion body and neck, debility.	Dysmenorrhœa 5 yrs., general weakness, pain in right abdomen. (Previous medical treatment.)	Regular, very painful, scanty.	Retroposited, anteflexion of body and neck, tight canal.	2½	Clear mucoid.	Both cervix and body.	Both ovaries and tubes normal to feel.	None.	Gauze for 7 days. " " 7 " Pessary.	Slight mucoid discharge for 3 months after, no tenderness.	Dysmenorrhœa relieved and general strength improved
16	K. R. 19 s.		Hæmorrhagic endometritis.	Profuse flowing for last 3 weeks, irregular and profuse flowing for 5 yrs.	Irregular, painful.	Retroposited.	2¾	Blood.			Moderate.	Gauze for 4 days.	No flowing.	
17	A. M. 26 s.		Hæmorrhagic endometritis, anteflexion body and neck.	Profuse flowing every 2 weeks for 3 mos., dysmenorrhœa.	Irregular, profuse, painful.	Sharp anteflexion of body and cervix, tight canal.	2½	Bloody mucoid, profuse.	Slight of both.		Moderate.	Temp. 103° on 2d night. Gauze out on 3d day, replaced 4th and left in 5 days. Tr. I. to fundus twice.	No discharge and no sensitiveness 3 mos. after.	Dysmenorrhœa entirely relieved 3 months after.
18	M. K. 24 s.		Hæmorrhagic endometritis, anteflexion of neck, prolapsed ovaries.	Yellow vaginal discharge for 6 mos., pain on urination.	Painful, profuse.	Retroposited, neck bent sharply forward, long and rigid.	3½	Purulent.	Of cervix.	Both ovaries prolapsed.	Large.	Gauze for 6 days. " " 10 " " " 5 "	No discharge and no sensitiveness for 3 months.	Relieved of flowing and discharge, also pain on urination.
19	G. McN. 25 s.		Painful endometritis, anteflexion of neck.	Pain in back for 3 mos., dysmenorrhœa for 12 yrs.	Irregular, always painful, scanty.	Retroposited, neck long and bent sharply forward.	2¾	Mucoid slight in amount.	Of cervix.	Normal to feel.	Moderate.	Temp. 101.5° on 3d day and pain. Gauze removed. A rent in cervix on left.	No discharge and no sensitiveness 1 mo. No harm from tear in cervix.	Pain in back relieved. Dysmenorrhœa not relieved.
20	D. McF. 20 s.		Catarrhal endometritis, hysteria.	Constant pain in right lower abdomen, loss of consciousness, perverted appetite, etc.	Irregular, scanty.	Retroposited, tight utero-sacral ligaments.	2½	Mucoid.	Of cervix and body slight.	Normal to feel.	Moderate.	Gauze for 4 days.	Less discharge, no sensitiveness.	Pain in abdomen not relieved.
21	C. E. 35 m.	3 c. youngest 6½ yrs	Gonorrhœal endometritis, salpingitis, ovaritis, pelvic inflammation.	Flowing for the past month.	Irregular, profuse.	Retroverted, fixed by exudate.	3⅜	Purulent and bloody, profuse.		Extensive pelvic inflammatory exudate.	Large.	Gauze for 7 days. Cœliotomy for removal of adnexa in 2 weeks.	Less discharge, no flowing.	Pain relieved and temperature reduced.
22	S. P. 30 m.	Sterile.	Painful endometritis, anteflexion, stricture of indurated cervix.	Pain in back for 8 yrs. since marriage, sterility.	Irregular, painful.	Uterus held on left at int. os, long cervix, very tight canal.	3¼	Viscid mucoid.	Of cervix.	Right ovary prolapsed.	Large.	Uterotomy with Otis' urethratome to 33. Gauze 2 ds., removed for pain and tem. of 101°. Gauze 3 times. Sounds passed.	Canal still tight, sensitive.	Pain in back relieved.
23	H. B. 43 m.	2 c. 21 and 16 yrs.	Hæmorrhagic endometritis, fibroid (small).	Excessive flowing off and on for 16 yrs., under treatment for 9 yrs.	Irregular, profuse.	Retroverted, posterior wall thickened from ext. os to ½ in. of fundus.	3⅜	Bloody mucoid.	Of fundus.	Normal to feel.	Moderate.	Gauze 1 week. Finger in cavity for diagnosis.		No flowing for 2 mos.
24	E. T. H 40 m.	Sterile.	Hæmorrhagic endometritis, fibroid (small).	Excessive flowing at periods for 5 yrs., watery discharge.	Regular, profuse.	Retroposited, size of small cocoanut.	3¼	Watery, profuse.	Of cervix.	Both prolapsed in cul-de-sac.	Moderate.	Gauze for 5 days. Curetted without ether.		Flowing and watery discharge diminished.
25	K. M. 40 m.	6 c. youngest 2 yrs.	Hæmorrhagic endometritis, fibroid (small).	Pain in abdomen for 10 days from attack of pelvic inflammation.	Regular, normal.	Good axis, fixed.	3½	Purulent.			Large.	Gauze for 7 days.	No discharge in 3 weeks when last seen.	Pain relieved.
26	M. D. 34 s.		Hæmorrhagic endometritis, fibroid (small).	Excessive flowing at periods for 11 mos., curetted 3 mos. ago.	Irregular, profuse.	Axis and mobility good, symmetrical and universal enlargement.	3⅜	Bloody mucoid.			Large.	Gauze for 7 days.		Relieved from flowing for 3 months.
27	M. C. 38 m.	4 c. youngest 12 yrs.	Hæmorrhagic endometritis, fibroid (small).	Excessive flowing at periods for 9 mos.	Regular, profuse.	Anteverted, mobility good, size of lemon.	3	Bloody mucoid.	Slight of fundus.		Large.	Gauze for 3 days.		Relieved from flowing 1 month, next month it was bad again.

tween the surgical and strictly medical cases: some cases require operation and some will get well without it. This is mainly a question for the surgeons, doubtless; but practitioners, it seems to me, must have intelligent views in this direction, even if they cannot speak with the authority of the specialist.

The importance of the subject seems to make it desirable that all varieties of the disease should be put on record, especially those that go to recovery without operation. Of the following five cases, all recovered; two after operation and three without it.

Case I. *Appendicitis, fæcal abscess, laparotomy, recovery.*

John C., age nineteen, apothecary's clerk, rather delicate looking, always a rapid eater. Frequent attacks of indigestion. Bowels usually regular. On Saturday February 8, 1890, he lifted a sixty-pound can of alcohol. No trouble until following Monday, when he felt faint in morning, laid down in the afternoon. Sharp pain came on at pit of stomach, which soon became "severe, steady pain." Took without advice, calomel and two seidlitz powders. No vomiting; no chill; slight headache; slightly feverish toward night, when bowels moved copiously. No relief. Took morphine (gr. ⅛). Dozed all next day; easy when quiet; motion caused pain. Took his own temperature, which was reported as 104°. One watery dejection.

I saw him on Wednesday, third day. Found him complaining of "tight drawing feeling in stomach"; pain on motion; easy when quiet; no chill. Face slightly flushed. Abdomen hard, retracted; general tenderness, not localized; no tumor; no induration; no dulness. Pulse 110, weak; temperature 102°. At evening severe, steady pain about umbilicus with tenderness. Vomited once or twice. Morphine (gr. ¼) subcutaneously; eight leeches to abdomen; warm fomentations.

Fourth Day. Patient looking and feeling much better. Temperature normal, pulse 100; no vomiting; no pain, except when he moves. Abdomen softer, still tender, perhaps more so on right side; palpation negative; no tumor, nor tense feel; no dulness, examination per rectum (negative). At evening temperature again rises to 101.4°; slight swelling noticed in right iliac fossa. Appendicitis suspected.

Fifth Day. Abdomen slightly tympanitic on right side; very tender; slightest touch causes pain.

Sixth Day. Patient looks better; feels more comfortable; tongue cleaner; facial expression cheerful and natural; no chills nor vomiting; temperature 101°.

Ninth Day. Has continued perfectly comfortable when quiet; apparently doing well, but temperature still 101° and pulse 90. Abdomen somewhat flattened; soft, except in right iliac fossa; slight sense of resistance noticed for the first time. Muscles rigid; rectus firm. Very tender all over right side from hypochondrium to Poupart's ligament; tenderness and resistance greatest low in the inguinal region; slight dulness at this point; no tumor; possibly outline of cœcum felt, doubtful. Examination per rectum negative. Rectum now filled with soft fæces, which was not the case yesterday, showing peristaltic action. No tympanites; no chills nor sweating. Patient seems to be gaining ground slowly. Of course, persistence of temperature with tenderness and appearance of sense of resistance makes prognosis doubtful. A surgeon was called in consultation. He advised against operation, and was in favor of expectant treatment.

Twelfth Day. Patient more natural; tongue moist; pasty coat as before, enema of soapsuds resulted satisfactory. There is a region of marked dulness, increasing to flatness, in the flank, extending from right lumbar region to Poupart's ligament; very tender, with sense of resistance. Pressure in flank causes pain to shoot down the right leg. Has had some aching in right leg. Breath of a peculiar sweet odor, suggesting pus. Strongly advised calling for surgical aid. Dangers of delay pointed out, but advice positively declined.

Fifteenth Day. Temperature rose to 102°.

Sixteenth Day. I was allowed to call the consultant, who performed laparotomy at once. As soon as the peritoneum was opened, a large abscess was disclosed in the right iliac region, extending well toward the back. A counter opening was made in the lumbar region behind. Half a pint of dirty pus, containing something resembling fæcal matter, was evacuated. The appendix could not be found; had probably sloughed away. Patient rallied well after operation. For several days pus and fæcal matter discharged through the wound, which was kept clean with boracic acid solution. In a week temperature was normal. Large quantities of soft fæcal matter continued to escape through wound. Fæces were also passed by aid of enema per rectum. Patient gaining ground.

Thirtieth Day. Two weeks since the operation. Pus gone, and fæcal matter diminishing.

Several days after the discharge of pus and fæcal matter had entirely ceased an enema was given. As no result followed, a second was given (without my knowledge), about two quarts in all. Very soon after, there was a sudden escape of considerable fæcal matter through tube, followed by soapsuds. The discharge of fæcal matter continued for a few days, and then ceased. The patient now made a gradual and satisfactory recovery. In five weeks the wound was closed.

Case II. *Appendicitis, laparotomy, recovery.*

On July 28, 1891, I was called to attend Richard L. A., aged eight, and learned the following history: Patient a rather nervous child, sea-sick from steamboat excursion a week before. Two days ago ate beefsteak; had a cross fit; swallowed it whole; would not chew. Began to vomit next day; vomited about twenty times. Pain soon developed in lower part of abdomen. Bowels moved spontaneously; large pieces of steak in vomitus; restless and hot through night.

Second Day. I saw him at 6 p. m. Vomiting had ceased in early morning. Complains of pain in right iliac region. Temperature 100°. Abdomen very tender, especially on right side; not swollen; no dulness; no tympanites; no resistance. Tr. opii camph., hot fomentations of turpentine, enema of soap suds; good result. Appendicitis suspected.

Third Day. Got up early of own accord, and walked into bathroom, and had a movement. Walking caused pain; was obliged to stoop over. I found him dressed and sitting in a chair. Ordered him back to bed. Temperature 101.4°. Abdomen very tender.

Fourth Day. Free dejection, the last portions hard and lumpy. Patient quite comfortable. Temperature 100°. Slight swelling with tenderness and dulness in right iliac fossa.

Fifth Day. Patient feeling much better, temperature still 100°. Belly tender and swollen over whole right iliac region; area of dulness increased. Examination per rectum negative, and followed by a free, semi-solid dejection.

As I was just about to leave for my summer vacation, Dr. A. P. Perry took charge and referred patient to the City Hospital. From the hospital records I learn the following:

Sixth Day (August 1, 1891). Dr. Gay operated. "A small incision was made in the right iliac region, about three inches long, half-way between the anterior superior spine and the umbilicus. On cutting through the peritoneum, there was an escape of two drachms of pus, foul and greenish-yellow. The opening was enlarged with the finger, and at the bottom of the sinus, which was shallow, a small mass of necrotic tissue was found to be the gangrenous appendix. This was ligated at the base where the tissue was healthy, and snipped off. Inside was found a concretion about the size and shape of a small marble. The wound was irrigated with a 1–3000 bichloride solution. The peritoneum was sutured, then the muscles and skin; and the wound dressed with corrosive and baked gauze."

Patient did very well; discharged after five weeks. Has had no trouble after two years.

Case III. *Appendicitis, recovery without operation.*

Anna W., age twenty-six; single; a large, strong German girl. Catamenia regular; bowels usually regular, but inclined to diarrhœa upon very slight provocation. One year ago had an attack of vomiting, with pain and tenderness in the right side. Took morphine by the mouth; the pain continued for two days with severe vomiting, some pain and tenderness lasted a week. In four months had a similar attack, not so severe. Last June had a third attack.

On November 22, 1892, I was called, and found her rolling about the bed in agonizing pain, cutting in character, and vomiting profusely dark green bile and mucus. I learned that two days before she had eaten baked beans and chicken salad, and that the pains came on in the night. She took paregoric and felt better. On the following day she went to her work, and had six or seven small, loose dejections. To-day the pain with cutting came on suddenly; felt as if something were drawing her together. Belly somewhat tender, but nothing else discovered. A dose of calomel and castor oil (which was unwisely given) was immediately vomited. I gave morphine subcutaneously (gr. ¼), with a mustard paste, and later turpentine stupes to abdomen. Relief only slight, and at 3 P. M., I was again called. Gave subcutaneously half a grain of morphia, with some relief to pain, but vomiting continued. In the evening abdomen not swollen; somewhat tender on right side and also at left iliac fossa; no resistance; belly not retracted; no dulness nor tumor; examination by rectum negative; temperature normal.

Second Day. No better; pain and vomiting continued; pains described as cutting in character, and seem to draw her together; seems to localize about right side. Somewhat tender on right side, but also tender in left iliac fossa. Temperature 100°, pulse weak. No dejection nor flatus since attack began.

A little later Dr. Dunbar saw her with me. On careful percussion there was distinct dulness in *left* iliac fossa. Diagnosis doubtful. From the small, loose dejections on Monday and the persistence of vomiting and pain, also dulness in left iliac region, the idea of intussusception was entertained, or possibly some fæcal accumulation. Accordingly, a rectal tube was passed six inches, and a little warm olive oil injected. The tube then without any forcing was passed fully twenty-two inches. The tube was quite rigid, English web-tubing, and apparently did not double upon itself. A pint and a half of warm oil was then slowly injected, followed by two quarts of warm water. This occasioned some pain while passing, but she quickly seemed to feel somewhat better. Abdomen did not seem at all distended from this, and the dulness in left iliac fossa was entirely gone. Percussion was tympanitic. Some oil was soon passed, but the water retained. The vomiting now stopped for the whole day, and the pain was better. At evening she still felt the tight drawing feeling on right side; some tenderness on right side. Dulness at left iliac region entirely gone. During the evening vomited once, a half-pint of green bile. No dejections since pain began, no sleep.

Third Day. No vomiting all night. Temperature normal. Patient feels better. Abdomen still tender on right side. Some slight sense of resistance for first time noticed. Dulness in left iliac fossa has returned, covering an area about the size of the hand. There is, however, no sense of resistance. Dr. W. P. Bolles was here called in consultation. He considered the case one of appendicitis. At evening the patient was doing well. Temperature normal. Has vomited slightly once or twice; some pain.

Fourth Day. Patient better. Temperature still normal. Tongue cleaner. Flatus passed for first time and later considerable oil and water. Dulness in left iliac region disappeared permanently. Some tenderness in right lumbar region still. Has taken nourishment for first time — Valentine's beef and Seltzer water; continued poultices.

Fifth Day. Bowels moved spontaneously, causing considerable pain in right side. Temperature normal.

Seventh Day. Patient doing very well.

Case IV. *Appendicitis, recovery without operation.*

Wm. F. T., age forty, furniture-mover. Strong, large frame. Bowels usually regular. In February, 1890, was moving a piano into a house; felt something "give way" in small of the back and felt faint; better in five or ten minutes; went on with his work. Next day could not "straighten up." Constant pain in back. In three or four days pain in right iliac region; lasted a few hours, off and on. Three weeks later (March 14, 1892), was in a loft moving furniture; slipped and fell backward partly through a hatchway; struck on the right side, just below the short ribs. Severe pain in right lumbar region followed; felt faint and sick at his stomach. Soon got up and went to work again. Felt pain and nausea whenever he pulled or lifted. At length went home; nausea and pain continued. On my arrival I found pulse and temperature normal, and marked tenderness in right side of belly, especially in right lumbar region; no dulness; no tumor; no sense of resistance. Pressure in right lumbar region caused pain, followed immedidiately by severe nausea with retching. When he lies perfectly still he feels only a dull pain through the right side of abdomen. Motion increases this and occasions nausea and retching. No movement of bowels; gaseous eructations.

Second Day. Nausea better. Belly tender, and slight pressure in right lumbar region at once produced a severe attack of nausea and retching, accompanied by sharp pain in right side. Says it feels "like a ball of fire." Examination by rectum shows dis tinct tenderness in right inguinal region, and by firm pressure through the rectum pain is produced in the right side, with nausea and retching; no tumor; no dulness.

Third Day. Pulse and temperature normal. Tongue clean. More or less constant pain in right iliac region, although not so severe; motion makes it worse, and nausea then returns. Right leg has not felt warm since accident, also complains, as at first, of some prickling and numbness.

Fourth Day. In early morning bowels felt as if they would move. He got up, and slight efforts at defæcation caused such agonizing pain that he fainted; when he recovered the bowels moved fairly well; dark, semi-solid, very foul odor. During the day two or three dejections, during which he fainted each time, and felt pain in right side.

Fifth Day. Condition unchanged.

Sixth Day. Slight steady pain; occasional nausea; signs in abdomen unchanged. By the rectum there is increased tenderness, with denser feeling in right inguinal region.

Dr. G. W. Gay called in consultation. Thought that there was inflammation in and about the appendix; found no tumor or evidence of pus; advised expectant treatment with rest and opiates, and tincture of iodine externally.

Tenth Day. Bowels moved again spontaneously, first time for five days. Pain was again intense, and he fainted away as before. In the night I was called, and found that he had had several dejections, accompanied with pain and faintness. He soon rallied.

From this date he gradually improved. At the present time, after nearly three years, he has had no further attacks, although he occasionally, if constipated, feels some pain and soreness on defæcation.

Case V. *Appendicitis, recovery without operation.* Alice M., age ten. While coasting, had pain in the right side and soreness. Began to vomit at night, and cried with pain about navel. Slightly feverish. Next day vomited frequently all day, and complained of pain in the right side, between navel and groin. Slightly feverish. Three dejections, the last one watery.

Third Day. No vomiting. Some pain still, with tender belly. Three or four loose dejections.

Fourth Day. First saw patient. Face flushed. Pulse 108, temperature 101.4°. Abdomen slightly swollen on the right side, half-way between the umbilicus and the anterior superior spine; *slight resistance;* no dulness; no tumor; examination by rectum negative. Poultice. Diagnosis, appendicitis.

Fifth Day. Patient lying on the side. No pain. Temperature higher 103°, pulse 112. Physical examination showed slight fulness of right side, a little less than yesterday; no resistance; tenderness diminished; some gurgling in right iliac fossa and in lumbar region; no dejections.

Sixth Day. Pulse and temperature normal. Abdomen softer; swelling gone; no resistance; no pain nor soreness. Child wants to get up.

In briefly reviewing these cases, we observe that the outbreak of acute symptoms in Cases 1 and 4 was immediately preceded by a traumatic history. Case 1 strained himself by lifting, while No. 4 fell through a hatchway, striking on the right side. The more usual history, as far as I have observed is that shown by Cases 2, 3 and 5 where some digestive disturbance seems to have ushered in the attack. I have thought it probable that these apparent causes were only accidents that served to arouse to a flame a previously mild and more or less dormant condition of inflamed appendix.

In Case 1 the diagnosis was made on the second day of my attendance, the fourth day of illness. Patient was very comfortable from the fifth to the ninth day, when the first sense of resistance was felt. On account of this and the persistence of other abdominal signs, a consultation was called. Expectant treatment was advised. On the twelfth day operation was strongly advised, but declined. It was not until the sixteenth day that consent was finally obtained, and the operation performed. I freely admit that the operation should have been done earlier. My consultant, a surgeon of experience, has frankly agreed that his advice for expectant treatment was a mistake. It is only fair to state that we labored under considerable difficulty in our relations with the family. They were strangers in the city, and declined what seemed to them a very serious operation. The favorable progress of Case 1 after operation was nearly uninterrupted. It was interesting to observe the large escape of fæcal matter through the wound, that continued for two or three weeks, and then stopped. In five weeks from the operation the wound was closed, and the patient well. The accident of reopening the wound and the reappearance of fæcal matter for several days, occurring after a large forced enema of soapsuds, should be noted.

In Case 2 the diagnosis was made at my second visit, on the second day of illness. By the fifth day, swelling of the abdomen with marked dulness was apparent, and he was sent to the Boston City Hospital for operation.

Cases 3, 4 and 5 were examples of the kind that recover without operation, the symptoms being those of pain and localized tenderness without the surgical signs of suppuration. Cases 3 and 4 were both characterized by complete absence of fever.

Case 3 was peculiar in showing an area of dulness in the left iliac region, that came and went and finally disappeared. It confused our diagnosis, I will admit. Dr. Bolles thought it might be due to several coils of empty and flattened intestine. It is rather singular, too, that this dulness, as well as the acute symptoms of pain and vomiting, were relieved by the rather unwarranted passage of the rectal tube. The gradual localization of pain, tenderness and sense of resistance in the right lumbar region, taken with the history and course of the symptoms, seem to make a diagnosis of appendicitis more than probable. Further trouble in such a patient is very probable.

Case 4 is rather a remarkable one. From the traumatism at the beginning, the acuteness of the pain and tenderness, with the vomiting, one might have looked for evidences, sooner or later, of suppuration. The symptoms of coldness, with numbness and prickling of the right leg, with the extremely painful defæcation attended with syncope, is worthy of comment. The instantaneous vomiting and retching that followed pressure upon the right lumbar region, and that also occurred by pressure through the rectum, was an interesting diagnostic point.

In Case 5 the acute symptoms persisted for five days, although abdominal signs began to improve after the fourth day.

In conclusion, I would say that in cases of appendicitis the importance of an early diagnosis, with a view to considering the question of operative treatment, cannot be overestimated. Much has been written by authorities in all parts of the world upon this subject. Nothing, to my knowledge, has appeared that is more practical and helpful to the practitioner than the papers of Drs. Fitz, Homans, Gay, M. H. Richardson, J. W. Elliot, and others in our own neighborhood. In spite of all, however, the early diagnosis is not always easy to make, at least to those who do not see large numbers of cases. Of course the diagnosis is comparatively easy after pain and tenderness have become localized on the right side, and the characteristic sense of resistance appears, or perhaps induration or a tumor. Prickling and numbness in the right leg, or a vague sense of pain shooting down the right leg, seem, as far as I have observed, an early symptom of importance. An examination by the rectum should always be made when tenderness, induration or a bulging tumor may be felt. With regard to the importance of early operation there seems to be a difference of opinion. Many go to the extreme of advising an operation as soon as the diagnosis is made. The profession, as a whole, will probably look with favor upon a less radical view.

Dr. J. W. Elliot, whose monograph came to me as I was completing this imperfect sketch, writes, after a large experience, as follows: "Cases with pulse and temperature under 100° are the ones I have most often been called to operate on when too late." He emphasizes the appearance of a "tender tumor" in right side or of a "distended tympanitic abdomen" as indications for an operation. He also says that "a rigid retracted abdomen with pain is also a local symptom of great importance, which is often overlooked. Continued vomiting, hiccoughing, rapid respiration, delirium, stupor, cyanosis, anxious face and chills are symptoms which, occurring even in apparently mild cases, indicate a grave condition which requires immediate operation. Any of these symptoms occurring in a doubtful case should settle the doubt in favor of operation, and occurring in a more severe case, with high pulse and temperature, the operation is urgent." He takes, I should judge, a conservative view of the question of operation; for he says: "It is not scientific to operate on every case, when we know beforehand that more than one-third (Fitz, 36 per cent.) recover, and do not require operation."

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Clinical Department.

DEPRESSED FRACTURE OF THE SKULL: RECOVERY.

[illegible], M.D., WESTON, MASS.

On September 11, 1890, I was called to Sudbury, in consultation with the family's attending physician, to see a little girl, L. A. R., aged four, who had been kicked in the head by a vicious horse. I arrived about an hour and a half after the accident. The child was conscious, although there had been profuse hæmorrhage, which continued till the completion of the operation. The right pupil was contracted, the left dilated; reflexes normal, respiration occasionally stertorous.

The fracture involved the right side of the skull, beginning at the middle of the supercilliary ridge of the frontal, extending in a circular direction upwards, so that the squamous section formed the centre of the depression, thence downwards, terminating in the mastoid process of the temporal bone; thus making a circular distance of nearly five inches around the squamous portion of the temporal bone. The distance from the two extremities of the fracture was nearly three inches, and there was a depression of a quarter to half an inch at the centre. The anterior, middle and posterior branches of the great meningeal arteries and veins were severed, hence the profuse hæmorrhage. The dura mater did not appear to be lacerated.

I responded to the call unprepared to handle such a case, as did also the attending physician. I did, however, have ether, sponges, scalpel, sutures and antiseptics; only these to perform so desperate an operation, where a trephine and an elevator seemed absolutely imperative. There was need, however, of an immediate operation, for the child's life was in peril every moment from the profuse hæmorrhage. We could not wait to procure proper instruments from our offices, so I obtained a small carpenter's chisel, with which and the above named instruments I succeeded in elevating all the depressed fragments, and in removing two pieces of bone, two inches long, and varying from a quarter to half an inch in width; also two irregular fragments as large as a nickel.

The upper section of the break involving the inferior portion of the parietal bone was not wholly detached, but hinged to the superior section of intact bone, freely movable with the outer and inner tables separated. To remove these fragments would have left an opening over two inches wide and four long, and, at that time, in my opinion, would have altered the result. Therefore it was deemed best to allow these pieces of bone to remain, trusting that they might reunite. Our hopes, however, were doomed to disappointment, as the later history shows. I would not convey the idea that the broken area was three to four inches square, but I do state that the distance between the extreme outer margins of the broken bones was four inches long. The opening itself, after removing the pieces and elevating the depressed fragments, was triangular in shape, and approximately one and a half by two inches.

After checking the hæmorrhage and thoroughly cleansing the wound, small fragments of bone were scattered over it, with the hope that they might serve as grafts and favor the formation of new bone. The wound was closed with interrupted suture, a strip of silk was put into the lower angle for drainage, and iodoform gauze and absorbent cotton dressing applied. The operation lasted forty minutes. The patient came out of the ether well.

September 12th: Passed a restless night, no delirium; slight nausea; silk removed and a small drainage-tube inserted; pupils normal; some fever; wound bled a good deal, but there are no symptoms of internal hæmorrhage. September 13th: Temperature 99.6°; bad night; some delirium; no nausea; pupils respond to light; wound bleeds a little. September 14th: Temperature still high; no hæmorrhage; slight delirium at night only; urinates freely. September 17th: Temperature still high; nights better; no delirium; appetite improving; wound looks well. September 20th: Temperature 100°; stitches removed; wound looks well; child wants to sit up and play. September 25th: Normal temperature; wound doing well; appetite good; very happy. September 30th: Temperature normal; wound almost entirely healed, except a small spot near the temple. A few days later it had entirely healed.

The last of December, during my convalescence from typhoid fever, the wound opened again with symptoms of necrosed bone and septic absorption. At the request of the family the child was placed in the Children's Hospital, at Boston. While there Dr. E. A. Bradford removed the external plate of the hinged piece, which was now wholly detached and necrosed. The result of the operation was successful. The child remained in the hospital a month, came home in good health, and has remained bright and active up to this time, with no tenderness, dizziness, headache or untoward symptom. Previous to the accident she was subject to fits, or spasms, occurring with no regularity, sometimes weekly, sometimes monthly. Since then she has enjoyed complete immunity from them. I saw the child in October, 1891. The opening presented an irregular surface, and was filled in with bony tissue, except a small space in the temporal region as large as a nickel; no pain on pressure.

I do not report the case as a phenomenon of surgical skill, or of unique technique on my part, but simply to impress the fact of the wonderful reparative processes of nature. Three physicians stood beside that child, and each and all were firmly convinced that death was inevitable. It seemed to me that in surgical interference lay her only hope, and considering the crude instruments at my command I have often wondered at her recovery.

Drs. Marsh and Oviatt rendered important service by their advice and assistance. To the latter I am indebted for the clinical history.

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CHOLECYSTOTOMY FOLLOWED BY CHOLECYST-ENTEROSTOMY.[1]

BY GEORGE W. JONES, M.D., OF CAMBRIDGE, MASS.

M. C., had had repeated attacks of colic, usually without jaundice, bile, however, had been found in the urine, and she was distinctly yellow during one attack. The attacks became so frequent that she was unable to attend to her usual vocation. A diagnosis of gall-stones was made by Dr. E. P. Hurd, of Newburyport, and at his suggestion an attempt to relieve the condition was made.

The primary operation was performed by Drs. Jones and Tuttle at the Anna Jacques Hospital, Newburyport. After making an incision along the border of the ribs, over the site of the gall-bladder, that organ was hooked up with the fingers in a collapsed condition and drawn out of the abdominal wound. It was stitched with a continuous suture of kangaroo tendon to the whole periphery of the opening in the abdomen so as to completely close the peritoneal cavity, and then opened. Several gall-stones were removed. The wound healed, with the exception of a small fistulous opening, which, after several unsuccessful attempts to close, was dilated, and an effort made to probe the common duct. The latter was partially closed, so that the instrument could not pass through the seat of stricture, and believing any attempt to forcibly dilate the constriction contraindicated in so dangerous a region, it was considered wiser to establish a new passage for the discharge of bile. The attempts to close the fistula had failed, not from the want of union of the parts, but because the accumulation of bile in the gall-bladder periodically distended this receptacle to such painful and uncomfortable dimensions that the patient sought relief at her own hands by perforating the closed fistula with a darning needle.

The operation for cholecyst-enterostomy was performed in January, 1893, by a novel method, with the able assistance of Drs. A. H. Tuttle and E. P. Hurd, Dr. Colcord, of Seabrook, being also present, about one year after the first operation, at a private residence in Newburyport. After cutting away the old scar, the fistula was dilated until it would admit two fingers, and the gall-bladder washed out with sterilized hot water. A three-inch-long incision was then made in the median line of the abdomen, on a level with the fistula, and carried through into the peritoneal cavity; the gall-bladder was evaginated through the old fistulous track (now dilated) by means of a finger passed through the median incision into the peritoneal cavity, behind this organ; two sutures were inserted into the everted wall of the bladder for the purpose of traction, and an incision made between them about three-quarters of an inch long. The operator's finger was now passed through the fistula into the gall-bladder, through the opening in its deep wall into the peritoneal cavity, and out through the median incision. While the latter opening was maintained patent by traction on two sutures, one on either side, a coil of small intestines was drawn out by the assistant, folded over his index finger, and pressed between his and the guiding finger of the operator, and carried in this manner back into the abdomen to the opening in the gall-bladder, through which it was passed, at the same time partially everting this organ through the fistulous opening as far as the surface of the abdomen. As a result of this manœuvre the fistulous opening presented the following appearance: an outer ring made up of the abdominal incision, including skin, muscles, fascia and peritoneum; a ring inside of this, composed of the old external incision into the gall-bladder; another ring inside the latter, formed from the internal incision, which was occupied by the surface of the intestine. In this manner the peritoneal surfaces of the intestine, and inner wall of the gall-bladder were brought into apposition and united by a line of continuous sutures, taken with fine kangaroo tendon, about the edge of the opening in the deep wall of the gall-bladder. The gut was then perforated, a drain made out of silkworm gut, inserted into it, and the deep wall of the gall-bladder with intestines, dropped back into place. The opening into the gall-bladder was packed lightly with gauze, the central abdominal incision closed and sealed with collodion, and a swathe fastened about the abdomen.

There was no shock, and rapid healing without any untoward symptom followed. After the communication between the gut and the gall-bladder was fully established, there were slight ejections of fæcal matter at times; and to hasten the healing of the external wound which had greatly contracted, a few stitches were inserted after refreshening the edges.

It must be remembered that this was a particularly favorable case to operate upon, as the gall-bladder, by repeated distention with bile, had become of cup-size dimensions.

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[1] Notes of Secretary, taken from a preliminary report of the case read before the Boston Gynæcological Society, February 9, 1893.

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY SAMUEL W. ABBOTT, M.D.

AN EPIDEMIC OF SCARLET FEVER TRACED TO A DAIRY.[1]

DRS. RUSSELL and CHALMERS, health-officers of Glasgow, report that on August 5, 1892, two out of four cases of scarlet fever reported were customers of a dairy which had on a previous day been reported as bearing a similar relationship to another case of scarlet fever then reported. By the close of the week (August 6th) ten cases were found, all of which were customers of the dairy in question. In the following two days the accumulated notifications numbered between sixty and seventy. It was found, on further inquiry, that one member of a family from which part of the milk was received, was taken ill with scarlet-fever August 4th.

On examination of the dairy it was found to be scrupulously clean. The cows were well-nourished, ate well, and nothing unusual in the quality of the milk had been noticed. The only thing to create suspicion was an eruption on the teats. About four weeks earlier there began in one herd an outbreak of teat-eruption, which within a fortnight affected every animal of the herd. This extended, two weeks later, to another herd belonging to the same owner, a mile distant. The eruption was at first small and not likely to attract attention until tenderness caused the animal to be restive during milking. A reddish-brown crust followed, blackening in the centre. Three or four such were present on each teat.

The cattle affection being so entirely a local one in this instance, it would seem a straining of terms to apply to it the name of bovine scarlatina; but the existence of a local eruption on the cow standing related, as this does, to scarlatina in man, at once suggests the parallelism which is, on every hand, accorded to vaccinia and small-pox.

DISPOSAL OF TYPHOID AND CHOLERA EXCRETA.[2]

Dr. Barwise, medical officer of health, of Blackburn, England, makes some practical remarks on the proper disposal of the excreta of typhoid and cholera patients. He recommends and uses a special typhoid pail. As soon as a case of typhoid fever is notified, a small excreta pail containing several pounds of chloride of lime is left at the infected house. The excreta are poured into it, and the tight-fitting lid is screwed down, making a hermetically closed joint. The next morning the pail is called for, a clean one left, and the excreta either burnt or taken to the sewage station. The pail is of a handy size, and a man can carry two easily. If there is a destructor in the district, the excreta can be destroyed by heat; which is undoubtedly the best mode of disinfecting them. If there is no destructor, a small special furnace can be used, having a cavity to receive liquids, upon the surface of which the flame is deflected, the reverberatory arches rising to about 800° F.; the typhoid stools are placed in the hopper, the slide is withdrawn, the excreta fall into the receptacle intended for them, and the slide is returned to its place. This apparatus has been at work at the Bolton Fever Hospital, and has given satisfaction. It can be used for burning all kinds of infected material.

BOVINE TUBERCULOSIS.[3]

Ostertag gives the following statistics of the ratio of tuberculous meat for several German cities for recent years, in those places where the meat was officially inspected:

Leipsic, 1890	22.3%	of total cattle.
Frankenberg, 1890	26.7%	" "
Zittau, 1890	15.0%	" "
Bromberg, 1891	26.2%	" "
Berlin, 1890–91	11.5%	" "
Dresden, 1891	24.6%	" "
Stolpf, 1891	24.0%	" "
Gottingen, 1891	10.0%	" "
Karlsbad, 1891	13.5%	" "

No reliable statistics on this point were available in England till the slaughter of cattle suffering with pleuro-pneumonia gave opportunity to determine how many of that class were also affected with tuberculosis. The results were as follows:

Of the total cattle slaughtered 12.22% were tuberculous.

Of cows and heifers in milk, or with calf . .	16.09%
Of bulls	1.53%
Of other cattle over one year old	2.77%
Of other cattle under one year old	1.2%
In Midlothian, of cows	22.5%
In London and the surrounding district, of cows .	15.5%

At the International Veterinary Congress in Paris in 1889, the following stringent resolution was adopted: "Meat from tuberculous animals, mammals and birds should be eliminated from the food of man and animals, whatever the degree of tuberculosis, and whatever the apparent quality of the meat."

Dr. Shirley Murphy, the eminent medical officer of health of London, in commenting upon this resolution, says of it: "The views of this Congress are not those which generally prevail; and although they are to be commended for their thoroughness, it does not appear that the evidence which at present exists renders it necessary to enforce them without reservations."

In Germany it is not customary to condemn as unfit for food the flesh of animals which have suffered only from localized tuberculosis. The order of the Prussian Minister of Agriculture, dated March, 1892, prescribes that, "the meat of tuberculous cattle is, as a rule, to be considered injurious to health when the meat contains tubercular nodules, or if the animal is emaciated, even if no nodules are found in the flesh. The meat of tuberculous animals is to be held to be fit for food if the animal is in good condition; and if (1) the nodules are found exclusively in one organ, or (2) if two or more organs are diseased, these organs are in the same cavity of the body or connected directly with each other, or by lymph-vessels, or by blood-vessels which do not belong to the general circulation, but to the lungs or portal venous circulation."

THE VALUE OF AN ENDORSEMENT.[4]

Food, Drugs and Drink, an English journal, makes the following vigorous statement to show the extent to which unprincipled advertisers will publish their wares.

"'VICTORIA CARBOLIC DISINFECTING POWDER. *Analyst's Report.* — Dear Sir: I have made a careful examination of your carbolic powder. Having analyzed two samples, I find one (No. 1) contains 15.5 per cent., and one (No 2) 15 per cent. of carbolic acid. Faithfully yours, JOHN LUBBOCK, *Chemist to the London Pure Drug Company.*'"

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[1] The Sanitary Record, February, 1893, p. 406.

[2] Public Health, February, 1893.

[3] Dr. Shirley Murphy's Presidential Address before the Society of Medical Officers of Health: Public Health, December, 1892.

[4] Food, Drugs and Drink, London, January 28, 1893.

"A careful search failed to find such a company, or such a chemist as John Lubbock. The latter may be an impudent adoption of the name of the cultured banker, baronet, and scientist. The sample thus testified to by Mr. John Lubbock has barely any odor of carbolic acid, and but a very faint one of tar oil. On analysis it was found to contain only the merest trace of tar oil; and there was no carbolic acid whatever in the swindle. Nay, it is even worse than a swindle, it is a concoction for which its makers ought to be placed in the dock, for we learn that in a recent epidemic of typhoid the typhoid stools, after mixture with this powder, *were buried and gave rise to other cases.*"

SKIMMED CONDENSED MILK.

The Local Government Board makes the following comment, in its Report of 1891–92, upon an inferior brand of condensed milk sold in London:

"One sample contained 1.5 per cent. of fat. The original milk from which it had been prepared had therefore been deprived of at least 80 per cent. of its fat. For infants it was recommended that the milk should be diluted with from eight to thirteen times its bulk of water. The consequence of feeding a child on such a mixture would be *semi-starvation.*"

MANAGEMENT OF SEWAGE-FIELDS IN WINTER.

Some observations were made upon the Framingham sewage-fields, in January last, to show the operation of the filtration beds in extremely cold weather, with the following result:

January 9, 1893: eighteen inches of frost and ten inches of snow; temperature 6° below zero; pumped 300,000 gallons of sewage. January 10th: Pumped upon the same bed 150,000 gallons sewage: the effluent began to flow from the underdrain in six hours: January 11th: Frost entirely out in some places. January 12th: Frost almost entirely gone, and sewage all disappeared; temperature of sewage, 50° F.; area of bed, seven-eighths of an acre. No sewage had been pumped upon this bed since September.

On January 16th another test was made on a bed of one acre. Pumped 500,000 gallons of sewage; temperature 49° F. January 17th: Pumped 175,000 gallons. On this bed there were fifteen inches of snow, and from twenty to thirty inches of frost. Minimum temperature of air, January 16th, 6° below zero; 17th, 20° below; and on 18th, 4° below. Effluent started in seven hours from beginning of pumping. January 18th: Frost all gone in some places. January 19th: Frost had nearly all disappeared, and sewage had entirely disappeared.

These observations show that sewage-fields may not only be successfully conducted in a rigorous New England winter, but also under a deep covering of snow.

About 500 tenements, hotels, residences, factories, and places of business are at present connected with the system.

THE SANITARY CONDITION OF THE SEWAGE-FARMS AT BERLIN.[5]

A very full and complete description of the sewage-farms of Berlin was presented at a meeting of the British Institution of Engineers in April, 1892, by H. A. Roechling, C.E., in which the subject was treated in all its bearings. From this paper we select that portion which treats of the sanitary condition of the farms, since inquiries are constantly arising in this country as to the effect of sewage-fields upon the neighboring population.

"It will, of course be admitted that a town has no right to dispose of its sewage by applying the same to land, to the disadvantage of a rural district, thus poisoning the air, fouling the open water-courses and the wells, from which the water-supply is drawn, endangering the very essentials for a healthy life and rendering those districts liable to pestilential diseases. The fact that such a state of things would inevitably result has often been urged against the establishment of sewage-farms, and it has been maintained that the filth of towns spread over the land would render life in the neighborhood of such farms impossible.

"It has been shown that the effluent from the farms is so pure that it can be admitted without detriment into any water-course, and that it cannot be distinguished by the senses from pure spring-water. All those who have visited the farms bear testimony to the absence of any smell in the fields; and only in one or two places near a sluice outlet could an unpleasant smell be perceived when the sluices were opened.

"But, in order to get a proper opinion as to the extent to which sewage-farming affected the health of those living on the farms, the authorities have established a system of fully recording all cases of sickness and death. These records deal with the years from 1885 to 1889, the farms not having been completed till 1885.

"The average annual population to which, during the past five years, this system of recording all cases of sickness and death has been applied was 1,580. Of these, 968, or 61 per cent., were men; 285, or 18 per cent., were women; and 327, or 21 per cent., were children under fifteen years of age. Among the adult male population of 968, there were 850 "misdemeanants," men impoverished in health by bad and irregular habits of life; and, no doubt also, a certain number of men employed only during harvest time, who are, as a rule, not too well fed. The material being such, it would not have been surprising if a heavy death-roll were found to exist on the farms; but, as will be seen from the tables, just the reverse is the case.

"The death-rates per 1,000 from all causes were 11.24 in 1885, 9.22 in 1886, 14.83 in 1887, 6.79 in 1888, and only 4.81 in 1889, or a gradual decrease toward the end of the period. Of the total deaths, 16 per cent. occurred among men, 9 per cent. among women, and 75 per cent. among children, the mean death-rate for the period being 9.75. The death-rate from the seven principal zymotic diseases was 4.32 in 1885, 3.69 in 1886, 4.15 in 1887, 1.13 in 1888, and *nil* in 1889, the mean rate during the period from these causes being 2.53. It will be noticed that the total number of these deaths was twenty in the period under review, and that the only victims were children under fifteen years of age. Seven deaths were due to scarlet fever, nine to diphtheria, three to diarrhœa, and only one to typhoid fever.

"It would also appear that there are on the average 426 cases of illness during the year, of which 38 per cent. are among men, 23 per cent. among women, and 39 per cent. among children under fifteen years. The zymotic diseases caused 240 cases during the whole period, or an average of 48 cases per annum. The greatest number of cases were measles; then came diarrhœa, scarlet fever, diphtheria, and last of all typhoid fever. Of the population affected by these diseases 16 per cent. were men, 5 per cent. women, and 79 per cent. were children. The percentages of the zymotic diseases, as compared with the cases of illness from all causes, were 6.44 per cent. in 1885, 22.59 per cent. in 1886, 8.26 per cent. in 1887, 11.65 per cent. in 1888, and 3.85 per cent. in 1889. On the gross average there were 28 cases of illness to one case of death.

"The author of the paper is aware that the population to which the above statistics relate, is very small, and that the period of five years is a limited one; but he is of the opinion that, if the above rates mean anything at all, they must be taken as indicative of the healthy conditions of life on the Berlin sewage-farms. Nearly every report mentions that in no recorded case of death was it possible to trace that it had any connection with sewage-farming, and the report for 1888–89 contains this remarkable passage: 'Special stress must be laid upon the fact that not one case of typhoid fever has been recorded during the year upon any of the farms, though the eastern and northern portions of the city were visited at the commencement of the year with a severe outbreak of this fever; this being the first epidemic of any extent since the establishment of the farms.'

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[5] Proceedings of the British Institution of Civil Engineers, April, 1892, vol. cix.

"It should also here be stated that four convalescent homes, with 286 beds in all, have been established on the farms; these homes are supplied with water by wells sunk on the spot.

"It does not appear from the annual reports that the sewage-farms had any detrimental effect upon the health of the cattle, etc., kept on them and upon the adjoining lands; on the contrary, it is stated, that any outbreaks of epidemics upon the farms were imported."

ON THE RESULTS OF THE REARING OF FISH IN THE EFFLUENT WATER FROM THE BERLIN SEWAGE-FARM AT MALDROW.[6]

The crude sewage of cities and towns, and the clear effluent from such sewage after being purified by filtration through soil of proper quality, are two radically different fluids. Professor Virchow once hazarded the opinion that fish might be reared in the latter.

Drs. Œsten and Behr were urged to test the question, and placed some trout fry in Lake Maldrow, in 1887. Before doing this he tried the experiment of raising them in the channels on the sewage-farm. In 1887 and in 1888 some small trout fry were placed in these channels. Two improvised ponds were prepared in 1889, with inlets and outlets under control, and these were stocked with two kinds of fish. In consequence of the accidental breaking of one of the dams, both of these ponds were emptied into Lake Maldrow, but not before the young trout had shown that they were able to flourish in effluent water, and to withstand the summer heat and the winter ice in shallow ponds. Six new experimental ponds were made in 1890, and stocked with many kinds of fish, which grew and thrived, and in 1891 two larger and deeper ponds were made. From the first of these ponds constructed in 1890, 150 trout, weighing 70 pounds, were served up at a banquet at the Berlin City Hall, in October, 1891. Subsequently 2,588 fish of various kinds were taken from these ponds. These experiments will be continued, and observations made upon the size and weight of the fish.

At Framingham, during the past year, a very handsome crop of Indian corn, cabbages, beets and other vegetables was raised upon the sewage fields. Possibly we may yet hear that the clear effluent streams have become a favorite haunt of the disciples of Izaak Walton.

THE PREVENTION OF NUISANCE FROM SMOKE.[7]

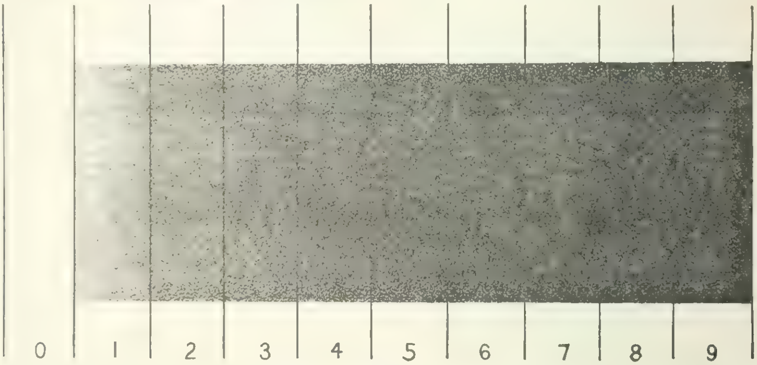
The increasing use of soft coal has introduced, to a considerable extent, into the cities of New England, the same questions which have arisen in Western cities, as well as in English towns.

Appliances have been introduced in Lancashire for complete combustion, where chimneys have been erected which have been free from the issue of black smoke for several years. The Jukes furnace was the first of the smokeless machines. It was, however, not economical, from the excessive admission of air, and has now ceased to be useful. It however established a principle on which a smokeless firing machine could be constructed.

Next came the "sprinkling" machines, which permitted the sprinkling of the coal over the fire in small quantities. They all had the fault of throwing fine coal-dust into the flues, whence it was carried up the chimney and distributed over the surrounding territory; hence their disuse. Mr. Fletcher, of Bolton, finally devised a machine, which, after carefully correcting defects, appeared to have the merit of producing a comparatively smokeless chimney. It is also durable and economical in its working. Mr. Fletcher summed up the question as follows, at a recent local government board inquiry, at Bolton:

"There is now no difficulty in adopting mechanical appliances for the consumption of black smoke at every works in Bolton. The twelve hour observations of some of the principal chimneys of the town pointed to the fact that the smoke nuisance could be practically suppressed. They could have the atmosphere in manufacturing towns as clear every day of the week as it is during a holiday."

Smoke Shades. — In order to carry out the sections of the Public Health Act (London), 1891, relating to smoke nuisance, the sanitary inspectors have been provided with standard diagrams of smoke shades, with detailed instructions. (See cut, which does not, however, present the shades with the same distinctness of gradation as the original.)



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[6] Œsten: Gesundheits Ingenieur, May 15, 1892, p. 289.

[7] Public Health, December, 1892, and January, 1893.

In recording observations of smoke the following points must be stated:

(1) Date and time of day.

(2) Situation of chimney.

(3) Kind of sky or background against which the smoke is seen rising.

(4) The density, and variations in density, of the smoke, according to the numbers on the "diagram of smoke shades."

(5) Duration in minutes of the prevalence of each particular shade of density.

NOTE. — (a) Distinguish smoke from steam, or steam and smoke mixed (b) If the density and duration of the smoke be sufficient to constitute a marked nuisance, do not fail to inquire who has charge of the furnace at the time.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, December 5, 1892, DR. JELLY in the chair.

DR. H. W. BROUGHTON read a paper on

FIVE CASES OF APPENDICITIS.[1]

DR. M. H. RICHARDSON read a paper on

TEN DAYS' EXPERIENCE WITH INFLAMMATIONS OF THE VERMIFORM APPENDIX.[2]

DR. BROUGHTON: I wish Dr. Richardson would state a few more of the evidences he regards as important and as pointing to the necessity for operation. He does not mean to say that perforation is the only one, I suppose.

DR. RICHARDSON: I do not think it necessary to operate in any case of appendicitis without perforation. I consider the existence of an abscess sufficient evidence of perforation. I have never operated in appendicitis without finding evidence of perforation, either an abscess or a general peritonitis. To this statement I would make one exception. Some months ago I operated upon a little girl in whom the history and physical examination pointed clearly to a perforation of the appendix. On opening the abdomen I found nothing but a slightly swollen and congested appendix: there was neither gangrene nor perforation. On section a thin fluid oozed from it. It resembled all the appendices which I have seen removed in the intervals between attacks. With a history of sudden pain, general or localized, attended by severe constitutional disturbance and physical signs in the abdomen, I should, I think, almost invariably operate. The doubtful cases are those in which, in spite of severe constitutional disturbance, there are no local signs — either dulness, resistance, or tumor. In these cases, if there is great tenderness, distention, and vomiting, I should explore, expecting to find a spreading peritonitis.

DR. PERRY: I have but very little to add to Dr. Broughton's account of the operation. I was present when Dr. Gay operated on the small boy referred to. On opening the peritoneum, I should think about two ounces of fetid pus came out, and the finger exploring the abscess found it was walled off from the rest of the abdominal cavity. The appendix was brought out; and it struck me as being larger than one would expect in a boy of that age, fully as large as my little finger and apparently as long. At the proximal end it was perforated, and it was very much swollen and inflamed throughout its whole length. In the opening could be felt a fæcal concretion, which was afterwards taken out, and was perhaps as large as the end of the little finger, perfectly round like a small marble. The appendix was tied with catgut; the catgut pulled off, and nothing further was done toward suturing. The cavity was washed out, and drainage of iodoform gauze was left in. The case went on to recovery.

PATHOLOGICAL SPECIMENS.

DR. RICHARDSON: This leg which I show was interesting from the surgical standpoint, because two members of the staff advised me to try to save it. The patient was a boy of thirteen or fourteen, who fell, some months previously, into a vat of boiling oil. The skin was entirely destroyed below the middle of the thigh, and a permanent contraction of the leg resulted. The heel was drawn up close to the buttock, and it was impossible to extend the limb more than an inch. The alternative suggested was forcibly to extend the leg, and graft the popliteal space in the Thiersch method. Whatever the Thiersch method may be able to accomplish in the rapid obliteration of granulating surfaces, I have yet to learn its efficacy in overcoming those deforming and disabling contractions in the neighborhood of joints which result from the total destruction of the cutis vera. Before amputating the thigh, I endeavored to carry out the suggestions of my colleagues. It was impossible, however, to straighten the leg, not only on account of the excessive contraction of the ham string tendons, but because the popliteal nerve and vessels were so much shortened that it would have been necessary to cut transversely every structure back of the knee-joint. I therefore amputated at the middle of the thigh. The boy made a very good recovery.

The next specimen which I have to show is a small cyst removed from the broad ligament by abdominal section. The next is the uterus removed from the same patient. The woman from whom this specimen was removed had been subjected to a high amputation of the cervix for one of the less malignant forms of uterine tumor.

The third specimen is a uterus, very extensively cancerous, removed like the preceding by laparotomy, with the patient in the Trendelenburg posture. In this operation I used the Trendelenburg table for the first time, and was able to avoid what seemed to me one of the most serious complications of vaginal hysterectomy. I was able to make, in a well-lighted field, a careful dissection of both ureters before separating the vaginal mucous membrane. Hæmorrhage was most perfectly controlled. The unsatisfactory part of the procedure was the enucleation of the disease immediately about the cervix. It seems to me that a combination of the vaginal and abdominal methods would be a great improvement on either alone. It would be much better to separate the diseased parts first by vaginal incision and to complete the operation by the suprapubic route. In both these cases of ulcerating uterine disease, the peritoneum was infected. I therefore think that it was unwise to close the opening in the pelvis. It seems to me that in cancerous disease it would be much better to leave the vaginal opening freely patent. Prolonged suppuration followed in both these cases, although they finally made good recoveries. In one case it became necessary to re-establish drainage through the vagina.

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[1] See page 284 of the Journal.

[2] See page 277 of the Journal.

Another specimen which I have to show consists of four facetted gall-stones. The patient, a woman of about twenty-five, passed nine facetted stones about two years ago. Since then she has had, at intervals, attacks of pain lasting three or four weeks, with complete remissions. On the 22d of November I opened the abdomen by the usual incision. The duodenum, transverse colon, omentum, and stomach were everywhere adherent to each other and to the gall-bladder, which had become contracted into a little knob on the under surface of the liver. I opened the bladder, removed the stones, and drained up hill by means of gauze used in the manner which I have elsewhere described. There is one interesting point in these cases where the gall-bladder is thickened and contracted upon stones. At the time of the operation very little if any bile escapes. In the course of two or three days the cystic duct becomes patent, and there is considerable biliary discharge. This fact I have repeatedly observed, and one must, therefore, in all cases, prepare for external drainage, otherwise he will be surprised to find an extensive extravasation in the abdominal cavity. I have now removed gall-stones in some fifteen cases. The prognosis is very good indeed. Even in those formidable cases where the biliary passages are opened near the foramen of Winslow, the bile seems to exert no deleterious influence upon the peritoneum. It may be drained up hill by means of gauze from an opening in the common, cystic, or hepatic duct. Suture after incising these ducts is extremely difficult and entirely unnecessary. At first there is a very considerable escape of bile, but very soon the normal channels become patent and resume their functions in a manner precisely similar to the restoration of the urethra in perineal sections.

Dr. Conant: I have just a few words I would like to say about this operation. My experience, of course, is nothing like that of Dr. Richardson. The first one that I saw was a case that I think if I should see it at the present time I should operate. There was tenderness, temperature 103°, an indurated mass in the flank; but his wife was about eight months' pregnant, and the family decided to let him run the risk. I saw that man at intervals for a year; and it was more than a year before he was able to attend to his regular work. Evidently there went on a slow absorption of pus. I agree with Dr. Richardson that I never have opened an abdomen, given the signs he speaks of, without finding pus. In every case where I have advised operation and operated I have found all the way from a teaspoonful to a cupful. One of the most instructive cases was a small boy I was called to see some twelve days after an attack of appendicitis. At the first consultation I advised against operation, because at that time the boy was having normal stools. Temperature and pulse were normal: and although there was a cake, it was thought advisable to wait. Ten days afterwards the temperature was 105°, pulse 140. I said the only thing that could save him was to open the abdomen. I found a large abscess about the cæcum that contained very nearly two ounces of pus; and I thought after being rid of that I was pretty well out of the operation, but found another abscess-cavity down in the true pelvis. I passed a tube down through the abdominal wound, and drew it out through the anus. As soon as the boy came out of the ether, he had stercoracious vomiting, and everything pointed to septic absorption and immediate death. For some reason unknown to me the boy lived. The fistula entirely closed up, and I was fortunate enough to pull that boy out at almost the eleventh hour, when he ought to have been operated on the first time I saw him. It seems to me there is no absolute rule we can have to guide us as to what cases are to be fulminating and what not; and while, perhaps, I would not say I would operate in every case, I still believe I am coming more and more to the theory that if I have an attack of appendicitis I shall want to have an operation performed. I have seen many cases where I feel sure if something had been done twenty-four or forty-eight hours earlier that the patients would be alive at the present time; and as none of us seem to be able to give rules as to what cases are to be fulminating and what not, and as the operation is comparatively simple, if we are at all in doubt or have any severe symptoms to deal with, it is wiser to open the abdomen and remove the appendix than to wait. On the other hand, I saw two cases recently in which I advised against operation, both in young women. In both it was a question whether the ovary on that side was the cause of the trouble. In one case nothing was done: in the other, some weeks after the family consented to a laparotomy. No appendix was found; but a cystic, degenerated ovary was found, which was the cause of the trouble. Adhesions existed between the appendix and ovary, so that it was difficult at first sight to tell the cause of the trouble. The appendix seemed to be normal on tearing away the adhesions; and the trouble seemed to be in the ovary, and that was removed and found to be in a state of acute congestion.

Dr. Blake: Greater success and clearness of treatment will come in this, when the surgeon is called in the early stage. I contend that the average practitioner, no matter how intelligent he may be is not qualified to understand the varieties and course of the disease; and is unable to determine in the early stages whether the case should come to operation or not. If an experienced surgeon comes in, there are two minds, one familiar with the disease; and the proper time will in all probability be selected for operation, and valuable lives saved. Take, for example, the fatal cases reported to-night by Dr. Richardson. It is evident to me that if he had seen those twenty-four or forty-eight hours earlier, he would have operated; and some, at least, would have had opportunities of getting well. I have had an unfortunate experience in this, and feel so strongly about it that I am rapidly coming to the belief that if we made an exploration in every case or almost every case, we would be on safer ground. The unfavorable cases are unfortunately those that we dislike to lose. I have in mind two such myself; one occurring some years before the surgeon had become fully aroused to the necessity of early operation. Feeling that something ought to be done I asked the advice of one of the most prominent surgeons in Boston. He came; and instead of making an opening, put in an exploring needle; finding no pus he decided it was not best to proceed. Another surgeon called later thought it was a case for operation; but the patient had got beyond the stage when it would offer any hope of success.

Another case was of a painful character. One of the most intellectual men in his community, a man whose life could be very poorly spared, had an attack of this disease which ran through its course very rapidly. I had a surgeon see him twelve hours after my first visit. The surgeon thought that as there was not a well-defined mass, etc., it was not best to operate at the time. He saw him twenty-four hours later, and it was too late. That life was sacrificed. Then there are cases where you have this disease complicated with other abdominal troubles. Last fall I was called to see a woman who had a uterine tumor and tenderness in the right iliac fossa. I felt pretty confident she had an inflammation about the appendix, and sent her to St. Elizabeth's Hospital, where she was operated on and recovered. I feel confident she would have died otherwise. I say again, if we are to do all that our patients are entitled to, it is the duty of the general practitioner to have surgical advice of the best obtainable character at the very earliest stage of the disease. A consultation at the beginning can do no harm; it may do great good, as it may lead to operation before that operation becomes useless.

Dr. W. L. Burrage read a paper on

THE TREATMENT OF CHRONIC ENDOMETRITIS: WITH A SYNOPSIS OF TWENTY-SEVEN CASES.[3]

Dr. Baker: I am very glad that Dr. Burrage has brought this subject before the Society, for I consider it is one of the most important ones that the general practitioner (who attempts at all to treat uterine disease) has to consider. Long ago Dr. Thomas, in describing the treatment of endometritis, felt the necessity of thorough drainage, and thus getting rid of the mucus from the diseased membrane. One of the first things that he advised in this connection, in his early text-book, was the establishment of a free and open canal, that this secretion might have a ready exit, and through which the application then in vogue might be made. If he had gone some steps further, as we have done in this day, we should have obtained better results.

I quite agree with Dr. Burrage in all that he has said in regard to the technique of the operation, with the one exception that I think myself that the curetting can be better done in the Sims position and with the Sims speculum than with the other forms. However, that is a non essential matter.

I think that any one who has toiled on in the treatment of endometritis after the old method with application after application, and has seen the unsatisfactory results, would quite agree with most that Dr. Thomas has said in the early editions of his book in regard to the non-curability of the disease; but to-day we can by a very slight surgical procedure cure a very large majority of such cases — in fact, I should say, perhaps all that have no malignancy in connection with them.

I am glad that Dr. Burrage has gone so fully into the detail of the preparatory part of the treatment; for therein, of course, largely depends the success, because the dangers are from the failure in carrying out perfect aseptic operation. Any one who has followed closely his description can see that the curetting of the uterus in this way, with all this preparatory treatment, is not a simple procedure, as it was formerly considered. I mean that there was no especial preparation made of the patient as to the cleanliness of the parts. If we consider it then, as Dr. Burrage has done, an operation requiring almost as much preparation as we should make for a cœliotomy, I am sure we shall meet with success in the treatment of this disease. When we remember the great power of absorption of the endometrium, and the very dirty methods of treating this membrane formerly in vogue, it is a wonder that we did not have even worse results than were then recorded.

To show just the difference between the old method of treating endometritis and this method, I would refer to a single case, and that a patient who came to me early in October with a history of having been for a year under constant treatment with application of iodine to the endometrium at the hands of a general practitioner, the applications having been made, after the old method, to the interior of the uterus. She had not improved; in fact she found herself rather worse at the end of the year than better. I at once practised the method of treatment which Dr. Burrage has so fully described, and practically cured her within three weeks. There was entire relief of the former symptoms of pain and discharge. The size of the uterus was reduced to normal, and there is every appearance that she is now well. When the cases can be cured as speedily as this I am sure that we have made a great advance in the treatment of this disease. I think a great deal of credit is due to the author of this paper for his ingenuity in devising a uterine speculum through which this packing can be so readily placed as well as the uterus irrigated. We had long felt the need of this, and it fills the gap entirely; and any one who has tried this speculum I am sure will never be without it, for it simplifies the process immensely. One will not infrequently be surprised, perhaps, to see the readiness with which the dilatation may be accomplished sufficiently to admit the smaller one, at least, of the specula Dr. Burrage has shown. I have listened with a great deal of interest to this paper; and I am sure it is one which has come in good time, and will, I hope, be read by the profession at large and be made use of by them.

Dr. Blake: I fully endorse all that has been said by Dr. Burrage. I am somewhat familiar with this, having done it perhaps forty times in hospital and private practice. When we think of the dangers attending the old method of exploring the interior of the uterus and the fatal results which followed, we are correspondingly grateful for this. The old method by sponge tents, and later the laminaria, were the substitutes for this operation. They did their work rather imperfectly, and were not unattended with danger. I recall a case where a sponge tent breaking off resulted in death, even in the hands of the most prominent gynæcologist of his day in this city. This operation comes now; and the success which follows it in properly selected cases is almost beyond belief. I suppose it is without exception the most reliable method that we have of treating sterility where that sterility depends upon a contracted uterine canal with perhaps catarrhal salpingitis. It, to my mind, takes the place of the old stem pessary, and does it successfully. It removes completely the necessity of long-continued interior uterine medication by iodine and the stronger acids in vogue twenty-five years ago. At that time the treatment of chronic endometritis was by acid nitrate of mercury, the most powerful acid, I believe, that we have except the chromic in its concentrated form. That is now unnecessary; and you get, after a short time, relief which did not attend the former treatment even when continued for months.

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[3] See page 281 of the Journal.

There are one or two points which ought to be borne in mind. This operation, simple as it appears, is not unattended with danger in unexperienced hands. Sometimes you come across a uterus with thin walls; and it is an unpleasant experience which has occurred to some of us to find our curette invading and exploring the abdominal cavity. Fortunately, however, it is not a serious accident; but it ought to be borne in mind that it is not strength unregulated that should be exercised in the application of a moderately sharp curette to the endometrium. The dilator that I prefer is Goodell's. It is too large to begin an operation with, and so it is necessary to have two sizes, one with conical points, and the other to finish. No danger has attended dilating the uterus in my hands; and the success in relieving the symptoms, and particularly in removing the ovarian pain that is a pretty constant attendant, is very gratifying indeed.

Dr. Conant: I most heartily endorse this operation. I think any one who has attempted to pack the uterus with a uterine speculum will appreciate, if he will use that speculum, the immense advantage it gives. The only caution I should give is that unless one has had experience he will find himself packing the uterus too full, and instead of allowing the discharge to escape, he will block it up, and it will distend the tubes. That can be remedied by pulling it out the moment the temperature goes up and repacking. The results of this operation have been extremely gratifying, not only to the operator, but to the patients.

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THE NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, January 20, 1893, **Henry Ling Taylor**, M.D., Chairman.

REFLEX SPASM ON "POINT PRESSURE."

Dr. R. H. Sayre presented a boy with congenital infantile spastic paralysis, in order to illustrate what he understood by contracted tissues, and by reflex spasm on "point pressure." This child had been seen by a number of gentlemen who had stated that nothing could be done to relieve his condition, yet the speaker was of the opinion that by proper treatment the child's condition could be improved sufficiently to enable him to walk without mechanical aid. He then demonstrated the existence of spasm when "point pressure" was made on the contractured tendo-Achillis. In his experience, the condition of such a tendon was only made worse by stretching; yet tenotomy and the subsequent use of massage, galvanism, and faradism, will cause a decided improvement. He had seen cases in which spastically contracted muscles could be elongated sufficiently to allow of placing the parts in the normal position without producing reflex spasm, and in such, of course, tenotomy is not required. Thus, in a boy twelve years of age, who had been for a long time utterly helpless, he was able, by carrying out this line of treatment, to improve his condition materially, so that the boy could walk about the room now, and clothe and feed himself. He was not prepared to state just how tenotomy affected the condition of those muscles in which this reflex spasm was elicited, but it served to place the nervous system in such a condition that the patients were better able to co-ordinate, not only these muscles, but other muscles in the body.

The **Chairman** said that in previous discussions on this subject, he had not noticed any distinction made between cerebral and other palsies. In the case presented, the spasm elicited on point pressure might be one manifestation of the heightened reflex activity present in cerebral paralyses. Such deformities could often be temporarily overcome by stretching, but most orthopedic surgeons were agreed that most cases required tenotomy for their permanent cure.

Dr. R. H. Sayre replied that it was not claimed that this sign would enable one to differentiate between infantile spastic paralysis and anterior poliomyelitis; but as a result of observations on cases which had been stretched for periods varying from six months to three years without success, his father had found these cases invariably showed reflex spasm on "point pressure" when the tendons were placed on the stretch, and he claimed that all such shortened tendons, whether as a result of spastic paralysis or of spinal paralysis, could only be permanently benefited by *division* of the tendon.

THE PARALYSES OF THE SPHINCTERS IN POTT'S DISEASE.

A paper on this subject was read by **Dr. Halsted Myers.**

POTT'S PARAPLEGIA.

This was the subject of a paper read by **Dr. R. H. Sayre.**

Dr. H. W. Berg said that the value of Dr. Myers's paper consisted in the aid which it rendered in localizing the lesions of Pott's paraplegia. Some years ago he had himself formulated a theory which he thought would render assistance in the same direction. He divided the cases in which the bladder was involved into two classes, those exhibiting "conscious incontinence" of urine, and those showing "unconscious incontinence" of urine. From the existence of two opposing sets of muscles in the bladder — the detrusor and the sphincter — he argued the probable existence in the bladder or rectal centre of a separate set of motor cells for each of these sets of muscles. In order to be conscious that the bladder is becoming filled with urine, the sensory nerves of the bladder must carry this information up to the brain; hence, in addition to the reflex act of the centre itself, there is a voluntary control over all these muscles exerted by the brain through these centres. Now, a lesion may paralyze either the motor cells or the sensory cells of the centre; in the former case, there is a conscious incontinence, and in the later, unconscious incontinence. Again, any lesion involving the set of fibres passing from the sensory portion of the centre through the posterior portions of the cord to the brain, will be followed by unconscious incontinence of urine, while any lesion pressing upon the anterior or lateral portions of the cord will cause conscious incontinence of urine.

Dr. Royal Whitman said that the distinction made by Dr. Berg, as showing the existence of pressure at one or another part of the cord, could be of but little practical importance, as the pressure to be removed by operation was almost always on the anterior aspect; an extension of the disease from the bodies of the vertebræ. It was also to be remembered that simple pressure was not the only element in the paralysis, for in many cases there was but little actual pressure, but rather an implication of the coverings of the cord in the extension of the tubercular disease, causing, by interference with the circulation in blood-vessels and lymphatics, nutritive changes and subsequent degeneration.

In certain cases, paralysis was a very transitory complication; in others, it was never or only partially recovered from. This difference might be explained in the one instance by simple pressure, in another, by the more serious implication of the coverings of the cord with nutritive changes, or by inflammation and destruction of the elements by the tuberculous process. In considering operative interference, it would be important, if it were possible, to make out more accurately the extent of the disease, and the actual condition of the cord itself, as certain advanced cases must be hopeless from any point of view, while simple pressure as for example from abscess, as in the case mentioned by Dr. Myers, might be relieved by operation at an early period, with good result. Although recovery from the paralysis of Pott's disease might be confidently predicted in the great majority of cases under conservative treatment, this recovery was not always perfect. A certain amount of weakness and spastic rigidity might persist indefinitely. He could recall the case of a girl, now fourteen years of age, who had recovered from seven distinct attacks. She was now, two years after the last recovery, walking about, although there was still well-marked spastic contraction of the legs. Her condition was, however, gradually improving.

Dr. Frederick Peterson said that the neurologist looked upon the paraplegia of Pott's disease as the most favorable of all organic spinal disorders, as a very large percentage recovered. It was very curious that cases which presented the marked symptoms ordinarily considered to be due to secondary degeneration in the cord, should, after the lapse of a year, recover entirely under conservative treatment. He agreed with Dr. Sayre that operative treatment should be only a last resort. He had been particularly interested in the cases reported by Dr. Shaffer in which there had been a cessation of menstruation. It is well known that there is in all probability a parturition and a menstruation reflex centre in the lumbar region of the cord, but the process by which the cessation of menstruation was produced in these cases is rather difficult to explain. Regarding the relative value of motor and sensory symptoms in determining the prognosis, he said that the paraplegia is due to compression or an inflammatory process, or to a combination of the two, and that where the sensory symptoms are marked, the prognosis is not so good. This is because the motor functions being represented probably nearer the periphery of the spinal cord, they are the first to suffer when the Pott's disease is mild in character. When the compression becomes very great, then the sensory symptoms develop. Hence, the sensory symptoms are an important index of the extent of the lesion, and of great value in assisting us in making a prognosis.

Dr. Samuel Lloyd said that Lauenstein's rule, to which reference had been made in Dr. Myers's paper, was formulated for fractures of the spine, and was never intended to apply to Pott's disease. In the former class of cases, the rule undoubtedly was valuable, but it had been conclusively proven by a study of the cases of Pott's paraplegia which he had published in October that it was inapplicable to this latter class. In Pott's paraplegia, it has been demonstrated clinically that incontinence may be present for a considerable period, and yet decided improvement would follow conservative treatment. It was stated in the paper that shock was one of the causes of incontinence. This is undoubtedly true, but shock in Pott's disease can only occur when the disease has advanced so far that there is a sudden dislocation, or where there is a rupture of an abscess into the spinal canal; shock such as this would hardly produce a lasting incontinence unless some permanent compression was caused by the accident. This had been shown in the cases of fracture of the spine which he had tabulated about a year ago, where it was proven that the cord recovered promptly and progressively from shock unaccompanied by any laceration or compression of the cord.

Regarding the overflow incontinence and the incontinence of the empty bladder, the speaker said that it was pretty well established, that, in cases of irritation of the cord where cerebral control is still present, the reflexes are increased, and this may easily lead to increased sphincteric action, and in that way to overflow. This would indicate the early stages of cord interference, and the fact that the pressure was as yet very slight, and not sufficient to shut off the cerebral control. On the other hand, where there is complete suppression of urine, with paraplegia and anæsthesia, the indication is that the pressure has become so extensive as to abolish cerebral control, and hence, the reflexes also. He thought all could assent to the statement made by Dr. Sayre, that it was only in very exceptional cases that operation is indicated. Chipault, who has carefully reviewed this subject, comes to the same conclusion, and emphasizes the importance of constant mechanical treatment after operation, a point which has been very generally neglected. The large number of deaths recorded in the table which the speaker had himself published, could be explained by the fact, that many of those operated upon were cases in which there was degeneration of the cord; in other words, cases now considered unfit for operation.

Dr. Joseph Collins referred to a case of extensive meningo-myelitis with descending degeneration of the anterior and crossed pyramidal tracts, in which operation had been done, and very properly, for there was no reason for supposing in this case that the cord could be regenerated when the degeneration was so extensive. The patient died of septic pneumonia a few days later. Many neurologists to-day do not believe that there is any such thing as acute transverse myelitis, cases formerly going under this head being considered as really instances of pressure myelitis. The first lesion is a meningo-myelitis, and not a simple anæmia of the cord. Indeed, the fact that the vessels of the spinal cord, one hundred and fifty to two hundred in number, are so small as to be nearly invisible to the naked eye, makes it highly improbable that anæmia could possibly cause the symptoms found in the early stage of Pott's paraplegia. The speaker endorsed what had been said about the inadvisability in most cases of resorting to operation. He thought it absurd to suppose that ergot or ergotine could cause sufficient contraction of these minute blood-vessels to sensibly overcome the hyperæmia. If these preparations have any action at all on the blood-vessels, it is to interfere with their nutrition, and, hence, with the regeneration of the affected fibres, and are, therefore, to be avoided. He wished to protest therefore against this very common method of treatment. Dr. Berg's theory, a modification of that presented by Gowers, was, in his opinion, unnecessarily elaborate. We know that in the lumbar cord there is a centre for the preservation of the tonus of the muscles in the lower extremity, which exerts a similar action on the bladder. There is also a centre for urination. In his recent paper on myelitis, there were cited cases of acute ascending paralysis with lesions of the posterior columns, and yet the bladder remained unaffected. In connection with the cases narrated by Dr. Shaffer, it was well to remember that it is claimed there is a menstruation centre situated opposite the eleventh or twelfth dorsal vertebra.

DR. S. KETCH referred to the case of a boy who had been under observation for over five years, and who had had paraplegia during the greater part of this time. Up to last summer, it was complete as regards the motor symptoms, yet there had never been any urinary or rectal incontinence. He had been under strict mechanical treatment all the time, and last summer he had improved sufficiently to walk a little. At present, the reflexes are still exaggerated, and there is slight ankle clonus. Orthopedists in general hold the opinion that operative interference should be a last resort in these cases, and the propriety of this view was well shown in his case, which he was sure would long ago have been subjected to operation by the advocates of laminectomy.

DR. BERG said that in his remarks on the two forms of incontinence, he had not stated that such cells as he described, actually existed but the symptoms observed were most easily explicable on such a theory. He would like to ask Dr. Sayre how often he had seen paraplegia before the development of the kyphos.

DR. ANNA M. GALBRAITH said that she had had one case of incontinence, due to inactivity of the lumbar centres, of four years' duration, which finally under suitable treatment terminated in complete recovery. Where electricity did harm, there was probably an acute inflammation, which is always a contra-indication to the use of electricity.

The CHAIRMAN said that Dr. Lovett and himself, in a paper which they had published in 1886, were among the first to call attention to the comparative benignity of Pott's paraplegia under proper mechanical treatment.

DR. MYERS, in closing the discussion on his paper, said his cases showed that the connecting fibres between the brain and the reflex centres could resist pressure severe enough to practically abolish their function for a long time. He had had a recovery from a paralysis of the bladder and rectum of four and a half months' duration, under conservative treatment, and had notes on two such cases cured by laminectomy after six months, and another history read as if the cure was gained after eighteen months.

The highly organized reflex centres themselves were only once affected, although most severe cases of dorso-lumbar disease were seen. The peripheral segment of the reflex arc had not been interrupted in any of his cases.

Unfortunately too few cases had been carefully reported to enable him to establish the prognostic value of the different varieties of this paralysis. He had never seen paralysis of the bladder and rectum without motor paraplegia, though it was not uncommon without note being made of sensory symptoms; therefore, he thought in the latter cases, the distinction of unconscious and conscious incontinence might be of value as indicating involvement or not of the posterior part of the cord.

In reference to Dr. Sayre's paper, he wished to mention a recent autopsy, where the cord was found compressed at the second dorsal by an extra-dural abscess, a thickened dura, and from being tightly drawn over the projecting bony angle anteriorly. Had laminectomy been done in this case, not only would this pressure not have been relieved, but there would have been a complete solution of bony continuity here, because the body of the second dorsal was entirely destroyed and the pedicle and laminæ were also affected. Rupture of the cord could not have then been prevented. Weakening the spine had been indefinitely referred to often, but this case showed it was a real danger, and one which could not always be anticipated, as externally this case did not seem a very severe one.

DR. R. H. SAYRE, in closing the discussion, referred to the anatomical structure of the spine, and the difficulty of relieving the pressure by operation without removing to a dangerous extent the supports of the spinal column, and said that such measures were of very questionable utility except where it is known to be in the posterior part of the spine. Massage is a very indefinite term, and as often administered, will only do harm; yet moderate stretching and gentle manipulation were beneficial in certain cases. The diversity of opinion regarding the utility of electricity is explained by the fact that here a large part of our treatment is empirical, whether mechanical, medicinal or operative. He had seen patients improve under galvanism, and become worse when this was intermitted. In cases of Pott's disease where there was disturbed heart action and a marked involvement of the sympathetic, decided benefit had followed galvanization of the sympathetic. In two of the cases reported, the paraplegia had existed for a number of months before the kyphos was discovered, and in a third, the appearance of the kyphos was preceded by a partial paresis of one leg. He did not see why ergot should not contract small vessels as well as large ones; clinically, it had seemed to him to do good, and he had supposed its beneficial action was to be attributed to a diminution in the supply of blood to the cord.

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Recent Literature.

History of the Life of D. Hayes Agnew, M.D., LL.D. By J. HOWE ADAMS, M.D. Philadelphia and London: F. A. Davis Company. 1892.

This octavo volume of 364 pages, with an appendix and index, forms a very complete biography of the late Dr. D. Hayes Agnew, of Philadelphia, who was one of the leading surgeons of the country, and whose name became very widely known in connection with President Garfield's case.

To the writer his work has evidently been a labor of love, in which he has been aided by Mrs. Agnew and the personal friends of Dr. Agnew.

A DEATH AT ONE HUNDRED AND ONE. — The death of an unmarried woman at the age of one hundred and one years is reported from Providence. Her whole life had been one of remarkable activity.

THE BOSTON

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THE FUNCTIONS OF STATE BOARDS OF HEALTH.[1]

In 1849, a commission, consisting of Messrs. Lemuel Shattuck, N. P. Banks and Jehiel Abbott, were charged with the duty of making a sanitary survey of the State of Massachusetts, and of presenting suggestions for the improvement of the public health. This report was made in the following year, and forms the basis of very much of the general sanitary legislation which was afterward enacted. It was not until 1869, or nearly twenty years later, that the State Board of Health of Massachusetts was established, with functions nearly identical with those recommended by the commission. Other States followed the example of Massachusetts, until there are at present about thirty-five such boards existing in different States of the Union.

The duties of State Boards of Health, as defined by the earlier statutes establishing these boards, were nearly identical, and embraced such important questions as investigations into the causes of disease, the collection of vital statistics, the effects of localities, employments and conditions upon the public health, inspection of food and drugs, the examination of water-supplies and sewerage systems, the management and control of infectious diseases, and other kindred questions relating to preventive medicine.

In many of the Western and Southern States, another question, the regulation of the practice of medicine, has been allowed to become the controlling factor in the organization of State Boards of Health, to such a degree as to crowd out of sight the principles of preventive medicine, upon which basis boards of health were at first established. The regulation of medical practice is undoubtedly a matter of importance to any community, but it should never be allowed to become the primary function of a State Board of Health.

Of these reports[2] that of the State Board of Health of Minnesota shows commendable progress in matters pertaining to public hygiene. The efficient secretary of the Board publishes much useful information relative to the spread of infectious diseases and the methods of preventing them. He manages a well-equipped vaccine institution, such as every State should possess, and as Superintendent of Vital Statistics of the State, annually issues from one to two thousand inquiries intended to correct errors in the returns.

The State Board of Health of Ohio was established six years ago, and its Sixth Annual Report shows the work of the Board for the year 1891. Several papers are presented upon public health topics, and the vital statistics of such cities and towns as reported to the Board are presented. The estimated death-rate was 16.88 per thousand.

The Report of the Nebraska Board of Health consists of little more than a list of the practising physicians of Nebraska, with six pages of information as to the working of the Medical Practice Act. The Board acknowledges that, under the existing law, it "has no sanitary powers." Why then should it be entitled a State Board of Health?

The Biennial Report of the State Board of Health of West Virginia contains an account of the proceedings of the Board relative to the prevention of the spread of infectious diseases during the year, a list of physicians admitted to practice, papers on school hygiene, an excellent paper on "Physical Culture" by the Secretary of the Board of Health of Maine, and the vital statistics of the State.

The Board of Health of Washington is doing a creditable work in encouraging the formation of local boards of health throughout the State, and in collecting and publishing the vital statistics so far as returns can be obtained in a comparatively new community.

The Board of Health of Oklahoma starts out in its first year with a commendable line of recommendations for future work. By the law of its constitution, it has many of the duties conferred upon local boards in Eastern States, together with the power to register all physicians for medical practice.

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THE TREATMENT OF HYPERCHLORHYDRIC DYSPEPSIA.

The discussion on Hyperchlorhydric Dyspepsia at the *Société de Thérapeutique*, Paris, which ended with a little unpleasantness and a "ditch that can never be filled" (according to the report) between the two chief speakers, began with some remarks by Constantin Paul at the meeting of November 9, 1892, "On

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[1] Fourteenth Report State Board of Health and Vital Statistics of Minnesota, [illegible]. Red Wing, [illegible].

Sixth Annual Report of the State Board of Health of the State of Ohio. Columbus, [illegible].

Biennial Report of the State Board of Health of West Virginia. Charleston, [illegible].

Biennial Report of the Nebraska State Board of Health. Lincoln, [illegible].

First Biennial Report of the Territorial Board of Health of Oklahoma. [illegible], [illegible].

First Annual Report of the Board of Health of Washington. Olympia, 1893.

[2] These remarks [illegible] are before us. Fortunately, they are only applicable to a portion of these reports.

Antisepsis of the Digestive Tube." He urged the importance in many gastric complaints, and especially in the putrid forms of dyspepsia, of frequent antiseptic lavages of the stomach. He was followed by Dr. Bardet, "On the Regimen and Treatment of Hyperchlorhydric Dyspepsia."

Dr. Bardet insisted particularly on the necessity of a rigorous dietetic regimen. Meat should almost completely be avoided — as a rule, suppressed — in hyperchlorhydria; it irritates the stomach and exaggerates its acid secretion. Only aliments should be chosen that sojourn a brief time in the stomach, passing rapidly into the intestine, such as soft boiled eggs, milk, tender vegetables and fruits. Some meats are notable for the toxines which they are likely to generate, — fish, game, shell fish, crustaceans, — and should especially be prohibited. All beverages containing alcohol are also suppressed, and only pure water and alkaline waters permitted. Tea and coffee are also forbidden. There must be a long interval (seven hours) between meals. Breakfast at 11 A. M. and dinner at 7 P. M., and no lunches. Internal antiseptic medicines, such as benzo-naphthol and salicylate of bismuth, are advised. A favorite prescription is fifteen grains each of salicylate of bismuth and hydrate of magnesia, in cachets, before each meal. The bowels must be kept free by magnesia or compound licorice powder.

This mode of treatment, which is essentially that of Dujardin-Beaumetz as practised at Cochin Hospital, was vigorously attacked by Dr. Henri Huchard at the meeting of December 14th. Huchard advocates the intensive alkaline treatment, and a diet of which hashed meat forms a principal constituent. He affirms that "Reichmann's disease" (hyperchlorhydric dyspepsia with continuous secretion of gastric juice) is curable after several days or several weeks by a medication consisting of from half an ounce to an ounce of bicarbonate of soda per diem. He gives this quantity for several successive days, without any fear of the "alkaline cachexia." He combines the soda-bicarbonate with chalk, and is in the habit of giving every hour after each meal, for four hours, twenty-five grains of bicarbonate of soda with five grains of prepared chalk. The entire daily quantity, at three meals a day, would be three hundred grains of sodium bicarbonate and sixty of prepared chalk. For drink at meals, Vals water. This alkaline treatment, Huchard says, rapidly effects disappearance of the pain, vomiting, and other worse symptoms. In a few days, the doses may be lessened by about one-half (150 to 225 grains a day); and these diminished doses must be kept up several weeks "to prevent return of the accidents, and to arrest the continuous secretion of gastric juice (gastro-succorrhœa).

Bouchard believes with Bouveret, who has written a work on "Dyspepsia by Gastric Hypersecretion," that azotized aliments (meat, eggs, shell-fish, fish) should constitute the basis of the diet, "being well and rapidly digested." He would suppress all fermented and gaseous drinks. Patients should drink "but two glasses of liquid with each meal." Great care should be taken in mastication; meats should be preferably hashed. Huchard advises a morning meal consisting of a glass of milk and an egg; a dinner of hashed meat and a little vegetable stew; a supper of milk or custards, eggs and hashed meat. During the night "to combat the pains and vomitings," a glass of milk or of some liquid-beef extract.

Huchard affirms, from a long personal experience, that "Reichmann's disease" is curable after several weeks by this mode of treatment. He sometimes conjoins lavages of the stomach with strong alkaline solutions. He condemns the vegetarian regimen, and contends that this regimen "favors the tendency to gastreclasis." Hyperchlorhydric patients digest meat rapidly and well, but slowly and incompletely amylaceous articles and vegetables.

Dujardin-Beaumetz found himself "in total disagreement with M. Huchard." The latter "seeks to annihilate the gastric juice by giving alkalies in large doses; and at the same time, he recommends meat which certainly energizes the secretion of gastric juice." He has never noted the evils following a vegetable or cereal diet, of which Huchard complains. Starches only pass through the stomach, and in no way fatigue it nor augment its acidity. Doubtless hyperchlorhydric patients get a kind of relief by eating meat; but this relief is only momentary, and is paid dearly for afterwards. They are relieved after the fashion of the drunkard who temporarily lessens his tremblings by resorting to his potions, but his future tremblings are made worse thereby. He thinks the enormous doses of alkalies given by Huchard likely to do great harm, while at the same time, in certain cases a moderate alkaline treatment is undoubtedly excellent.

With regard to dietetics, he says: "M. Huchard gives meat; I proscribe it. Meat is the most powerful excitant of the gastric juice and of its acidity. What we want to do, is to cause the digestion to be performed in the intestine, and let the stomach rest. This we obtain by milk diet and the vegetarian regimen. M. Huchard will object, that, to be consistent, I ought to proscribe meat diet in dyspepsia with anachlorhydria. I reply, that if I prohibit meat in atonic dyspepsia, it is because it undergoes putrefaction, and thus augments the gastric putridity. But the dominant reason is, that whether we have hyperchlorhydric dyspepsia or hypochlorhydric, the stomach is always sick, and the first duty in therapeutics is to let a sick organ rest; and this is why I resort to the vegetarian regimen."

Dujardin-Beaumetz does not consider "Reichmann's disease" as synonymous with hyperchlorhydric dyspepsia; in the former disease, there is always dilatation of the stomach and stagnation of aliments, and the disease is essentially incurable, as Reichmann admits.

M. Huchard, in reply to this, said that he thought it a strange therapeutic principle that would lead a man to prescribe a vegetarian diet for two opposite gastric conditions. It had been objected that by the intensive alkaline treatment there was danger of "annihilating the gastric juice." This he believes to be a mistake. By the full doses of alkalies, he aims to bring back the stomach to its normal standard, which is the first indication to fulfil.

"You wish to let the sick organ rest. Very well; but it is for you to prove that you contribute to the repose of the stomach by introducing into its cavity aliments which it is incapable of digesting. For my part, I believe the contrary, and I appeal to facts and not theories in support of my belief. I am convinced that the exclusive vegetarian regimen is a cause of accumulation or retention of food in the stomach, which is likely to be followed by dilatation, one of the worst evils of 'Reichmann's disease.' Hence the reasonableness of giving a mixed diet composed of hashed meat, eggs, and stewed vegetables in very minimum proportion."

At a subsequent meeting of the Society, held December 28, 1892, the discussion was resumed, with little additional data of interest. A note was contributed by Dr. Bovet at the end of the debate. He thinks that there are sufficient clinical facts to support both the extreme views advocated, and does not regard the dietetic treatment of hyperchlorydric dyspepsia as yet definitively and scientifically established. Personally, he dreads the large doses of alkalies prescribed by Huchard, and believes that they rather excite than allay the gastric secretion, and that they may in the end produce glandular atrophy. With this belief, he also finds Noyen in concord. He would substitute for bicarbonate of soda the chloride of calcium in small (five-grain) doses.

Bovet has in his own practice had good results in this form of dyspepsia with a diet consisting largely of raw-meat-pulps, and a small quantity of thoroughly cooked vegetables, pea soup or other farinaceous legumes. In intense cases of hyperchlorhydria, when chemical analysis reveals a proportion of HCl exceeding 2.50 per 1,000, an exclusive milk diet is better tolerated than any other; then, as the proportion of HCl diminishes, a diet of beef peptones or raw beef, with eggs, fish, stewed vegetables, etc., may gradually be ordered.

This kind of alimentation has in the experience of many other practitioners given satisfactory results.

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THE CONFERENCE AT WASHINGTON OF QUARANTINE OFFICIALS.

THE Conference of health officers from the Atlantic and Gulf ports which met last week in Washington, at the invitation of Surgeon-General Wyman of the United States Marine-Hospital Service, seems likely, as far as can be judged from what some of those who took part feel at liberty to report, to serve a very useful purpose. Seventeen health officers from the most important ports were present — among them it is a pleasure to include the health officer of the great port of New York — and some of the principal officers of the Marine-Hospital Service. The Conference lasted two whole days all the hours of which were devoted to serious work and an honest endeavor to reach a position from which conflicting views might be harmonized in a subsequent draft of uniform regulations for the general welfare, without unnecessary sacrifice of somewhat varied local interests. The paramount consideration unquestionably is, and we trust will now be recognized to be, the common public sanitary weal. It is certainly right, however, that in the attainment of this primary object, the interests of trade and commerce should not be allowed to suffer from unintelligent and ill-considered restrictions.

We were unable to speak favorably of the quarantine bill passed by the last Congress in its last days, under the title of an "Act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service." That act fell far short of what those most competent to judge from a medical stand-point had hoped for, perhaps, rather than expected. But defective and colorless as that act in many ways is, much may certainly be accomplished under it — or, for that matter, even without it — by an intelligent and moderately disinterested co-operation of federal and local officials. The first genuine promise of such co-operation comes to us from this conference of Thursday and Friday of last week; and we are glad to welcome any such indication that a common danger is awakening a common and uniform resistance. Other reassuring steps already taken are those which materially strengthen the line of defence on the other side of the Atlantic: the detail of United States medical officers of recognized fitness to our consulates at the chief European ports for purposes of inspection; and the recognition by the trans-Atlantic steamship lines, that, under existing conditions, their commercial interests and our sanitary interests are not antagonistic but practically the same and to be safeguarded by their honest enforcement of certain specified measures.

We await with some interest the reports from the recent conference of European representatives at Dresden, as well as the final rules to be promulgated by Surgeon-General Wyman as the result of the recent conference at Washington. The objects of the two conferences were similar, and both had delicate and difficult problems to deal with.

We see many reasons for reassurance in the present situation as far as cholera is concerned. We believe both Europe and the United States will be far better prepared than last year to deal with any situation which is likely to present itself. It is thought that the Dominion officials will co-operate with our own in their protection of the mouth of the St. Lawrence and in the control of the frontier between the two countries. Particular consideration is being given to the requirements for proper supervision of traffic between Cuba and the United States.

It now remains for our individual cities and towns to put and to keep their water-supplies and their overcrowded quarters in good order; and we may await with considerable composure anything which the return of warm weather has in store for us.

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MEDICAL NOTES.

BOSTON.

THE DEATH-RATE IN BOSTON still continues high. In the past week there were 246 deaths, making a rate of 27.2. Of these, 27 were from consumption and 49 from pneumonia; 49 were over sixty years of age, and seventy were under five; 190 of foreign parentage.

THE CHARITY CLUB HOSPITAL has sold the old building on Chester Park, Boston, and announces that the new hospital on Parker Hill will soon be opened.

CONTAGION AT THE BOSTON CITY HOSPITAL. — On account of a report that several attendants of the hospital had contracted disease in the contagious wards, a daily paper has published a statement of the superintendent saying that one of the house physicians had diphtheria, which he contracted while in attendance upon a bad case, and a nurse also contracted the disease from the same case. They both recovered. A nurse who had both scarlet fever and diphtheria at the same time died after a brief illness. Only one nurse has died within a year from an infectious disease contracted while on duty and no house officer has died. Dr. Rowe says, "It is true that we have had as patients in the contagious wards many physicians, medical students and professional nurses who came to us from outside of the hospital boundaries, as well as our own people. There are 14 hospitals in Boston, with a bed capacity of 1692 beds, of which Boston City Hospital has 512. No contagious diseases are admitted to any one of the 14 hospitals except this — consequently this is the only Boston hospital where the doctors and nurses are exposed to contagious diseases. Reports of this hospital for the last six years show that both the superintendent and trustees have put themselves on record as saying that wards for the treatment of contagious diseases should not be associated with the other wards of the general hospital, and the trustees have distinctly put the responsibility on the City Government. The City Government has responded to the appeal of the trustees and appropriated $271,000 for the building of a new hospital for the treatment of contagious diseases to be isolated from the other buildings. Contracts have already been made and the new buildings are being constructed as rapidly as possible."

IN THE MASSACHUSETTS LEGISLATURE. — The Committee on Public Health have reported a new draft of the bill relative to the sale of proprietary medicines or other compounds sold by druggists, so that the penalties for selling poisonous compounds shall not apply unless such sales are made after due notice by the State Board of Health that such compounds are injurious. The same committee have reported a bill to amend a law against "sweat shops" so that "no person, contractor, firm or corporation shall give to any person not holding said license any such garments or articles of wearing apparel intended for sale to be made in any private house or room as aforesaid." Also one providing that local boards of health are required to notify the State Board of Health in case of any other disease dangerous to the public health as they now do in case of smallpox.

NEW YORK.

ST. MARY'S HOSPITAL FOR CHILDREN. — About $7,000 was made for St. Mary's Hospital for Children at a concert given on the occasion of the opening of the magnificent new Hotel Waldorf, at Fifth Avenue and 33d Street. The authorities of the hospital are about to erect a new building on West 34th Street.

THE MORTALITY FOR THE PAST TWO WEEKS.— During the week ending March 11th, when the mortality was larger than it has been for a long time, out of a total number of 942 deaths, no less than 219 were due to pneumonia; and it is believed that a considerable proportion of the deaths were directly attributable to exposure to the inclement weather in Washington at the time of the inauguration. During the week ending March 18th the number of deaths reported in the city amounted to 1,100, (representing an annual death-rate of 30.60 per thousand of the population); which is the highest mortality under midsummer. Influenza has again appeared, and 11 deaths during the week were attributed to it. From pneumonia the mortality was extremely large, the fatal cases reaching 249.

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Miscellany.

DUTIES AND DANGERS OF THE DOCTOR'S LIFE.

THE dangers which await the physician in the daily discharge of his duty are rarely so conspicuously shown as in the instance of the late Dr. Strong, whose life and death are only too briefly noticed elsewhere in this number of the JOURNAL.

In the prime of life, possessed of a strong constitution and exemplary habits, with a knowledge of the causes of disease and of the means of obviating them, his life was sacrificed through his efforts to save that of his patient and friend.

An acute attack of peritonitis of probable appendicular origin, demanded an immediate laparotomy as the only chance of saving a life in the most extreme danger. It became Dr. Strong's duty to perform this operation for which his training and experience in abdominal surgery amply fitted him. The case proved to be one of unusual virulence and the operation not only failed to save the patient's life but led to the loss of that of the physician.

Within a little more than twenty-four hours after the laparotomy was done the initial symptoms of blood-poisoning appeared. Insidious at first, without evincing a special channel of infection, these symptoms rapidly increased in severity, and were soon characterized by a phlegmonous inflammation of the thigh and an acute nephritis. These lesions were scarcely made evident when the heart weakened; and death took place in a little more than five days from the onset of the attack. The blood and tissues proved to be thronged with bacteria.

Although Dr. Strong's friends had for some time noticed that his appearance was that of an overworked man, his condition was never such as to call for a serious warning that he might be rendering himself incapable of resisting acute disease. However busy he might find himself, he was always ready to give his aid as freely for charity's sake as for pecuniary reward, and never refused his services through fear that he might suffer in consequence.

A few conspicuous instances of this rare and ennobling sacrifice of life in the pursuit of duty have made illustrious the medical profession in this community as elsewhere. The name of Charles Pratt Strong will be enrolled among the medical martyrs with that of Horace Walter Adams, who also gave up his life in the fruitless effort to save that of his friend and patient, suffocating from diphtheria.

However beneficial antiseptics have proven in saving the lives of patients it must not be forgotten that the lives of physicians should also be protected. The chief thought of the physician is to save his patient; if the saving of his own life were equally prominent we might not be obliged to regret the death of such valuable members of the profession. Every physician should feel called upon to be much more mindful, than is usually the case, of his own risks in relieving the ills of others, and should be equally scrupulous in the care of himself as in the care of his patient.

It is unnecessary to say that Dr. Strong was a master of the art of asepsis; if he had spared himself more in his devotion to duty, he would but have given himself a like protection to that he would have urgently demanded for his patients. Should his death prove a warning to some it is an example for all.

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OBITUARY. — CHARLES PRATT STRONG, M.D.

Dr. Charles Pratt Strong was born in Springfield, Mass., December 19, 1855. He fitted at Exeter, and graduated from Harvard College in 1876. He at once entered the Harvard Medical School, and received the degree of M.D. in 1881, having also been house-officer at the Free Hospital for Women, and the Boston Lying-In Hospital, and surgical interne at the Massachusetts General Hospital.

After this exceptionally advantageous preparation for his work, he rose, without wealth or influential friends, in a little over ten years, to the front rank of the profession, and became one of the most successful practitioners of Boston.

At the time of his death he was assistant-surgeon at the Free Hospital for Women; physician to out-patients at the Massachusetts General Hospital; and assistant in gynæcology in the Medical Department of Harvard University. He was a member of the Massachusetts Medical Society, of the Boston Society for Medical Improvement, of the Boston Society for Medical Observation, of the Obstetrical Society of Boston, and of the American Gynæcological Society.

He died of acute septicæmia, on March 14, 1893, after an illness of less than five days' duration.

Dr. Strong began his professional career as a general practitioner. He had a special inclination to gynæcology and surgery, and to these branches his skill and energy were more and more directed. As a physician he combined rare judgment with infinite tact and patience. His sympathy and gentleness gave courage, and his decision and firmness gave strength to his patients. He had a winning personality, and a rare perception of the needs of the sick. He was untiring in his attempts to promote the comfort and health of those in his care. His devotion to his patients was reciprocated, and begot their admiration and love.

He had all the instincts of a surgeon. He was bold, skilful and progressive. He was likewise cautious and conservative, striving to accomplish the desired results by the least radical measures, but never hesitating when radical measures were essential.

His power of manipulation and delicacy of touch were remarkable. His advice and skill were much in demand by his medical brethren.

He was a careful student of medical literature, and his own papers were always clear and forceful, and written with a well-defined intention.

He contributed much to the advancement of gynæcology in the city, both by his methods and by his writings. He was an excellent teacher as well as a skilful operator. He was modest and refined, thoughtful of others, and a delightful companion. His life was simple and devoid of ostentation. The dominating influences of his life were his love of home and of his profession. It was these influences which led him to give of his strength so lavishly. The amount of charitable work which he accomplished at the hospitals with which he was connected, was very large. His entire time, from morning until night, often until late at night, was given to his patients, private and charitable. It was this immense burden of work which reduced his vital powers, and made him an easy victim to disease.

The attack of acute septicæmia of which he died, followed, after an interval of one day, an operation for septic peritonitis, which he performed upon a friend and patient; but it was not the result of carelessness, nor of any discoverable injury. Apparently the entering poison met no resistance; and almost before warning had been given, death came. So ends a young life, full of great promise, full of great accomplishments, all too soon, but as the result of an effort to save another's life.

A LIST OF DR. STRONG'S MEDICAL PAPERS.

An unusual obstetrical case. (Prolongation of pregnancy and large child; entire absence of Liquor amnii, interstitial and subserous fibroids, contracted pelvis combined with posterior position of the occiput, and non-rotation of the head.) Boston Med. and Surg. Jour., 1884, cx, 30.

Rectal disease of uterine origin. Boston Med. and Surg. Jour., 1886, cxiv, 151.

Dystocia caused by tonic annular contraction of the uterus. Boston Med. and Surg. Jour., 1887, cxvi, 543

Six cases of uterine displacements treated by shortening of the round ligaments, with remote results. Boston Med. and Surg. Jour., 1888, cxviii, 166.

The surgical treatment of backward displacement of the uterus. Boston Med. and Surg. Jour., 1889, cxxi, 381.

Cases illustrative of some of the more unusual forms of bladder diseases among women. Boston Med. and Surg. Jour., 1890, cxxiii, 53.

Amenorrhœa; clinical report of four cases successfully treated by galvanism. Boston Med. and Surg. Jour., 1891, cxxiv, 382.

Removal of the uterine appendages in a patient deformed by spinal curvature from caries of the vertebræ. Am. Jour. Obstet., New York, 1891, xxiv, 554.

Laparotomy, verifying the diagnosis of pelvic cellulitis. Boston Med. and Surg. Jour., 1891, cxxv, 32.

The relief of salpingitis by dilatation and drainage of the uterus. Boston Med. and Surg. Jour., 1892, cxxvi, 258, 266.

Cases of laparotomy presenting features of unusual interest. Boston Med. and Surg. Jour., 1892, cxxvi, 359, 367.

Cyst of the broad ligament. Boston Med. and Surg. Jour., 1892, cxxvi, 495.

Hyperæsthesia of the vaginal orifice a cause of reflex pelvic pain. Boston Med. and Surg. Jour., 1892, cxxvii, 496, 505.

Total extirpation of the uterus, improved method of treating the stump. Boston Med. and Surg. Jour., 1892, cxxvii, 520, 530.

Ectopic gestation. Boston Med. and Surg. Jour., 1892, cxxvii, 552.

The influence of morbid conditions of the uterine adnexa upon reflex phenomena. Boston Med. and Surg. Jour., 1893, cxxviii, 35.

Backward displacements of the uterus. Boston Med. and Surg. Jour., 1893, cxxviii, 80.

Disease and injuries to cervix uteri. Woods' Reference Handbook, Vol. vii, 473.

Endometritis. Woods' Reference Handbook, Vol. vii, p. 481.

METEOROLOGICAL RECORD,

For the week ending March 11, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Baro-meter.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	W.	[illegible]	9	F.	C.	
M.. 6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	10	[illegible]	C.	C.	
T.. 7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	W.	19	[illegible]	F.	C.	
W.. 8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	63	[illegible]	N.W.	S.W.	[illegible]	10	C.	O.	
T.. 9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	N.E.	[illegible]	[illegible]	R.	R.	1.21
F..10	[illegible]	[illegible]	[illegible]	[illegible]	81	[illegible]	[illegible]	N.E.	N.E.	24	24	O.	O.	0.05
S..11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	N.E.	5	[illegible]	R.	R.	
☞	[illegible]													1 26

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 11, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	942	330	[illegible]	[illegible]	1.32	4.95	2.42
Chicago	1,250,000	[illegible]	[illegible]	[illegible]	21.[illegible]	[illegible]	8.17	2.85
Philadelphia	1,092,168	[illegible]	166	[illegible]	18.[illegible]	—	7.48	1.54
Brooklyn	955,333	—	—	—	—	—	—	—
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	232	[illegible]	10.08	21.42	.42	3.78	2.56
Baltimore	[illegible]	—	—			—		—
Cincinnati	305,000	94	27	8.48	16.96	—	4.24	1.06
Cleveland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.67	5.34	—
Pittsburg	255,000	[illegible]	[illegible]	13.43	19.75	—	1.58	1.58
Milwaukee	234,440	[illegible]	[illegible]	[illegible]	[illegible]	3.06	6.12	6.12
W[illegible]	[illegible]	141	[illegible]	[illegible]	[illegible]	.71	2.84	—
Nashville	87,754	33	[illegible]	[illegible]	15.15	–	3.03	—
Charleston	[illegible]	[illegible]	[illegible]	5.26	10.52	2.63	—	—
Portland	[illegible]	21	5	14.[illegible]	14.[illegible]	—	9.52	—
Worcester	[illegible]	44	19	9.08	19.06	2.27	4.54	2.27
Lowell	[illegible]	46	18	[illegible]	[illegible]	4.34	—	—
Fall River	[illegible]	31	14	12.92	3.23	—	3.23	9.69
[illegible]	74,044	[illegible]	10	6.46	22 61	—	–	6.46
Lynn	[illegible]	18	11	18.88	33.33	—	5.55	—
Springfield	[illegible]	18	[illegible]	22.22	38.88	—	11.11	5.55
Lawrence	45,910		—	—	—	—	—	—
New Bedford	44,947	18	[illegible]	—	11.11	—	—	—
Holyoke	[illegible]	[illegible]	[illegible]	—	25.00	—	—	—
Brockton	32,783	[illegible]	1	14.28	28.56	—	14.28	—
Salem	31,495	[illegible]	[illegible]	7.69	15.38	—	7.69	—
Haverhill	30,065	11	1	—	27.27	—	–	—
Chelsea	29,479	[illegible]	3	7.69	30.76	—	—	—
Malden	27,252	4	[illegible]	—	50.00	—	—	—
[illegible]	[illegible]	—	—	—	—	—	—	—
Taunton	26,464	18	4	5.55	[illegible]	—	—	5.55
[illegible]	26,008	8	4	12.50	—	—	—	—
Fitchburg	25,444	[illegible]	2		11.11	—	—	—
Waltham	20,942	[illegible]	3	[illegible]	[illegible]	—	—	—
Quincy	18,669	[illegible]	[illegible]	[illegible]		–	–	—
Pittsfield	[illegible]	[illegible]	[illegible]	—	20.00	—	—	—
Northampton	15,684	[illegible]	1		—	—	—	—
Everett	14,745	4	2	[illegible]	—	—	—	—
[illegible]	14,031	4	1	25.00	—	—	—	—
A[illegible]	13,561	[illegible]	2	—	60.00		—	—

[illegible] under five years of age; 1,135 principal [illegible] pox, measles, diphtheria and croup, [illegible] erysipelas and fevers), 419, [illegible] diphtheria and croup [illegible] typhoid fever 42, whooping-cough 32, cerebro-spinal meningitis 26, measles 24, erysipelas 11, malarial fever 4, typhus fever 3, small-pox 2.

From typhoid fever Philadelphia 11, Pittsburgh 8, Chicago 7, New York 6, Boston, [illegible] Washington, Charleston, Port[illegible] [illegible] Newburyport and Hyde Park [illegible] New York 18, Philadelphia and Holyoke 2 each, Chicago, Lowell, Cincinnati, Milwaukee, Nashville and Brookline 1 each. From cerebro-spinal meningitis Chicago 11, New York 6, Philadelphia, Washington and Lynn 2 each, Milwaukee, Gloucester and Waltham 1 each. From measles New York and Chicago 7 each, Pittsburgh 5, Cincinnati and Lowell 2 each, Everett 1. From erysipelas New York and Boston 3 each, Chicago and Philadelphia 2 each, Quincy 1. From malarial fever New York 2, Cleveland and Hyde Park 1 each. From typhus fever New York 3. From small-pox New York and Springfield 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending March 4th, the death-rate was 20.8. Deaths reported 4,125; acute diseases of the respiratory organs (London) 385, whooping-cough 102, measles 98, diphtheria 61, diarrhœa 49, scarlet fever 44, fever 32, small-pox (London 5, Manchester 2, Nottingham, Liverpool, Salford, Halifax and Hull 1 each) 12.

The death-rates ranged from 12.7 in Leicester to 28.5 in Norwich; Birmingham 18.0, Bradford 16.9, Cardiff 23.8, Huddersfield 24.6, Hull 22.7, Leeds 24.7, Liverpool 24.4, London 20.8, Manchester 25.6, Newcastle-on-Tyne 18.5, Nottingham 15.4, Portsmouth 21.5, Sheffield 20.5, Sunderland 19.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 11, 1893, TO MARCH 17, 1893.

The extension of leave of absence on surgeon's certificate of disability granted MAJOR JOHN C. G. HAPPERSETT, surgeon, U. S. A., is further extended three months on account of sickness.

The leave of absence granted FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, U. S. A., is extended one month.

Leave of absence for one month, to take effect when his services can be spared by the post-commander, is granted CAPTAIN BLAIR D. TAYLOR, assistant surgeon, U. S. A.

Leave of absence for one month is granted CAPTAIN N. S. JARVIS, assistant surgeon, U. S. A., Fort Apache, Arizona.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, March 27th, at 8 o'clock.

Dr. C. P. Putnam: "A Small Epidemic of German Measles."

Dr. R. W. Lovett: "The Treatment of Functional Affections of the Spine (irritable spine)."

Dr. W. T. Councilman will exhibit pathological specimens.

JOHN T. BOWEN, M.D., *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, March 29th, at 8 o'clock, P. M.

Paper: "Parietal Disease of the Heart," Dr. W. W. Gannett. The discussion will be opened by Drs. Garland and Vickery.

"Acute Cerebro-Spinal Meningitis of Syphilitic Origin; Report of a Case, with Autopsy," W. N. Bullard, M.D.

Remarks by Drs. A. Post and F. Coggeshall.

F. C. SHATTUCK, M.D., *Chairman.*
HENRY JACKSON, M.D., *Secretary.*

BOSTON SOCIETY OF MEDICAL SCIENCES. — A regular meeting of this Society will be held at the Harvard Medical School, Tuesday, March 28, at 8 P. M.

Dr. W. N. Bullard will speak on "Electrocution."

Members of the profession cordially invited.

OTIS K. NEWELL, *Secretary.*

RECENT DEATHS.

ASA MILLET, M.D., M.M.S.S., of East Bridgewater, died March 21st, aged eighty years. He graduated from Brunswick Medical College in 1842.

BENJAMIN BALL, M.D., died in Paris, February 23d, aged fifty-eight years. He was born in England, but early in life became a resident of Paris, where he was a professor in the medical faculty, physician to different hospitals and a widely-known member of many societies.

FRANK H. INGRAM, M D., died March 16th, aged thirty-four years. He graduated from Bellevue Hospital Medical College in 1883. He was at one time assistant superintendent at the asylum on Blackwell's Island, and also lecturer on diseases of the nervous system at the Polyclinic. At the time of his death he was attending physician to the Hospital for Nervous Diseases and President of the Board of Pathologists of the City Asylums for the Insane.

LAURENCE JOHNSON, M D., of New York City, died March 18th, aged forty-eight years. He graduated from Bellevue Medical College in 1868. He was president of the Medical Society of the County of New York, a manager of the Physicians' Mutual Aid Association, a member of the New York Academy of Medicine, of which he was at one time librarian and at the time of his death a trustee. He was also a member of the Academy of Sciences and of the Torrey Botanical Club. He had for several years been lecturer on medical botany and clinical medicine in the University of the City of New York.

Original Articles.

ON CERTAIN PECULIARITIES IN THE REACTIONS OF THE MUSCULO-SPIRAL NERVE TO ELECTRICAL CURRENTS; AND THEIR PRACTICAL SIGNIFICANCE.

BY JAMES J. PUTNAM, M.D.,
Instructor in Diseases of the Nervous System, Harvard Medical School.

UNDER the title given in the foot-note,[1] some interesting observations were described by Dr. Karl Gumpertz of Berlin, the essential and original portion of which may be summarized as follows:

It has long been known that there is a period in the course of many forms of neuritis, and especially that due to lead-poisoning, when a careful electrical examination of the non-paralyzed nerves and muscles will show, here and there, changes in the electrical irritability indicating that they are actually the seat of degenerative processes.

It is generally conceded that this fact was first pointed out by Erb, as regards lead-poisoning, but his observations had reference more especially to cases where the typical paralysis of the extensors of the forearm was already present, the pre-paralytic changes in irritability being noticed in other muscles, or parts of muscles, which, it was justly assumed, stood in danger of further trouble.

Dr. Gumpertz now asserts that it is possible to make the anticipatory diagnosis of lead-paralysis, and paralysis due to other forms of neuritis, even in cases where the typical extensor paralysis is absent, and where the electrical reaction of the muscles suspected of disease is shown by the *direct[2] examination* to be practically normal.

The observations which he made appear to have been confined to the reactions of the musculo-spiral (radial) nerve and the muscles which it supplies, and they clearly show the highly instructive fact that there was a marked difference, in the cases tested, between the results obtained by excitation with the positive pole, or anode, of the faradic current, and those obtained by excitation with the faradic kathode; and a well-marked but less striking difference between the effects of the galvanic anode closure and the kathode closure.

It was found to be, in fact, impossible, with the current strength employed, to obtain any response when the faradic anode rested on the nerve, although it is assumed and has been usually found that the physiological difference in exciting power between the two poles of the faradic battery, while well-marked, is slight and commonly unimportant.

Very soon after Dr. Gumpertz's paper came to my notice, an excellent opportunity presented itself for testing the correctness of his observations, the case being one of abdominal colic of long standing, in a painter, who showed no other sign of lead paralysis.

I was much impressed, at first, to find his statements corroborated in every particular. Even powerful and painful currents failed to cause a contraction of the extensors of the fingers, when the anode of the faradic battery was applied to the musculo-spiral nerve, though the response to the faradic kathode, and that to the "direct" excitation of the extensor muscles were apparently normal. Also, careful and repeated tests with the galvanic current fully confirmed Dr. Gumpertz observations in respect to the galvanic anode and kathode.

I made the test afterwards in other cases, both of lead-poisoning, and other forms of neuritis, and constantly found it verified — so constantly in fact, that I was led to try the same test with normal subjects, and to my surprise, *I found that almost, if not absolutely, the same results were obtained with a certain proportion of them.*

If I am right, Dr. Gumpertz's test shows, not so much the pre-paralytic stage of neuritis, as an interesting physiological peculiarity of the musculo-spiral nerve.

It may be that disease can be shown to bring out this peculiarity in a more striking form, for I did not find the same degree of insensitiveness to the faradic anode in all cases. Indeed, the examination of a case seen recently, where there was reason to diagnosticate brachial neuritis, although the extensors were not paralyzed, showed a loss of irritability of the musculo-spiral to the kathode as well as the anode of the faradic battery.

All the tests were made with an ordinary sliding induction-coil, but, as a matter of control, I repeated some of them with an apparatus especially designed to give only "opening currents," and also by using single opening shocks made by interrupting the primary current with the finger.

It may well be that these peculiarities in the irritability of the musculo-spiral nerve to which the observations of Gumpertz have given rise will lead to a better explanation of the sensitiveness of this nerve to various toxic agents. It is certainly next in order to examine the other nerves of the body on the same plan, and this I propose to do as soon as possible.

One is also reminded of the curious differences in irritability of the recurrent laryngeal nerve, under ether, and to the action of strong and weak currents, respectively, as observed by Bowditch and Hooper and others.

In order to give some idea of the frequency with which the presumably normal musculo-spiral nerve fails to respond to the faradic anode, I will say that this was observed with three out of seven apparently healthy persons (physicians and students), while with some of the others the nerve showed a diminished reaction. Of course it may be that these three persons were really not healthy, and that the reaction in question gave a delicate indication of the fact. But there was no other sign of neuritis, and the failure of the reaction recalled to my mind that at various times in the past I had vainly sought to obtain a response from electrical stimulation of the musculo-spiral nerve with different patients, without having been able to account for the fact.

Since the earlier part of this paper was written I have had the opportunity to examine another interesting case, that of a young man with a history of epileptiform spasms, confined to the left arm, which had recurred occasionally since childhood. The arm was perfectly mobile and useful, but was about three-quarters of an inch smaller than the right, both above and below the elbow. Faradic stimulation of the musculo-spiral nerve of that side, even with relatively weak currents, brought out a prompt response, and the reaction to the faradic anode was but little less active than that to the kathode. The musculo-spiral of the right arm also reacted to both the faradic anode and kathode, but the current strength necessary for the former reaction was greater than in the case of the left arm.

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[1] Ueber Anomalien der in [illegible] und ihre Beziehung zur [illegible] (Berlin, Deutsche med. Wochenschrift, [illegible], page [illegible].

[2] That is, by applying the testing [illegible] of the muscles themselves. In the indirect [illegible] ing electrode is applied to the nerve before it enters the muscle.

It also appears to me worth while to indicate a little more at length the character of the case referred to in the text, where the nerve failed to react either to the anode or the kathode.

The patient was a middle-aged man, who presented himself at the hospital with great impairment of sensibility and motility of the right arm, due obviously to pressure upon the brachial nerves by a hard tumor, which could be felt above the clavicle. Its exact nature had not been determined.

No corresponding tumor could be made out on the left side, and the movements of the left arm were free; but subjective sensory symptoms had of late been felt, indicating that some influence was setting up a neuritis on that side also. It was the musculo-spiral of this side which, as stated, failed to respond to either faradic pole.

I have also examined a case of hereditary tremor in a muscular young man of twenty, and found there also an absence of the faradic anode response of the musculo-spiral on both sides.

I am now trying other tests to determine whether, in the cases where this failure is met with, the extensor apparatus is functionally weak. The best test that I have found, so far, is to see how long the carpus and fingers can be held in strong over-extension, with the fingers spread. This is a method that I have been in the habit of using for many years past, and I have found that patients, and persons in apparent health, differ greatly in their power of sustaining the position indicated.

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CASES OF ABNORMALITIES OF THE FEMALE GENITALS.[1]

BY CHARLES W. TOWNSEND, M.D.

THESE three cases of abnormalities of the female genitals were seen during my service in the out-patient department of the Massachusetts General Hospital and seem to be of sufficient interest to put on record.

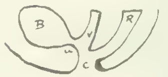
CASE I. Congenital opening of the rectum into the vagina.

N. L., twenty-one years of age, single, came to the hospital for the diagnosis of pregnancy, not having menstruated for two months. She had never been pregnant before. She mentioned incidently that she was troubled with diarrhœa; but on questioning this was found to be in reality an imperfect power in retaining the fæces, amounting almost to incontinence, which had existed for seven months. The patient was well nourished and apparently well developed; but on examination it was found that the rectum opened within the vulva, just inside the posterior commissure. There was scarcely any sphincter power, and the finger in the rectum was separated from the finger in the vagina by but a thin partition. The line of skin back of the vulva was unbroken, no sign of depression appearing where the anus is normally situated.

On questioning, it was found that the incontinence of fæces began immediately after the first sexual connection seven months before; and it seems probable that the dilatation of the vulva at that time ruptured some of the fibres which served for an anal sphincter.

The diagnosis of pregnancy was made; and it was learned that she gave birth to twins at the seventh month under the care of a midwife. The labor was an easy one: but I was unable to find the patient and to learn what lacerations she sustained.

Cases, like this are rare, but are seen from time to time. Pooley has collected 38 of them. They are sometimes spoken of by the name of *atresia ani vaginalis*, a term which should not be used, as it suggests an abnormal development, while in reality the trouble is due to an arrest of development, as is easily seen by a reference to embryology and comparative anatomy. Prior to the middle of the third month there is a common cloaca for the intestinal and uro-genital outlets, as is the case in reptiles and birds, about the middle of the third month the division is made between the anal and uro-genital outlets. In the case in point this division did not take place, and we find what is really a persistent cloaca. Dr. Theophilus Parvin[2] reports a case of this sort, where by successive operations he accomplished what nature failed to do.



The accompanying diagram from Schroeder shows at a glance the arrangement of parts in a case of persistent cloaca: B, bladder; U, urethra; V, vagina; C, cloaca; R, rectum.

CASE II. Apparent absence of uterus and vagina.

A. C., nineteen years old, single, came to the hospital to find out why she had never menstruated. With the exception of being tired lately, and having headaches, her general health had been good. She had never experienced any monthly molimina. The patient was a rather tall and apparently well-developed woman. Her breasts were of fair size, the nipples rather small with slightly pigmented areolæ. The external genitals were normal in appearance with the exception that the left labium minorum was large and pigmented. There was the normal amount of hair on the mons veneris. The hymen was entirely imperforate, no hole being found anywhere, even with the finest probe. There was no bulging of the hymen or enlargement of the abdomen as in cases of retained menstrual flow. On examination by rectum there was no trace of vagina, uterus or appendages to be felt. Dr. Conant kindly saw the case with me, and confirmed my diagnosis.

I have called this a case of *apparent* absence of uterus and vagina, as these organs may have been present in so rudimentary a condition as to escape observation. Garrigues says[3] "The total absence of the womb can only be proved by a careful post-mortem examination, and even then the observer is liable to be led astray."

CASE III. Hermaphroditism or pseudo-hermaphroditism.

X. Y., came to the hospital in feminine costume for some slight bronchial trouble; but, after preparation for examination of the chest, I was so struck by the masculine appearance that I obtained a more complete history, and made a more extended examination, and I have been able to confirm this by a subsequent examination.

The patient is thirty-five years old, was born in Massachusetts, and is a domestic by occupation, doing general housework. The father and mother were born in Ireland, and there are four brothers and one sister living, the brothers being strong and well, the sister delicate; another sister died when a baby.

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[1] Read before the Obstetrical Society of Boston January 11, 1893.

[2] Philadelphia Medical News, July 16, 1892, p. 69.

[3] American System of Gynæcology.

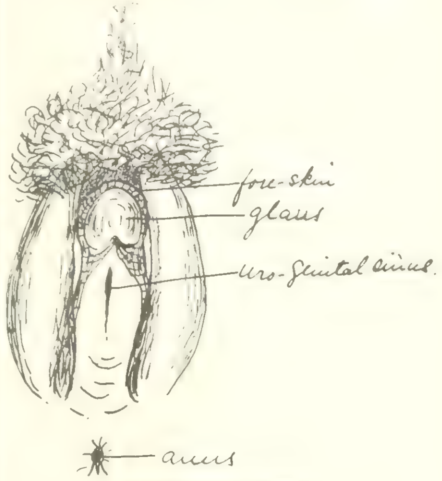
The menstrual history of the patient, if such it can be called, is as follows: When twenty-nine years old, for the first time there was a slight discharge of blood from the genitals, only enough to slightly stain the underclothing and lasting for a day. Again, about a month later, a similar discharge occurred. Twice after this, at irregular intervals, the same thing happened and occasionally a drop or two of blood would come when straining at stool. There has been no blood seen for two years, except following the first examination, when a few drops of blood appeared. With two or three of the bloody discharges there was backache, experienced for the day.

The patient has never cared for the society of men, and states that there have been no sexual desires for either sex. At the age of twenty-two masturbation was practised for a year, the patient having been told that it would bring on menstruation. There were slimy discharges at the time of the orgasm. The general health of the patient has been good like the brothers'; but unlike that of the sister.

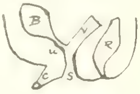
The patient is four feet ten and a half inches high, strongly built, with broad shoulders and moderately broad hips. The voice is noticeably deep in pitch, and there was a considerable growth of hair on the face, which has been carefully removed from time to time by a paste. The chest is large and entirely masculine in build, thickly covered with black hair. The nipples are small, exactly like those of a man; and there is no mammary glandular tissue. The back, arms and legs have also an abundant growth of hair; and the muscular system is well developed, and not padded with fat as in the female. The abdomen showed the median line of hair extending up from the mons veneris, so characteristic of the male sex. The scalp is beginning to grow bald, there being a considerable thinning on top with a deep recession on either side above the forehead. In early life the hair was plentiful and long. It is interesting to note here that the mother had a good head of hair; the father was bald. One of the brothers has particularly hairy arms and legs.

The external genitals consist of a clitoris or penis an inch and three-eighths long in the flaccid state, measured on the upper surface, with a glans notched on the lower surface as large as the end of the middle finger. The prepuce only partly covers the glans, but can either be retracted so as to expose the corona, on drawn out so as to conceal the glans. The prepuce is continued down into what appears to be the labia minora, offshoots extending up to the glans to form the frenum. On either side are the labia majora or the two sides of a cleft scrotum devoid of testicles. Below and behind this clitoris or penis, is an opening of a canal which admits for a short distance the little finger. There is a slight constricting ring a short distance from the outlet. With a silver catheter in the canal and the finger in the rectum it was found that this canal leads up to a small uterus. The urethra evidently opened somewhere in the course of the canal. No ovaries or testicles could be felt. Dr. Scudder kindly saw the case with me at the hospital and confirmed my examination. I regret that the extreme modesty of this individual prevented my showing the case to others.

The patient gave the history of the descent of a "bunch" part way into the right groin some years before, but this had disappeared. This, of course, suggests the descent of a testicle, the prolapse of an ovary into the inguinal canal being very rare. A reference to embryology explains this queer state of things as regards the external genitals, but does not give us a clew to the sex of the individual. The accompanying diagram from Schroeder shows this to be a case of persistent sinus uro-genitalis: B, bladder; U, urethra; V, vagina; S, sinus uro-genitalis; R, rectum; C, penis or hypertrophied clitoris.



External Genitals in Case III.



The small canal behind the enlarged clitoris or small penis is in our case, neither vagina nor urethra, but the embryonic condition of the vestibule or sinus uro-genitalis. While the cloaca is divided into anal and uro-genital canals by the middle of the third month of fœtal life, it is not until the sixth month that the sinus uro-genitalis dwindles down into the vestibule into which the urethra opens.

A reference to the literature of this curious subject shows that many so-called hermaphrodites are males with diminutive hypospadiac penis and cleft scrotum with undescended testicles. The penis being nearly invisible and the scrotum exactly resembling the labia majora, it is natural enough that these individuals should be brought up as girls. In some of these cases male characteristics do not appear until a later date. Thus Willard described a case that had lived as a female for twenty-five years with cleft non-testes bearing scrotum, as in the present case; but at the age of forty the testicles descended into the scrotum, a beard appeared, and after donning male attire he married a woman. A similar case is that of the well-known Catharine or Carl Hohmman, although the existence of ovaries in this case, as well as testicles, is asserted by some. On the other hand, females with much enlarged clitorises are sometimes erroneously supposed to be males.

In order to prove a case of true hermaphroditism the essential elements of the two sexes, namely, ova and spermatozoa in ovaries and testicles must, of course, be present. Of these we have no knowledge in the present case. The external genitals might belong to either sex, a cleft scrotum with undescended testicles and an undeveloped penis in the male, or a much-developed clitoris and labia majora in the female. The existence of a small uterus inclines the balance towards the female side.

I have placed in two parallel columns the characteristics of the two sexes, as found in this individual. It would perhaps be impossible to tell surely except by a careful post-mortem examination whether this individual is a man or a woman or combines the two sexes as a true hermaphrodite.

[illegible]	*Female Characteristics.*
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	Uterus.
[illegible]	[illegible] or [illegible], with [illegible].
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	

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SCOLIOSIS: ITS MOST RECENT MODES OF TREATMENT BY MECHANICO-THERAPEUTICS AND BY CORSETS.[1]

BY [illegible], M.D.,
Medical Director at Bryn Mawr School, Baltimore.

OF all spinal deformities, lateral curvatures are most common. Almost every case of Pott's disease develops a secondary lateral curve due to muscular spasm.

True scoliosis is very easily distinguished from a lateral curve in Pott's disease by the rigidity of the spine and the progress of the disease and the pain in the latter, even when the kyphotic hump is not marked.

Drachmann, in Denmark, in 1884, found scoliosis in one-third per cent. of the school children, and thirty-three per cent. of the patients treated at the Orthopædic Hospital in London were scoliotics, mid-dorsal right convexity being most common.

The most probable first cause of scoliosis is posture without necessarily any morbid anatomy.[2] After a time the intervertebral discs retain the wedge shape which the slight sideways bend and twist have forced upon them. The anterior and posterior common ligaments change like white fibrous tissue elsewhere; they atrophy and become thin if constantly stretched: thicken and shorten if continuously relaxed as on the concave side. After a time these ligaments glide along the concave edge of the column and aid in bending the spine, as in other joint contractures.

A simple marked lateral curve of the spinal column is impossible without a rotation of the vertebræ which throws the ribs out of position, causing the prominence of the shoulder and scapula, the flat chest, the difference in size and position of the breasts and the lumbar fulness. Owing to their anatomical position there can be very little sideways yielding of the vertebræ by any pressure from above. Some of the Germans think that there is an abnormal ossification of the spinal ends of the ribs which causes the change in the shaping of the thorax, but dissecting-tables have not proven this theory.

Whatever may be the first cause, the results are that muscles, ligaments and bones become altered in shape and position; the length of time required either to permanently establish a scoliosis or to cure one depends entirely upon the methods employed and on the age and condition of the patient.

The prognosis without treatment is poor. If the nutrition of the patient improves, and ossification of the vertebræ be about completed, the hope is for slight amelioration or for a stationary period.

Prophylactic measures are very important. School-rooms should receive attention from the health officials, not only in regard to their ventilation, but as to desks and seats. We have anthropometric statistics to show the average height of children of all ages, both sitting and standing, so that desks and chairs can be generally graded, leaving room for change in case of over- or under-developed children. The chair should be movable, so that it could be pushed as near the desk as necessary and fastened in place. The top of the desk should be the height of the child's elbow when sitting. The back of the chair should be high and fitted to the physiological curves of the spine. And the children should be watched that they sit squarely in the seats. High pillows in bed should be done away with; they cause round shoulders, and may start or exaggerate a scoliosis.

The causes removed, the weak supports of the spinal column must be strengthened, and the chest and back held in as normal position as possible.

Mechanico-therapeutics and gymnastics, judiciously given, are the most effective means of curing scoliosis. Almost every orthopædist has his special hobby about this treatment. Lorenz, of Vienna, lays much stress upon increasing the flexibility and backward movement of the chest and enlarging the chest expansion. A new Journal of Orthopædics has recently been published in Stuttgart, under the most noted surgeons and orthopædists of Europe. In the first number of this journal, Dr. Lorenz has modified one of Beely's apparatus in order to suspend, fix, and at the same time exercise the muscles of the spinal column in such a way as to pull it into an almost opposite sided convexity. The patient is hung by head and hands from a wooden frame. The pelvis is held in a vice. From a pin near the base of the frame, on the right, an elastic band starts and winds in a spiral around the body to the left shoulder, and is fastened by a pin to the left side of the frame just above the left shoulder. A second band winds from a point at the lower left part of the frame around the body once, and is attached to the same left side of the frame above but behind the left shoulder. In this way the body above the pelvis is drawn away from its right dorsal convexity to a hyper-corrected left-sided curve. In mild cases, only the one spiral is needed; and in cases where a corset is to be worn, a cast of the body is taken in this position. Dr. Lorenz insists upon a careful distinction and treatment of the primary curve without paying special attention to the secondary or compensatory curve. Dr. Lorenz also has a cushioned frame made for the patient, which can be worn at home or in bed. It is fitted with the heavy elastic bands winding in a spiral, on the principle of the former fixed machine, only lacking the suspensary apparatus.

Both of these apparatus must be used in conjunction with proper gymnastic exercises for active muscular action.

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[1] Read before the Clinical Society of Baltimore, May 20, 1892.

[2] See [illegible], Braithwaite's Retrospect, 1880.

Dr. Hoffa, of Würtzburg, had an idea that too great stress had been laid on correcting the spinal deformity, and he invented an apparatus which works against the projecting ribs. He takes an outline of the chest walls with a soft lead cyrtometer, notes the long and short diameters with mathematical precision, and then directs his force in such a way as to overcome the dissimilitude of the two sides.

Into a strong high frame is made a lighter four-sided frame with a vice for holding the hips firm. The patient stands in this frame, partly suspended by a head yoke. At the level of the greatest deformity of the chest is adjusted a steel girdle, hinged, within a strong iron ellipse through which powerful screws pass to touch the steel girdle, and to the inner extremities of which screws three heavy pads are fastened.

The patient stands in the apparatus fastened by the pelvic band and chest-girdle. Her hands are placed at varying heights on the frame. The two chest-pads are then screwed forcibly against the prominent bulging ribs in the proper direction to lessen the long diagonal, and the third pad pushes upward and backward against the low shoulder. At first the patient can only stand in this machine for a few minutes, but gradually she can comfortably remain for fifteen minutes each time.

This apparatus is somewhat like one of the Zander orthopædic apparatuses in principle. Zander institutes are found in all the principal watering-places of Europe; and there is one Mechanico-Therapeutic Institute in America, in charge of Dr. Wischnewetzky of New York. The New York institute is much more luxuriously fitted up than any of the others, and treatment by means of Zander machines there costs as much as to go to Europe and live in Baden-Baden, for instance, to be treated at the institute under Dr. Heiligenthal. There are about eighty Zander machines working entirely on the lever principle, adapted for the cure of all sorts of diseases, and for the exercise of all the joints and muscles of the body. They are divided into three classes:

(1) Active machines, which more than take the place of gymnastics for a sick or deformed patient, because of their accuracy of adjustment.

(2) Passive machines, which give all kinds of massage with more regularity and precision than any human masseur could do.

(3) Orthopædic machines, which combine the other two, and which are arranged to exert pressure where it is most needed.

At the Woman's College, and at the Bryn Mawr School in Baltimore there are partial sets of Zander machines. The Johns Hopkins, Harvard, and the University of Pennsylvania have all obtained permission to open Zander institutes where mechanico-therapeutics can be taught, and the value of the machines demonstrated.

When a case of spinal deformity enters a Zander institute for treatment, the physician in charge takes a most careful measurement of the back and chest in the measuring machines.

To obtain a diagram of the back, the patient stands in the machine. Her feet, hips, and head, are fixed in vices; her hands hold a firm bar above her head. By various scales and indicators the deviation of head to right or left, the heights of the shoulders, the deviation of the spinal column, the outline of chest walls, and the anterio-posterior curve of the back are all taken. This is easily transferred to a paper, and a diagram made which is both accurate and simple.

Chest measurements are taken in a machine which involves the principle of the instrument for measuring men's heads for hats. This is adjusted to any height, preferably the point of greatest deformity. Charts are easily made, and length of diagonals and comparisons greatly simplified.

After being measured, the patient is given a carefully prepared prescription for machines, weights and number of movements. Every exercise is done under strict supervision; from time to time changes are made, as indicated by increasing strength and decreasing deformity in the case.

Among the orthopædic machines invented by Dr. Zander, the simplest is a high-backed chair with wedge-shaped seat inclining to the back. The patient sits sideways on this seat to obliterate the lumbar curvature, pressing a pad against the axilla of the low shoulder; with the opposite arm she grasps a round on the upper part of the chair-back, thus actively aiding in overcoming the dorsal curvature.

Another machine combines the wedge-shaped seat and overhead pulleys of varying heights for making active arm exercises. All of these pulleys are merely continuations of levers whose weights are carefully arranged for each case. A machine which I have used with great benefit at the Bryn Mawr School consists of an upright frame to which is attached a horizontal board held in position by a quarter-circle, and which can thus be inclined at any angle of the arc. The stationary end of this board holds a pad which is to be pressed against the convexity of the spine. The head of the patient rests on a pillow, and her free hand grasps a rack beyond her head, from which she hangs partially and stretches the spine into shape. Suppose, for instance, that the patient has a right dorsal scoliosis. She lies on this inclined plane on her right side, and extends her left arm to the rack. In this position she may lie for five minutes, three times during her hour at the institute.

In Dr. Zander's more elaborate machines which combine stretching, pulling, hanging and pressure, there are kidney-shaped pads which press in the direction desired against the ribs, and with more or less force according to the weight used. In these machines lumbar curves are effaced better than by any other means. The pelvis can be held at any angle, the patient hangs against an inclined plane by her head alone or head and axillæ; and while the effect may be the same as from Dr. Hoffa's machine, this of Zander's is more easily adjusted and is less tiring to the patient.

Dr. Zander's treatment produces most wonderful results. In his own institute in Stockholm he shows old scolioses where the deviation of the spinal column at first measurement was four centimetres and after ten months' treatment daily or twice a day the deviation was ten millimetres. Case after case as good as this is reported from other Zander institutes; and statistics taken in the Zander measuring machines can be relied on for accuracy.

There is no use in trying school gymnastics or special gymnastics for the cure of scoliosis under a teacher who understands imperfectly the mechanism of spinal rotation, or who is too inefficient to pay correct attention to each individual case. Moreover, few gymnasia are equipped with any special apparatus like the Zander, Hoffa or Lorenz machines (the Woman's College and Bryn Mawr School of Baltimore being the only ones known to me).

Through the kindness of some of the physicians of the city and of the Johns Hopkins Dispensary, several cases of scoliosis have been sent to me for treatment. The results, as compared with the condition previous to treatment, are diagramed; and it gives me pleasure to present a few of them.

Case I. Agnes M., age fourteen years. Parents strong and healthy; one sister delicate. Child was always sickly and had a weak back, but was sent to school very early, where she sat badly. Her condition November 1st was right dorsal scoliosis, with left lumbar compensatory curve. She spent one hour a day in the Bryn Mawr Gymnasium, working faithfully in the Zander machines, and doing some hanging, bending and swinging from other apparatus. Her seat at school was changed. She slept without a pillow, carried her books in a strap to school; and the result in March you see indicated by the green line in her chart. May 1st, the improvement is indicated by the red line. You see the spinal curve is merely a slight C-shaped dorsal; the shoulders, hips and chest walls are more nearly symmetrical.

Case II. Gertrude H., age fifteen years, an orphan. Fell down stairs when four years old and hurt her back, but curve was not noticed until after a fall from a bicycle some two years ago. Treatment was begun in October; but she came very irregularly to the gymnasium, and carried out none of the instructions for her home-life and exercise. There is improvement in the case; but I hope soon to put her into a woven wire corset, to be worn in the intervals of treatment.

Case III. Bessie L., age seventeen years. German, sewing-girl. Had done sewing and heavy housework for six years. Did not notice deformity until she had pains in her back and sides every evening. Under treatment nine months by Zander machines, electricity and shoulder-straps. Completely cured.

Case IV. Gerty C. Family thinks that her curvature was caused by lying on her side for two months during typhoid fever. She had a fall from roller skates soon after she recovered. Was under treatment for six months, and greatly benefited.

London surgeons are using very simple apparatus in the treatment of scoliosis. Dr. Barwell [3] uses belts, hooks, straps and loops from the wall. These he fastens on to the patient in such a way as to obliterate the pathological curves of her spine, pulling her and twisting her in the right directions. In every case which he reported the spinal column was lengthened one or one and a half inches, and most cases were cured within thirteen months; but the length of the treatment depends on the thickness of the ligaments and the amount of muscle and ligament contraction.

Dr. Fleming, of Glasgow,[4] uses extension in bed for most cases. He has a Sayre's head stall, to which is attached a strong elastic cord, six inches or one foot long. This is tied at its free end to the head of the bed. A broad towel is pinned tightly around the pelvis, to which is fastened a cord of a pulley and weight, passing over the foot of the bed. In this way he gets extension in bed of the whole spinal column. The patient may turn gently without relaxing the extension. Massage and electricity are used during the extension, and some light-weight jacket is worn when the patient gets out of bed. He reports improvement, more or less lasting, after six weeks.

Dr. Judson, of New York, puts his patient to bed in such a position as to cause an artificial lordosis in lumbar and dorsal regions. He does this by partial suspension from the head over a curved surface or air pillow. With regard to braces he says: "A score of bones with two or three physiological and pathological curves, rotated in two or three directions, what have we to brace against!"

Plaster jackets are seldom used now unless in a case of desperate poverty where there is need of immediate support for carious vertebræ. Any gain in extension of the spine is soon lost; the muscles are weakened; the jacket does not fit perfectly at all times; and if removable for the sake of cleanliness, it is seldom properly re-applied. Felt jackets have the same fault.

Dr. Taylor,[5] of New York, uses a corset depending upon anterio-posterior leverage. He believes that no patient is too old or too deformed to be benefited by treatment, but the treatment should be very carefully carried out by the orthopædist himself. It seems to me that Dr. Taylor's lever braces must be heavy, and if by chance they should be badly adjusted they might have a harmful influence.

Dr. Roberts,[6] of New York, invented a ***woven wire*** corset upon anatomico-mechanical principles. The wire is woven by hand over a plaster form or cast of the body. Its meshes afford a most perfect ventilation, and combine permanency of contour with elasticity and support.

The meshes expand and contract with inspiration and expiration. The linear stiffness of the corset and its flexibility make it a more efficient support than any of the rigid jackets. There is neither undue compression of the chest at one time nor a want of fitness at another. It is light in weight, strong, and fufils the mathematical requirements which govern the movements of the human trunk. The cost of this corset is its great objection.

The corset most worn abroad is made of thin wood or paper. Dr. Phelps,[7] of New York, has imported from Vienna the proper kind of spruce timber and is using corsets of wood or paper in his treatment entirely. The Vienna spruce shaves thinner, is tougher and glues more firmly than the American spruce. A Sayre plaster-jacket is fitted to the patient; and from this a cast is made, over which the wood is placed in strips, moulded and glued. This is then strengthened wherever necessary, perforated, trimmed and shellacked, making when finished a corset weighing a pound or a pound and a half, which is very comfortable and durable.

Orthopædic apparatus, as a whole, should not be left as much as it is to the pleasure of the manufacturer. The cost would be diminished by making bolts, braces, pads, buckles, straps and finishings in all sizes and great quantities by machinery, as clothes are made. Then the orthopædist could indicate by prescription the what and how and where of his instrument; broken straps could be easily renewed, more patients could be properly treated, and many a cutting operation would be avoided.

It is evident that a scientific knowledge of mechanico-therapeutics is absolutely necessary to the orthopædist. A curved spine seldom or never cures itself. Even the mildest cases should be put under careful treatment, and the friends of the patient should never be turned off with the idea that the case is unimportant.

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[3] Barwell: Loc. cit.

[4] Spinal Curvatures, Braithwaite, vol. xcvii.

[5] American Orthopædic Association, September 23, 1891.

[6] International Journal of Surgery and Antiseptics, October, 1888.

[7] Medical Record, January 9, 1892.

Corsets alone cannot cure a scoliosis, nor can rest in bed, nor school gymnastics; but a skilful combination of these, plus massage and electricity in some cases, and the Zander exercises, where they or their equivalents are obtainable, will cause a cure in almost hopelessly stubborn cases. An amelioration can be made in every case by prolonged and scientific care.

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Clinical Department.

A CASE OF NEURALGIA.

BY S. G. WEBBER, M.D., BOSTON.

THE following case is of interest as one of acute neuralgia of the face terminating favorably. At the time I was treating him I thought it was due to syphilis; I still think that was the probable cause, though there was no history of a hard chancre. The patient was a very large, strong man, and seemed as though he had had good health before this attack of neuralgia. It is of special interest to notice the large amount of medicine he took. The doses were given only while the pain continued; they were not pushed beyond the necessity of the case. The orders were to stop the medicine when the pain ceased. The aconitia was in the form of small pills, as put up by one of the houses who put up such drugs, whose remedies I have given in other cases with entire satisfaction; and there is no reason to suppose that in this case they were not as good as in other cases.

The lesson to be drawn from this case is not that we can give large doses in every case of neuralgia; but that when the pain is not relieved by ordinary doses, we are justified in increasing the dose or the frequency of its administration until we obtain the desired relief or the physiological effect is fully obtained.

In this case I believe that without the heroic dosing relief would not have been obtained. I gave more than I otherwise should have, because I thought the neuralgia was the indication of commencing syphilitic changes which it was desirable to check at once before new-formed tissue had become too firmly organized to remove.

Another point of interest is that before the neuralgia he had been subject to attacks of asthma. While suffering from the pain in the face there was no asthma; but that returned after the pain had ceased.

Mr. —— was seen in 1885. He had a sunstroke about twenty years before I saw him. Once he had an abscess in the groin, but does not know that he ever had syphilis. He had gonorrhœa twice, some time after the sunstroke, he does not know just when; his hair fell out in spots. About three years ago he had pain in the right side of his face, at times severe, would last a few months almost continuously. He had had two stumps of teeth out, and had had the bone scraped without relief to the pain. He could not take morphia. He had taken much chloral. The paroxysms of pain came about every five minutes; were very severe. At times he was almost wild with the pain; he could not keep still; he seized the side of his face, and rolled about and groaned; every motion showed extreme agony while the pain lasted.

When I first saw him I prescribed sulphate of quinine, five grains every hour, and one two-hundredth of a grain of aconitia every two hours unless the lips or tongue tingled. I saw him again in the evening when the pain was still as bad as in the morning. The pain radiated over the whole right side of the face. I gave him a subcutaneous injection of four minims of a four per cent. solution of cocaine as near the seat of the pain as possible, and in ten minutes repeated the same. There was considerable relief. He said he had not had so easy a half-hour since he left home. Soon after I gave him a subcutaneous injection of a sixtieth of a grain of atropia in the arm, and half an hour later the same amount into the right temple. I prescribed ten grains of iodide of potassium every three hours and an eighth of a grain of corrosive sublimate three times a day.

February 11th. He had a rather easy day, though considerable pain at times. He took a large amount of liquid food. It was impossible for him to take solid food, as the act of chewing brought on the paroxysms of pain. At the visit in the evening I injected seven minims of the cocaine and a fiftieth of a grain of atropia. For the night I prescribed forty-eight grains of chloral to be followed in four hours by thirty-six grains more if needed.

February 12th, *Morning.* A restless night. Not severe pain. Slept about four hours. He had had seventy grains of iodide during the previous day and night. During the day he was to have one two-hundredth of a grain of aconitia every hour till he had had three doses; then every two hours until the lips or tongue tingled. Quinine, five grains every hour, and increase the iodide of potassium to twenty grains every three hours. *Evening.* During the day he was hungry, and took a good supply of food. He had only two severe attacks of pain in the afternoon; he had been up and about the room considerably. He looked much better and talked about going home. During the day he had taken one hundred grains of the iodide; had taken the aconitia as ordered, without any tingling; he was slightly deaf from the quinine. The quinine and aconitia were omitted for the night. I injected under the skin six minims of the cocaine solution and one-thirtieth of a grain of atropia. After twenty minutes I injected five minims more of the cocaine. (The cocaine was in the face and temple and the atropia in the arm.) Some minutes later the pulse was 72. During the night he was to have forty-eight grains of chloral, and in four hours the same repeated, if needed.

February 13th, *Morning.* Yesterday he had nine eggs, three bowls of gruel, about three quarts of milk in all. Slept six hours during the night. Dropped cocaine solution into right ear with relief to the pain. Face was numb. Pulse 84. To continue the quinine and aconitia as yesterday. *Evening.* Had three attacks of pain during the day. Injected eight minims of cocaine and a fortieth of a grain of atropia.

February 14th, *Evening.* He was asleep when I made the morning call. He slept about seven hours during the night. Yesterday he took eight eggs, two quarts of milk, three bowls of gruel and a little hash. No pain this morning. He talked this afternoon, which brought on the pain. I injected ten minims of cocaine and one-fortieth of a grain of atropia. It takes him about an hour to get quiet after the injection.

February 15th, *Morning*. Slept about six hours. Had only two attacks of pain, not severe. Ice to the neck seemed to relieve the pain. He had no chloral till five o'clock. *Evening*. Quiet this morning, pain this afternoon quite severe, but not so hard as a few days since. In last twenty-four hours had had ten eggs, three quarts of milk, five bowls of gruel, one bowl of soup and four small slices of milk toast. To-day took thirty-five grains of quinine.

February 16th, *Morning*. Only slept three or four hours; much pain now. Injected a fortieth grain of atropia. To take the aconitia every hour till three doses, then every two hours, and five grains quinine every hour. (The aconitia had not been given for a day or two.) *Evening*. Pain all the forenoon; easier this afternoon. Has had six eggs, two quarts of milk, one bowl chicken-broth. Took five doses of aconitia, the quinine thirteen times, and then was deaf. Injected one-fortieth grain atropia.

February 17th, *Morning*. Slept only one hour. Considerable pain but no hard attacks. The poor sleep probably was due to his not having the chloral. Eyes were a little red, so the iodide was given only every four hours. The aconitia and quinine were continued as yesterday. *Evening*. No severe pain; two hours in the afternoon entirely free. Had seven eggs, three quarts milk, one quart chicken-broth, quarter pound oyster crackers, two slices bread, half a pint tomato soup. Had during the day nine doses aconitia; quinine was stopped at 2 P. M. Injected one-thirtieth grain atropia.

February 18th, *Morning*. Slept seven hours, without anything. One attack of pain. Is easy this morning. Give the iodide every three hours. *Evening*. Had five eggs, three quarts of milk, chicken-broth with the chicken cut up in it, two large slices of bread. In pain at visit.

February 19th, *Morning*. Slept only one hour. No pain during visit. No aconitia till 1 P. M. *Evening*. Easy day. Had aconitia every two hours after 1 P. M. Quinine every hour till three doses, then every two hours. He has taken up to this morning (eight days and a half), three ounces of iodide of potassium. No atropia to-night.

February 20th. Slept nine hours last night and this morning. To increase the corrosive sublimate to one-sixth of a grain three times a day.

February 21st. Easy night. Slept six hours.

February 23d. Night before last slept seven hours. No pain for eighteen hours. It began again about two yesterday afternoon, and was severe till half-past four this morning. Took ten doses of aconitia and quinine. Easy to-day, but some pain.

February 25th. Night before last seven hours sleep. Yesterday, pain from four to eleven, then easy, slept six or seven hours.

He had more or less pain at times, on the 28th. It is noted that he had had no pain for nearly forty-eight hours. On March 7th he had had no pain during three nights. Soon after this he went home. He was heard from until April; he had had no more pain, but then he had an attack of asthma such as he had been accustomed to before he had the neuralgia.

The sessions of the International Medical Congress at Rome will be held in the new Polyclinic Hospital, outside the Portia Pia. The King of Italy has consented to open the Congress on September 24th.

FOREIGN BODY IN THE CILIARY REGION OF THE EYE FOR TWENTY-FOUR YEARS; NO SYMPATHETIC OPHTHALMIA; IRIDO-CHOROIDITIS OF THE INJURED EYE.

BY D. B. ST. JOHN ROOSA, M.D., LL.D.,
Professor of Diseases of the Eye and Ear in the New York Post-Graduate Medical School and Hospital, Surgeon to the Manhattan Eye and Ear Hospital.

J. L., forty years of age, a carpenter, was admitted to the Manhattan Eye and Ear Hospital, on December 21, 1892. He gave the following history: He was always well and strong; is now a stalwart man. About twenty-four years ago a piece of steel from a drill flew off, striking the left eye. He thinks that there was slight hæmorrhage, and that the eye was sore for about one week. It became free from redness, and has given him no trouble, except that it was occasionally tender, until a few weeks ago. The vision was somewhat impaired after the injury, and the patient thinks it may have gradually failed since. Six weeks ago, after having slept near a window where there was a draught, he awoke with headache and pain, tenderness and redness of the left eye. He thinks he may have struck the eye with his hand while he was asleep. The eye has continued to be inflamed up to the present time. No treatment seemed to give relief. The vision has not changed much as far as he can tell. There has been much lachrymation and a feeling as if something was on the eye-ball.

On admission there was a slight thickening of the upper lid; the ocular and palpebral conjunctivæ were red; lachrymation and deep circum-corneal congestion also existed. The cornea was roughened at the lower part; the anterior chamber was deep, and at the bottom there was floating material, looking like an inflammatory exudation. The iris was clear at the upper part, but discolored below. It was tremulous. The pupil was round, central and contracted. There were two holes in the iris, one in the upper and outer quadrant, through which the reflex from the fundus could be seen, and one at the extreme lower border, behind the exudation. Floating opacities in the vitreous could be seen, but no details of the fundus. The tension is slightly increased. V. R. $\frac{20}{20}$; Jæger, No. 1, — 5″ — 16″. V. L. $\frac{10}{200}$.

The patient was put to bed. A solution of atropine (gr. iv. – ℨ i.) was used three times a day; iced applications were kept up constantly; and two leeches were applied to the left temple. In a day or two the iced applications were changed to hot ones for a half-hour every two hours, because they had become more agreeable. The eye improved somewhat. There was less pain and redness, and the exudation in the anterior chamber cleared up a little. The pupil dilated slightly under the use of atropine. Behind the iris, below, a dark mass could be seen. The vision remained the same as on admission.

On January 10th, after several days of comparative freedom from irritation, the eye became more painful, more congested, and there was some increase of exudation in the lower part of the anterior chamber. Although a foreign body could not with certainty be seen, it was thought that it might be behind the exudation or in the iris; and with a view to extract this foreign body, if possible, the patient was given ether. A section was made at the lower margin of the cornea with a Graefe knife. Some of the exudation was evacuated. A Gruening magnet was then introduced and withdrawn, but no foreign body was found. A piece of iris was then excised, and the magnet again tried, but without effect. A bandage was applied, and removed on the next day. Considerable reaction followed. The coloboma of the iris from the iridectomy became closed from inflammation. There was chemosis, and blood in the anterior chamber. Under the use of atropine and hot water the inflammation somewhat subsided, but the eye continued to be quite irritable. On January 20th the sight was reduced to perception of light. The globe was hard and tender.

On January 24th, ether was given, and the eye was enucleated. A bandage was applied, and a normal healing followed. The patient was fitted with an artificial eye, January 30th, six days after the enucleation, and was discharged from the hospital the following day.

The examination of the eye, after its removal, showed some inflammatory deposit and thickening along the inferior part. On opening the eye-ball, by a section vertically, the vitreous was found to be filled with blood. The lens was lying on the ciliary processes below, and was as hard as cartilage and of dark color. A piece of steel or iron, one millimetre in diameter, very thin and friable, was found beneath the lens, and *in* the ciliary processes. It was evident that it had dislocated the lens in entering the eye.

There are many recorded cases of the presence of foreign bodies in the eye, for a number of years, but very few where the foreign body has probably rested in an especially dangerous position for so long a time as in this case, without the occurrence of sympathetic irritation. As is known, when foreign bodies remain in the eye, it is usual to have occasional attacks of sympathetic irritation, even if positive inflammation be escaped, while sooner or later the latter occurs, and the fellow eye is damaged or lost. In this case probably neither sympathetic irritation nor inflammation occurred. The eyeball was removed on account of the serious and painful inflammation, *involving it alone.* The examination of the eye after removal, showed that the magnet could not have caused the removal of the foreign body even if it had touched it, for the bit of steel was confined in the tissues of the ciliary processes.

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REPORT OF CASES OF TREPHINING AND CEREBRAL INJURY.[1]

BY DR. C. E. VAUGHAN, CAMBRIDGE, MASS.

Case I. Wm. R. S. B., age twenty-four years.

December 13th, was thrown from his horse, striking his head; for twenty minutes appeared unhurt; then a slight convulsion occurred, followed by four more in the course of an hour; and when he reached the Cambridge Hospital the pupils were somewhat contracted, but equal and responsive to light; the skin was cool and dry, and the face pale; pulse 42, temperature 99°, and the respiration 16. There was no complaint of pain, but a strong desire to urinate and to defecate, and a large amount of apparently normal urine was passed voluntarily. There was no evidence of paralysis, or external signs of fracture or depression of the bone, or injury. Biliary vomiting occurred, and soon intense, diffuse headache, with pain in the dorsal region. Bowels reacted with great difficulty. The patient was conscious, although the mind was dull and confused, but answered questions when aroused.

On the 14th, the condition was about the same: somnolence; slow, but perfect, cerebration; increased headache, partially relieved by morphia. The scalp was shaved, but no fracture discovered, and only a slight, superficial, scabbed scratch was found on the occiput, to the right of the median line.

On the 15th, the mind was more sluggish; imperfect cerebration; irritable when disturbed; temperature 101°, pulse 52–55, respiration 14. The pupils were somewhat larger when at rest, and the left did not respond as quickly as the right, and expanded again while still exposed to light; slight ecchymosis of the right eyelid, and a limited œdema of the scalp on the occiput to the right of the median line, near the junction of the lambdoidal and sagittal sutures.

On the 16th, increased somnolence and sluggish cerebration; the difference in the pupils was more marked, due to contraction of the left, which responded very slowly to light; the œdema had extended to the ear, the skin had become ecchymosed, and of a purple hue; there was ptosis of the left eyelid, with increased ecchymosis of the right, and the left angle of the mouth drooped a little.

Owing to the decided and progressive signs of cerebral compression, it was determined to make an exploratory incision. Under ether a horizontal incision was made through the scalp about two inches above and one inch behind the right ear; from the ends of this incision, two more were made in a downward direction. By this means, a transverse fracture was discovered, forming a clean crack without splintering or depression, the extent of which was not discovered, although three inches could be determined. By compressing the skull between both hands, a distinct motion of the sides of the fracture could be produced. During the whole operation, clear blood welled up freely. Two buttons of bone were removed with the circles slightly overlapping, some small clots extracted, and the wound dressed aseptically with gauze drainage.

During the operation, the pulse rose from 40 beats to 120, and soon after fell between 60 and 70. For twenty-four hours, there was no perceptible change in the condition of the mind, pupils, eyelids or mouth; but mental activity slowly returned and on the fourth day after the operation, the patient became very excitable, irrational, and persisted in pulling off the bandages and getting out of bed. By the sixth day, the pupils became equal, and reacted normally; there was less droop of the eyelids and mouth; and for the first time the patient realizes where he is, but has no recollection of the accident or subsequent events. On the thirteenth day he was less excited; but certain delusions have become fixed ideas, namely, first, that it is very important he should go home, even at the risk of his life on account of some imaginary business; second, two cases of mistaken identity, confounding the house physician with his brother-in-law, and the night nurse with another old friend. These ideas are not affected by arguments. There is a good deal of rambling, garrulous talk. The temperature is normal, but the pulse has risen. On the eighteenth day he became so much excited and persistent in his fixed determination to go home, that it was necessary to confine him in a separate room with a special attendant. From this time he steadily improved, to entire convalescence.

Case II. Andrew M., age fifty-six, fell from the top of a wheel, striking the right shoulder and back of the head upon the ground. Upon being raised, he stood up and spoke, retained consciousness about half an hour, rode home in a carriage, walked with some help into the house, but did not recognize his wife. Consciousness was soon lost, and never entirely regained. He became restless, and when disturbed, irritable, answering, "I'm all right." When brought to the hospital skin cool and dry; extremities cold; temperature 97.5°; pulse 42, and somewhat irregular; retention of the urine; pupils small, but equal and responsive to light; respiration slow and irregular; no paralysis. He soon became comatose, and could not again be aroused. There was a superficial scalp wound on the occiput to the right of the median line, but no evidence of a fracture or depression could be found by the finger or probe. At 11 P. M. there was irregular pulse, from 52 to 70 beats, Cheyne-Stokes respiration, subnormal temperature, and paralysis of the right buccinator.

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[1] From the records of the Cambridge Society for Medical Improvement, by Albert H. Tuttle, M.D., Secretary.

On the second day there was an increase in the size of the pupils, incontinence of urine, action of the bowels by means of saline and enema, and ecchymosis and œdema about the scalp wound.

On the third day, there was irregular reaction of pupils to light, the left less sensitive; somewhat stertorous respiration; strong pulsations of the right facial artery, and to less extent of the carotid.

On the fourth day, there were sharp right-sided, followed by slighter left-sided, convulsions; pin-hole-size pupils, irritated by exposure to light; right hemiplegia; suppuration of the scalp wound, and disappearance of the surrounding œdema.

He became steadily weaker, with complete hemiplegia, and died on the evening of the fifth day.

The autopsy showed a small scalp wound on the right of occiput; an extensive area of extravasated blood beneath the skull on the right and back; two linear fractures without separation, depression, or splintering of the edges, diverging from the site of the scalp wound but not meeting, one extending downward and forward across the lateral sinus to the base of the petrous bone, and the other, downward and backward across the occipital to its left border; a small extravasation of blood outside the dura on the left side; and beneath the dura several ounces of dark, soft, clotted blood which caused compression of the brain. The brain, on section, was moist; the small vessels were distended with blood; there were several small isolated clots of extravasated blood in the hemispheres; and the ventricles contained a little reddish fluid.

A comparison of these two cases shows the seat of the blow was almost precisely the same; that in neither were there any external signs of fracture; that in the first there was a clear history of compression of one side of the brain, produced by a local extravasation of blood, and the relief of the pressure by trephining was sufficient to entirely remove the symptoms, whereas in the second case, the symptoms indicated, besides progressive compression of both sides of the brain, which could not be localized, a severe general injury to the brain proper, produced directly by the concussion, and without any indications which would warrant operative interference. This was distinctly shown at the autopsy.

Four hundred immigrants have recently arrived in Halifax bound for the United States. Is it not time to perfect uniform quarantine regulations with the Dominion.

Medical Progress.

REPORT OF PROGRESS IN GYNÆCOLOGY.

BY F. H. DAVENPORT, M.D.,
Instructor in Gynæcology, Harvard Medical School.

ECTOPIC PREGNANCY.

Dr. A. Martin, of Berlin, opened the discussion on this important subject in the Gynæcological Congress at Brussels, in September, 1892, with a paper of which the following is an abstract.[1]

As regards the etiology of ectopic pregnancy, he is of the opinion that some mechanical obstruction is the important factor, although this cannot always be demonstrated. However, that may be, the actual point of implantation of the ovum must be approximately healthy, and capable of developing. The semen must penetrate through the uterine canal into the tube. The etiology must remain obscure as long as the place of physiological contact between semen and ovum remains unknown.

Ovarian pregnancy does occur though relatively very seldom. The most common seat of the ovum is the tube, and here usually in the ampulla. This was the case in forty-nine of his fifty-five cases. The ovum was in the right tube in thirty-four cases, and in the left in twenty-two. Soon after the embedding of the ovum, the decidua of the tube develops irregularly; a complete enveloping of the ovum does not seem to occur. The serotina is much less of a membrane than that which develops in uterine pregnancy. The fœtal placenta is as far as present observation goes not different from that occurring in the uterus. The muscular layer of the tube does not develop symmetrically, but shows a marked atrophy in places. The peritoneum is more or less irritated. The rest of the tube is almost unchanged, only the fimbriated extremity is somewhat unfolded. As the ovum develops the tube becomes bent or twisted.

Of his fifty-five cases only eleven showed the insertion of the ovum on the side towards the broad ligament.

The uterus increases in size and is in a state of general hyperæmia. There is uniformly a development of a sympathetic uterine decidua, which is, however, seldom symmetrical. It can undergo absorption while the ectopic pregnancy progresses.

The result of ectopic pregnancy is in the majority of cases tubal abortion. This was the case in thirty-nine of his fifty-five cases. Pregnancy may be interrupted by the death of the fœtus from any unusual exertion, either active or passive. Most often it is the result of the physiological incongruity between the growing ovum and its enclosure.

Tubal abortion caused by the expulsion of the ovum through the ostium abdominale tubæ is very common; but Martin rejects the explanation of Werth and Veit. He considers the contraction of the tube and the pains to be caused by the escape of blood into the tube. Abortion occurs because the newly-formed, thin-walled blood-vessels rupture from lack of muscular tissue. He recognizes that recoveries occasionally occur without operation, but he calls especial attention to the fact that the convalescence is always protracted, and that even when the danger from the shock is past, relapses, degeneration, and suppuration cannot with certainty be avoided. A localized peritonitis confined to the pelvis is often found.

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[1] Cent. für Gyn., No. 39, 1892.

There is seldom a regular train of normal symptoms of pregnancy, but some are always present. In the beginning of ectopic pregnancy the most prominent signs of that condition are very apt to be wanting; in their place peritoneal disturbances occur; menstruation becomes irregular, sometimes ceasing for a while, sometimes becoming profuse or scanty; occasionally constant bleeding is a feature. We are always forced to make a provisional diagnosis in the first three months. He lays the greatest weight on the attacks of pain and the anæmic collapse.

The prognosis for the child does not enter into the question since in almost every case the fœtus dies before term. Even if the child is carried to full term, the safety of both mother and child depends upon so many chances that one is obliged in the interest of the mother to disregard the prognosis for the child.

The prognosis for the mother is a different matter. Of 241 cases left to themselves 31 + per cent. recovered, 68 + per cent. died. With operative interference, of 585 cases 76 + per cent. recovered, and 23 + per cent. died.

The results in the 241 cases left to themselves were:

Rupture with hæmorrhage into the abdominal cavity	[illegible]
Rupture with peritoneal hæmatocele	[illegible]
Perforation of intestines	31
Perforation of bladder	9
Perforation through abdominal walls	[illegible]
Perforation through vagina	4
Expulsion through uterus	[illegible]
Incarceration in [illegible]	4
Lithopædion without trouble	9
	241

These are Schauta's figures. Carrying the investigation on to July, 1892, Dr. Martin found 265 additional cases treated expectantly (of which 36 + per cent. recovered), and 515 operated on (with 76 + per cent. recoveries).

He therefore advises immediate cœliotomy, since the women are at least spared a long sickness. He does not think that the plan of Winckel (of injecting morphine) has had sufficient trial, and claims that after the death of the fœtus, hæmorrhages with all their consequences can take place. He rejects electricity, and is in accord with Lawson Tait, Veit, Werth, and Pozzi for the complete removal of the ovum.

In the majority of cases a complete removal of the sac is possible, and to-day there will seldom be a necessity of stitching it to the abdominal walls or drainage into the vagina except as a last resort.

THE DIAGNOSTIC VALUE OF ELECTRICITY.

According to Apostoli [2] the Faradic current has a favorable effect on the pain due to ovaralgia, and thus may prevent unnecessary operations. A negative result from its use points to deeper-seated trouble, especially inflammation.

When the uterus is absolutely tolerant of the galvanic current it shows (with few exceptions) that the periphery is healthy, and intolerance is shown in proportion to the intensity of the inflammation of the appendages. This was interestingly shown by the behavior of patients who had been operated on, to the electrical current, who, before operation were very intolerant, but after removal of the appendages could stand galvanism well.

His conclusions are as follows:

(1) Every uterus which bears a galvanic current of from one hundred to one hundred and fifty milliampères has a healthy periphery; at least at that time there is no inflammation of the appendages. A simple ovarian cyst does not change the tolerance.

(2) When the uterus does not bear well fifty milliampères, when pain or fever supervene, the appendages are always suspicious.

(3) If the pain is less in subsequent treatments, there is either hysteria or an improvement in the inflammatory process in the tubes.

(4) If the pain increases in intensity and fever comes on, the case is usually one of purulent oöphoro-salpingitis, and demands operation.

PREGNANCY FOLLOWING HYSTERORAPHY AND ALEXANDER'S OPERATION.

Dr. Rivière [3] has studied the operation of hysteropexy or hysteroraphy, and that of shortening the round ligaments with especial reference to the occurrence of pregnancy. He finds that of the cases of pregnancy occurring after the operation of ventro-fixation of the uterus of which he can find records, a proportion varying from twenty-one per cent. to thirty per cent. abort.

In fourteen cases of pregnancy following the Alexander operation only one miscarriage occurred and that was purely accidental. In several, however, there was more pain than usual during pregnancy and the confinement was not absolutely normal.

The conclusions he arrives at are as follows:

The treatment of backward displacements of the non-gravid uterus should, in order to be efficacious, fulfil two essential conditions; first, complete reduction of the organ; and second, its maintenance in a normal position.

From the surgical point of view only two methods are at present able to fulfil these indications — shortening of the round ligaments, and hysteroraphy.

From the obstetrical point of view, shortening the ligaments is preferable to ventro-fixation and is the operation of election when the uterus is free.

If there are adhesions, it is best to first break them up by a cœliotomy, and then to fix the uterus by the intra-peritoneal shortening of the round ligaments, rather than by hysteroraphy.

TRENDELENBURG POSITION IN GYNÆCOLOGICAL OPERATIONS.

F. Schauta [4] writes in the highest praise of this position for gynæcological operations. He not only recommends it for operations, but calls attention to the fact that it is often of material aid in making a diagnosis in the simple bimanual examination without ether. The recession of the intestines towards the diaphragm enables the pelvic viscera and their relations to be much more easily studied. The objection to its use in cœliotomy that the bladder is more easily wounded he considers not borne out by facts, and the second objection that in this position pus is more likely to gravitate towards the upper part of the abdominal cavity in case of bursting of pus-tubes or abscesses, is, in his opinion, entirely offset by the more perfect ease with which the origin of such pus can be seen and its spread controlled.

In two cases early in the series of one hundred and-four in which this position was used, twisting of the intestines occurred, and resulted in death. These occurrences led him to study the behavior of the intestines in this position on the cadaver, and he found that those coils of intestine which are on the right side and underneath when the abdomen is opened, gradually work over to the left and towards the front. If the abdomen is closed while the patient is in the Trendelenburg posture, they may not resume their natural position, and so give rise to trouble. If, however, the precaution is taken to place the patient horizontally before the abdominal wound is closed and the edges of the incision held apart a little to favor their moving easily, they return to their normal position. Schauta has followed this rule in his last seventy cases, and has had no such complication.

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[2] Cent. für Gyn., No. [illegible]

[3] Arch. de Tocol. et de Gyn., October, 1892.

[4] Wiener med. Woch., Nos. 1, 2, and 3, 1892.

PERITONITIS: ITS NATURE AND PREVENTION.

Lawson Tait[5] in this article gives his views on peritonitis, which from their originality and practical nature merit attention. The article should be read as a whole; but the most that can be done in this review is to give a short summary of the more important points touched upon. They are as follows: The peritoneum ranks in importance almost next to the brain in the human economy. Almost all the great organs of the body except those of the nervous system seem to require to be involved in its folds in a very curious and singularly invariable way. It has a series of strange and invariable plications, and redundances of surfaces which suggest the function of active secretion or absorption. Its surface is everywhere excessively vascular and most profusely supplied with nerves, which normally convey no sensation.

As regards the causes of peritonitis, Tait has been led by his large experience to doubt the universal influence of micro-organisms. Peritonitis is not a lesion which fits into the germ theory of disease at all. He lays much greater stress upon disturbed innervation. He admits that there is such a thing as septic peritonitis, the possible secondary result of the acute suppurative peritonitis of the poisoned child-bearer, "but septic peritonitis save where definable from evidence wholly extrinsic to the condition of the peritoneum is an etiological entity which exists only in the mind of the pathological metaphysician." Peritonitis became rare after the final dismissal of the clamp, still more rare when washing out the peritoneal cavity took the place of sponging, and the few cases which do occur are of nervous origin, beginning in a stimulus just as in the web of the foot of a frog.

In the symptomatology of peritonitis, Tait claims that temperature and pulse are not safe guides. Two signs are constantly present in peritonitis, alteration of the face and intestinal distention. The expression of the face is not one of pain, but of anxiety accompanied by a tendency to chatter and ask questions. Intestinal distention is the most constant symptom in peritonitis and the one to be most dreaded. Tait, at its first appearance resorts to free purgation, and says if he succeeds in purging the patient recovers, if not she dies.

The cause of death he considers a disturbance of the ebb and flow of the serum stream of the peritoneum, and a disturbance of the function of the liver. He deduces the latter from the occurrence of bilious vomiting, and the coffee-grounds matter, which is due to hæmorrhagic flow from the liver.

The most important element in the prognosis is time. If the grave symptoms are all matured on the fourth day after an operation, a fatal issue is pretty certain; as they appear later the prognosis is better.

In his treatment of this grave disease, Tait has absolutely discarded the use of opium by the mouth, and only occasionally gives one dose under the skin immediately after operation. In spite of thirst he gives no ice or fluids for forty-eight hours, and at the first sign of distention he gives turpentine and soap enemata, followed by a saline if necessary.

His conclusion, in his own words, is this: "The practical outcome of my empirical experience is this, that the purgative treatment of peritonitis, or threatened peritonitis, or of anything which seems to be likely to turn out peritonitis, if it be promptly brought to bear on the case, will gain the all-important time, and often it gains such time as will call into action that influence which will eventually turn the scale in favor of the patient."

CARCINOMA UTERI IN THE NEGRO.

Dr. Middleton Michel[6] has in this article done good service in giving some accurate information based on statistics, on the question of the frequency of carcinoma uteri in the negro race. The statement has been made and copied by one authority after another that this disease is almost never found in negresses, while fibroids are very common. Dr. Michel seeks to show from his own personal experience that these statements are not true. To prove that cancer of the uterus is not uncommon among the blacks, he takes the death-certificates returned to the Board of Health of Charleston, S. C., for fourteen years. These show that from 1878 to 1891 inclusive there were forty-eight deaths from carcinoma uteri among the whites and fifty-three among the blacks. Estimating the negro population at 30,000, and the white at 28,000, there occurred among the whites $1\frac{5}{7}$ cases, and among the blacks $1\frac{3}{7}$ cases to every thousand of the population, a very slight difference.

DOUBLE TUBAL GESTATION.

At a meeting of the British Medical Association in 1892 Dr. Wm. Walter[7] reported an interesting case of tubal gestation in which both tubes were gravid. The patient was twenty-nine years old, and had been pregnant five times, the last time four years before. She was seen August 7, 1891, and gave a history of having missed her period in May and June, but had been unwell at the end of July. During June she was in bed suffering with abdominal pain and pains in her breasts, but did not think she was pregnant. Examination showed a mass the size of an orange in the left broad ligament. Abdominal section was advised, but owing to closing the hospital it could not be performed.

The patient was not seen again until December, 1891. She still had pain during defæcation, and had menstruated regularly since July. Bimanual examination showed the same condition as in July. It was thought advisable to wait until she was in better condition before operating, so she was not admitted until February 19, 1892. She had missed her period in January, but had menstruated in February. During the seven weeks of amenorrhœa she suffered a good deal from sickness. Examination now showed a uterus normal in size and position, tumor on the left side the same, on the right side a new swelling, cystic in character, and extending behind the uterus.

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[5] Brit. Med. Jour., November 12, 1892.

[6] Med. News, October 8, 1892.

[7] Brit. Med. Journal, October 1, 1892.

On the 25th the patient was seized with sudden pain in the lower abdomen, felt faint and began to vomit. Pulse 110 and weak. At the operation the next day both tubes were found enlarged, and were removed together with the ovaries. They were sent to Mr. Bland Sutton who found in the left an embryo six cm. in length, and in the right chorionic villi. He says: "In this instance we have to deal with a pregnancy in each tube; but the pregnancy in the left tube is more advanced than that in the right. An examination of the parts does not enable me to decide whether the impregnation in each tube occurred at or near the same time, the ovum in the right becoming apoplectic and ceasing to grow, or whether the right became gravid at a later date than the left, or *vice versa*. As far as my knowledge of the subject extends, this is the first indisputable example of a tubal pregnancy occurring concurrently in both Fallopian tubes of the same individual." He then gives the notes of three cases where it is probable this accident occurred; but the facts were not completely demonstrated.

After the writing of the above report Dr. Walter found a case published by Mackenrodt,[8] of bilateral tubal pregnancy, which he observed in a woman aged thirty-two. In May, 1890, she was seized with symptoms indicating rupture of a gravid tube. Operation was refused. In October, 1891, she was seized again with the symptoms of rupture of a gravid tube. On this occasion the abdomen was opened, and a gestation sac the size of a goose's egg removed from the left side. On the right side a second sac surrounded by matted intestines was found, which contained fœtal bones. The patient made a good recovery.

ADHESIONS OF THE GLANS CLITORIDIS.

Under the title "Is Evolution Trying to Do Away with the Clitoris?" Dr. Morris[9] presents a paper which is both novel and suggestive. He starts with the statement that eighty per cent. of all Aryan American women have adhesions which bind together the glans of the clitoris and its prepuce in part or wholly, and which cause little or much disturbance. The results of such adhesions are an imperfect development of the glans, a lessened sexual desire, and various nervous disturbances. These disturbances depend primarily upon irritation of the terminal branches of the pudic nerve in the attempt of the erectile glans to adjust itself to less elastic surroundings, and, secondarily, upon the irritation caused by retained smegma. Such irritation leads to masturbation and various perverted sexual desires, and later to the second series of disturbances, the reflex neuroses, which are the most important because they are the most baneful.

Dr. Morris gives the very few vague allusions to this source of trouble which he was able to find in the literature, and then says that there are thousands upon thousands of women in this country who are suffering from reflex neuroses which are directly and solely dependent upon preputial adhesions. He adds: "We can now learn that the girl who becomes irritable, disagreeable, and hysterical may become charming, interesting and possessed of all feminine graces when her prepuce is forcibly peeled away from the glans of the clitoris; and we have made a distinct step forward in civilization when this fact is generally appreciated by the profession. Brief histories of several cases are given and the method of separating adherent prepuces given.

MINERAL BATHS DURING NORMAL AND PATHOLOGICAL MENSTRUATION.

Dr. Makawejew,[10] in this interesting article, gives his experience with mineral baths during menstruation. His position as resident physician at the baths of Staraja-Russa in Russia, which resemble those of Kreuznach in character, has given him opportunities to study this question. In common with all bath physicians so-called, he looked upon the onset of menstruation as a signal for ceasing the administration of baths, but has gradually, as a result of his experience and experiments, come to doubt the truth of the theory that they are harmful, and even to believe that they are of distinct benefit at the time of the catamenia.

Experimentally, he shows that saline or mud baths at blood heat cause a rise of temperature at the outside of the body, and a lowering inside; warmer baths cause a rise of both external and internal temperature, the first more than the last, and colder, a fall of both temperatures, especially the inner.

The explanation is that the saline or mud baths act as an irritant to the skin, cause a dilatation of the superficial blood-vessels, and hence a diminished quantity of blood in the internal organs. The result of this would be in the case of menstrual disorders, a diminution of the amount of blood in the uterus, hence a diminished rather than an increased menstrual flow.

Practically, he found this to be the case. To sum up his results, which he gives in a good deal of detail, he treated one hundred and forty-nine patients with baths during menstruation. Of these one hundred and fifteen menstruated regularly and the regularity was not affected; thirty-four were irregular and became regular during the treatment. Where the catamenia lasted the normal time there was no effect; where it was prolonged (in sixty-nine cases), it was shortened by the treatment. In cases of metrorrhagia the amount was usually materially diminished.

Dysmenorrhœa was present in ninety cases; under the influence of the baths it disappeared in sixty, and in twenty-eight it was lessened. There was general nervous disturbance and hysterical condition in eighty-seven cases, which disappeared under the treatment in fifty-eight, and was much less in twenty-nine.

The importance of these observations from a gynæcological point of view is evident and the author claims that we have in baths rightly administered a means of controlling uterine congestion and favorably influencing the symptoms which are caused by it.

CASE OF SUPERNUMERARY URETER.

Dr. E. G. Orthmann[11] reports an interesting case of double ureter on the left side. The patient was twenty-seven years of age, and since her fifteenth year had noticed a small tumor between the labia which had gradually increased in size. On examination it seemed to be a cyst of the anterior vaginal wall, but on operating for its enucleation it was found that on pressure it slowly emptied itself, and that the pedicle was formed by the ureter which could be followed in the direction of the left ureter for a short distance. It was un-evidently a branch of the left ureter which ended in a blind sac. It was cut off and retracted, and gave no farther trouble.

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[8] Zeit. f. [illegible] Heft I.

[9] Am. [illegible]

[10] Zeit. f. [illegible] Heft I.

[11] [illegible]

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

THIRTY-SECOND ANNUAL Meeting, January 14, 1893, the President, DR. J. G. BLAKE, in the chair.

DR. R. W. LOVETT read by invitation a paper on

THE SURGICAL INJURIES OF NEW-BORN CHILDREN.

He spoke first of fracture of the skull and of cerebral hæmorrhage and the relations of the latter to spastic paralysis and idiocy. Several writers have shown that asphyxia at birth is a prolific source of idiocy. Hæmatoma of the sterno-mastoid muscle as a cause of wry neck the reader had personally observed. Fractures of the various long bones were then considered seriatim and examples given of deformities resulting from improper union in these cases, and the difficulties met with in obtaining good results.

DR. W. L. RICHARDSON said he had broken a humerus in delivery. Recovery was complete and the result good, by the use of pasteboard splints. In a case of placenta prævia, where very rapid version was necessary, he had seen the femur broken.

DR. E. J. FORSTER said that this case, one of his own, got well without treatment after the third or fourth day, as at that time further treatment was refused, and with no resulting deformity.

DR. C. M. GREEN said that his own list of injuries at delivery consisted of a fractured skull in a difficult case of forceps; a dislocated shoulder, which was treated at the dispensary and got well; and a third case where after a difficult version a fracture of the clavicle was found, although the diagnosis was a little uncertain. With simple treatment, recovery took place without deformity.

DR. R. W. LOVETT said, in reply to a question by Dr. Green, that asphyxia at birth was a very frequent cause of spastic paralysis and idiocy.

DR. J. J. PUTNAM referred especially to cases of paralysis of an arm following delivery, of which he had seen a number in the nervous clinic of the Massachusetts General Hospital. These he has treated for some time without success; but as Dr. Carter had observed at the hospital, it is probable that those cases do in time get well, as they are so rarely seen in adult life. The injury at the time of birth is probably not due to bony pressure or the pressure of a forceps-blade, but to the stretching and bursting given to the cervical plexus. The fifth and sixth nerves are almost always the ones involved. As regards cerebral lesions, he should agree with Dr. Lovett as to the importance of asphyxia in producing meningeal hæmorrhage.

DR. BROUGHTON said he was so unfortunate as to break a femur twelve years ago at delivery. Perfect recovery, however, took place by means of pasteboard splints, and an examination a year afterwards showed nothing abnormal.

DR. H. F. VICKERY once broke either the humerus or clavicle, he does not recall which, in extracting a child through a narrow pelvis. Perfect recovery, however, occurred.

DR. R. L. HODGDON, in two cases, broke the humerus; but by simple means obtained perfect results. He had had most trouble with congenital dislocation of the hip.

DR. R. W. LOVETT said that within a few years an operation had been devised for these cases of congenital dislocation of the hip, in which a deeper acetabulum was made by curetting; and about one-third of the cases have been successes. Mechanical means amount to nothing. Even the famous case of Dr. Buckminster Brown suffered, he believed, a relapse.

DR. EDWARD REYNOLDS had seen four cases of surgical injury at delivery. The first seen with Dr. Green, of obscure injury to the shoulder; the second, a hospital case where the humerus was broken in version; this was a green-stick fracture and did well. The third case occurred in private practice, in the delivery by the breech of a child weighing nearly eleven pounds. Here he broke the clavicle. The fourth case, in an out-patient of the Lying-in Hospital, he was assisting the pains in the delivery of a posterior position of the breech when the femur snapped. This is described as sometimes liable to occur even spontaneously in sacro-posterior positions, owing to the pressure of the symphisis against the middle of the femur. As regards the connection between asphyxia and permanent injuries he is inclined to think, from the fact that cerebral hæmorrhage is so frequently found in autopsies of the new-born that in such cases the asphyxia, is due to the hæmorrhage which causes the after trouble and that it is not the asphyxia itself which is the cause. A good many cases of pallid asphyxia are undoubtedly due to hæmorrhage at the base of the brain. If this is slight, they may recover without damage, or may be left with more or less paralysis.

DR. W. E. BOARDMAN had broken a femur in delivery. Recovery was complete.

DR. S. L. ABBOT mentioned briefly a most remarkable case, which he had reported at length to the Society before, of a child born by the breech with very little assistance, where spontaneous fracture of both ankles, both arms and of the skull had occurred. In three weeks' time all the fractures had united but the child died a week later in convulsions.

DR. C. W. TOWNSEND had broken a clavicle in one case, but union took place perfectly and there was no after trouble. The mother was only sixteen years old, an out-patient of the Lying-in Hospital. The head of the child was delivered with forceps, and the shoulders refused to come until something snapped, which proved later to be the clavicle. As regards cerebral hæmorrhage, he had found this in several autopsies referred to by Dr. Reynolds. One was a case of delivery of the breech by forceps, in a paper already presented to the Society. Here there was no difficulty in the extraction of the head, but the child died of cerebral hæmorrhage.

DR. J. G. BLAKE said that he had never had any difficulty in the after-treatment of those cases of fracture, having broken the clavicle and humerus several times.

DR. C. W. TOWNSEND reported

CASES OF ABNORMALITIES OF THE FEMALE GENITALS.[1]

DR. F. W. DRAPER said that Case III suggested to his mind the male sex, although it was, of course, impossible to decide.

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[1] See page 360 of the Journal.

THE CAMBRIDGE SOCIETY FOR MEDICAL IMPROVEMENT.

ALBERT H. TUTTLE, M.D., SECRETARY.

Dr. C. E. Vaughan reported two cases of

TREPHINING AND CEREBRAL INJURY.[1]

Case III. Reported by Dr. E. H. Stevens. B. C., age eighteen, was thrown from a wagon against a curb-stone, June 17, 1892, striking the skull and producing a transverse wound two and one-half inches long, situated one and one-half inches above the superciliary ridge on the left side of the forehead. Through the wound, which was filled with dirt, a depression could be felt; and upon dissecting back the pericranium, a transverse fracture was found nearly the length of the skin wound, with a marked depression of its upper edge. The patient was semiconscious, with slow, regular, but feeble pulse, and contracted pupils; he vomited blood. A button of bone was removed with an inch trephine, the centre of which was over the sound bone; and with considerable difficulty the depression was elevated, and the dura was found uninjured. There was very slight bleeding and the wound was brought together, excepting immediately over the site of trephining, where it was packed lightly with iodoform gauze, and dressed aseptically. The pupils dilated, the breathing became natural, the pulse-rate increased to 100, and the patient became conscious in about three hours.

June 18th. Patient vomited all day; the pulse was slow and regular, and the pupils dilated.

On the 19th, vomiting ceased. Pulse the same; pupils dilated, and responding to light. The wound was dressed the 20th, and looked well. The pulse was stronger and the mind clear. There was some headache. From this time on convalescence was uninterrupted, and the patient was discharged July 16th.

Case IV. T. H., age thirty-four. October 27, 1892, was struck in the frontal region by an iron pulley of several pounds weight, which fell about ten feet. He walked into the hospital in a conscious condition. There was a clean-cut wound two and a half inches long, which extended transversely across the forehead, two inches above the left eyebrow, and a depressed fracture of the frontal bone two inches long and one-quarter of an inch in width, which was depressed to the depth of the thickness of the frontal bone at this point. A button of bone was removed with the trephine, and the depressed pieces of bone extracted. Several small pieces of the inner table were splintered off and lay loose upon the dura, the larger one being turned on its sharp edge and pressing firmly against the dura, which was slightly torn and bleeding. The bleeding was checked; the opening of the skull covered with iodoform gauze, which was brought out at the lower angle of the wound in the skin; the wound closed with buried tendon suture; and a firm dressing applied. After the operation he became very restless, and had severe headache. On the 30th, there was less headache; temperature 99°; and the wound, which was looking well, after removing the iodoform gauze, was dressed. The wound entirely healed by November 8th; and the patient was discharged on December 5th.

Case V. Dr. J. M. Crocker reported a case of a seafaring man who was struck on the head, and died from the effects of the blow in a few hours. The autopsy showed free hæmorrhage, and a large clot, which caused death by pressure upon the brain, and that the case might have been saved by early trephining.

Case VI. Reported by Dr. G. W. Jones. A butcher of middle age fell from his team, and was found by the wayside in a comatose condition, with a scalp-wound on the right side and a fracture of the temporal bone. The scalp was dissected back and the skull trephined, when it was discovered that, although the outer table appeared as a simple undepressed linear fracture, the inner table was quite comminuted, the splinters having lacerated the dura and produced considerable hæmorrhage and pressure on the brain. The case made good recovery.

Case VII. Reported by Dr. S. W. Driver. A boy, fourteen years old was thrown from a horse, striking his head, and producing a compressed comminuted fracture, situated about two inches above, and an inch and a half behind the ear. When first seen he was semiconscious and delirious. After shaving and cleansing the parts, the scalp was dissected up, and one of the fragments of bone raised with considerable difficulty by means of an elevator, without trephining; it was then an easy matter to remove the remaining pieces. Free hæmorrhage followed, which was controlled by compression. In the after-treatment of the case, it was found that the granulations, which grew rapidly, forced their way through the meshes of the gauze dressing, and produced such close adhesions to it, that, the removal of the dressing was attended with considerable bleeding and much pain; and to obviate this, a dressing with wicking for a drain and in contact with the wound, was substituted, at the suggestion of Dr. Swan, and worked admirably.

Case VIII. Reported by Dr. A. P. Clarke. A boy, age eleven years, fell seventeen feet, striking his head on a plank walk. He immediately had convulsions, vomited, became partially unconscious, and soon passed into a comatose condition with stertorous respiration. An incision was made by Dr. Holt over the supposed seat of injury, between the superciliary ridge and frontal eminence of the left side, and a button removed with the trephine. There was no manifest injury to the outer table, but a multiple fracture of the inner table was found which was pressing upon the dura and produced some laceration. The depressed portions were raised, and some splinters removed; the hæmorrhage, at first severe, was controlled by applications of carbolized cotton removed at short intervals, and the wound treated with an antiseptic dressing. The case made a complete recovery.

Remarks. Dr. H. O. Marcy. Repair of the cranial bones is quite different from that of the long bones; this was first called to his attention by Ercolani. At the line of primitive injury the periosteum, instead of regenerating as it does in long bones, undergoes a process of necrosis, and is accompanied by an absorption of bone. A membrane may form over the opening, but there is no regeneration of bone. The best specimens illustrating this are found in the private museum of Dr. Warren. There are also a number of ancient skulls in the Peabody Museum, showing the changes of repair. In one noted case, that has been published as a case of early trephining, a photograph thrown upon a screen by means of a projection lens showed fine linear fractures radiating from the central opening, and demonstrated that it was more likely this trephine-like hole was caused by an instrument of warfare. This is further supported by the fact that instruments of warfare have been found which could produce a wound similar to that in the skull. A series of photographs were shown representing special injuries of the skull in the practice of Dr. Marcy and others.

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[1] See page 313 of the Journal.

A noted case of suspended cerebration occurring in a negro, struck on the head with a sabre and supported five years by charity in a condition more like a beast than a man in solitary confinement, was quoted from the description of Dr. Hunter McGuire, where on the removal of compression by trephining, the first words spoken were, "Where has the army moved to-day?"

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Recent Literature.

Fermentation, Infection and Immunity: A New Theory. By J. W. McLaughlin, Austin, Tex. Eugene von Boeckman. 1892.

In this little book the author gives a clear statement of the facts known concerning fermentation, infection and immunity; gives a theory in explanation of the action of bacteria which he designates as the physical theory. He assumes that all action of bacteria is to be referred to the action of molecular waves. The molecular waves of an organism will act on substances when there is a certain relation between the molecular waves of the protoplasm of the organism and those of the substances around it. These molecular waves may be strengthened or interfered with by the molecular waves of other substances. In grape-sugar fermentation, the molecular waves of the yeast-cell falling upon those of the sugar will force the atoms further and further apart, and finally the sugar molecule will be broken up and the elements composing it reduced into their atomic state, when chemical laws will speedily force them into other combinations. When the products of fermentation have accumulated in sufficient amount, other molecular waves differing from those of the ferment will antagonize the action of this and prevent the fermentation. In the same way, the infectious bacteria disrupt and convert the albuminoids of the body into infectious products or tox-albumins. The various bacteria show a selective action. Each variety will break up certain albuminoids whose molecular waves coincide with those of the organism. Natural immunity, he thinks, is due to a modification of the molecular waves of the tissues which has been gradually acquired in resisting the influence of the pathogenic bacteria. The book shows much thought and study.

Why Hygienic Congresses Fail: Lessons Taught by the International Congress of 1891. By Dr. Elizabeth Blackwell. Forty pages. London: George Bell & Sons. 1892.

The title of this pamphlet should have been, "Why Hygienic Congresses Fail, in the Opinion of the Writer." The author's views are of an extremely hazy and visionary character, as may be inferred from the following extracts:

"A section was devoted to the theories of bacteriology, which, as will be seen, are directly opposed to the true science of health; and this was *unfortunately* the most popular and crowded section of the Congress."

"Love is as much a fact as bread and butter; justice is as potent in its effects as microbes; and from their wider range of action, and more permanent duration, these mental facts are far more real than the physical phenomena."

"The modern exaggeration of bacteriology, with its theory of inoculation, must be steadily opposed by all who realize the power and growing influence of spiritual life."

Vaccination comes in, as a matter of course, for a share of her condemnation.

Handbook of Materia Medica, Pharmacy and Therapeutics. Including the Physiological Action of Drugs, The Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By Samuel O. L. Potter, A.M., M.D., M.R.C.P. (Lond.), Professor of the Theory and Practice of Medicine in the Cooper Medical College of San Francisco, etc. Fourth Edition, revised. Philadelphia: P. Blakiston, Son & Co. 1893.

The fourth edition of this good work has appeared only thirteen months after the third edition. The well-known arrangement of the book is of a very practical kind. Under Therapeutics one finds brief suggestions for the treatment of various symptoms or diseases. Some of the articles have been rewritten for this edition, but the one on quinine, or rather cinchona, is not among the number. The chief additions to the list of drugs are aristol, chloralamide, diuretin, phenacetine and piperazine. Peroxide of hydrogen deserves more than the scant notice given it under "Sanitas." The appendix contains several useful tables, some pages on the treatment of poisoning and on differential diagnosis, and a few pages on patent medicines. Among these one finds mentioned Keeley's "Chloride of Gold" cure for drunkenness and the opium habit. The composition is said to be as follows:

Chloride of ammonium	gr. i.
Aloes	gr. ii.
Compound tincture of cinchona . . .	fl. ℥ iii.
Water, sufficient to make	fl ℥ iv.

The hypodermic injection, administered four times daily for five weeks, contains strychnine and atropine, with codeine and cocaine for the opium cases. The whiskey supplied to the victims contains about gr. $\frac{1}{50}$ of apomorphine to each average drink.

Les Salpingites. Par M. le Dr. Landau. Brussels, 1892.

We have, in this pamphlet of 89 pages, a very thorough and scientific *résumé* of the various forms of salpingitis, their pathological anatomy, etiology, symptomatology, diagnosis, treatment and prophylaxis. It covers the whole ground better than any monograph we know, and represents the most advanced knowledge on the subject. The section on treatment is particularly good, the indications for the various operative procedures, curetting and drainage, vaginal incision, vaginal laparotomy (?) and cœliotomy being very clearly given. The book will well repay study.

The Food Inspector's Handbook. By Francis Vacher. London: The Record Press, Limited. 1893.

This compact treatise of 140 pages upon the inspection of food, consists of a series of thirteen chapters, which were published seriatim in the *Sanitary Record.*

Dr. Vacher's long experience as the Medical Officer of Health and Food Analyst of Birkenhead, has made him thoroughly acquainted with the topics which he has treated in this very useful manual.

THE BOSTON

Medical and Surgical Journal.

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THE PREVENTION OF HEART-FAILURE IN ACUTE FEBRILE DISEASES.

There is a lack of good remedies to meet the indications furnished by the weak heart in pneumonia and in febrile diseases generally.

Take, for instance, the case of simple fibrinous pneumonia occurring in an elderly man of not average robustness, or in a delicate, feeble woman. No prudent physician would think of prescribing depleting medicines here; veratrum viride would be regarded as of questionable utility, and antimony would be altogether eschewed. But what remedies should be chosen? Shall any be given? The present tendency is to be shy of large doses of powerful drugs; the practitioner feels safe in prescribing nitre and ammonia, in ordering milk and other liquid nourishment, "to support the strength." In many cases of impeded respiration oxygen is certainly of extraordinary utility, both from its relief to the pulmonary functions and from its general tonic effects. Shall one, on the other hand, prescribe whiskey or brandy, or trust to "expectancy"? It cannot be said that there is perfect agreement among the best representatives of medicine to-day as to the reply which should in all circumstances be given to that question.

In the supposed case of pneumonia, one quite large class of practitioners would consider the alcoholic treatment indispensable. Granting the fact of a rather feeble pulse — a diminution in the force of the heart's systole and impulse, a considerably increased frequency of its beats — the physician of this class would early in the sickness give wine or spirits every two or three hours. Here, he would say, is a case where the danger comes from heart-failure. If we support the heart all through the sickness, will it not be more likely to stand the strain of the crisis about the end of the first week? For this reason alcohol is given, and often digitalis; the latter remedy has the disadvantage of being a vaso-constrictor and of augmenting the resistance in the arterioles and capillaries. On the other hand, the opponents of the alcoholic medication point with triumph to the relatively small mortality which attends a treatment of which alcoholic stimulants constitute but a very insignificant part. They affirm that alcohol further poisons the blood, already poisoned by the toxines of the pneumococcus, and if given heroically may paralyze instead of toning and strengthening the heart. They challenge the proof that a weak heart, however well "supported" by an alcoholic regimen from the commencement of the sickness, bears up exceptionally well under the struggle. How many sink under the most heroic stimulation!

There is doubtless some truth in this presentation of the case, although it should not be forgotten that it is the worst cases which are apt to be given the most alcoholic stimulation. A feeble heart under the stimulus of blood charged with alcohol, may for several days display unusual activity. The physician may be lulled into a sense of security about his patient who, under the influence of frequent spirit-potions is supposed to be doing finely, when all at once, about the eighth day, a "rattling in the chest," coma-vigil and collapse appear!

Doubtless the weak heart has sometimes been whipped into preternatural energy by alcohol, only to be exhausted just when its full functional integrity and vigor was most needed.

The opponents of the alcoholic medication *à l'outrance*, while affirming that such results as are above depicted are not uncommon (and here possibly the argument is based more on theoretical considerations than on any exact scientific inductions), still claim that a moderate and judicious use of wine or brandy about the epoch of crisis, to produce a temporary effect and to brace up the heart at a time when a few hours will decide the question of recovery or death, is both rational, and in accordance with sound experience.

The same has been said *pro* and *con* in reference to the treatment of typhoid fever. Some would give alcohol rather freely from the first (not even excepting mild cases which are stimulated with the view of supporting the heart). Others are very chary in prescribing alcohol, and only order stimulants when symptoms of sinking threaten, and then for a temporary effect.

It is not yet absolutely determined that the long continuance of rather small doses of alcohol in fevers (half an ounce of whiskey every two or three hours, or an ounce of wine) to feeble, adult patients is in any sense *harmful;* nor do we really know the amount of *benefit, if any,* which is derived from such doses. This is a matter which can only be determined, if ever, by large clinical experience, an experience embodying cases (occurring under similar conditions) that have been treated both with and without alcohol.

With regard to digitalis, we think that very many practitioners have come, with Osler, to regard the administration of this remedy to prevent failing heart in pneumonia and in fevers as of doubtful utility. The same may be said of caffeine, which when given subcutaneously with benzoate of soda, is thought by certain French authorities to be of marvellous efficacy in threatening heart-failure. It is certain that the experience of those who think that they have almost seen the dead restored to life by these injections, has not been the common experience of physicians in this country who in desperate cases of sinking and collapse have resorted to this remedy. Nor has nitro-glycerine, strophanthus, or any of the other modern heart-tonics won their way to general acceptance as trustworthy remedies against heart-failure in acute febrile diseases not primarily cardiac.

It may be contended that much can be gained by the judicious use of certain vaso-dilating remedies which lighten the work of the heart by lessening peripheral resistances. In this way, writers have affirmed that veratrum has done good in pneumonia, even in the aged and feeble, that is, by relaxing the arterioles. This claim does not seem to have been positively substantiated. Similar vaso-dilator effects have been claimed for the nitrites, for belladonna, opium and gelsemium in small doses in prostrating fevers; and there is reason to believe that alcohol (so much misunderstood and abused) when given in suitable moderation, so as not to exceed the healthy physiological mean, may be beneficial in febrile complaints, not by exciting the heart, but by calming it and diminishing its work by opening up more completely the capillary sluiceways.

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INTEREST IN MEDICAL MEETINGS.

How can the meetings of medical societies be made interesting? This question worries the chairman and secretary of most societies; but the non-official members generally merely criticize, or stay away, if the meetings are tiresome. The drawing power of a society often depends as much upon the by-laws, and the activity of the officers as upon the capability of the members. It is necessary first to attract an audience, and then to keep them interested; this being accomplished, the value of the proceedings may be left to the individual speakers. The greatest bore is a paper which is ten times as long as it need be.

The adoption of the "Ten-Minute Paper" rule has recently become a marked feature in the work of the New York Academy of Medicine, especially in the Section in Pædiatrics, and has resulted in a marked increase in the attendance at the meetings, and a large number of concise and interesting papers. The instruction to writers of papers by the chairman contains the following: "Hippocrates and Galen may be passed with very slight notice, as they have been dead for some time and their opinions are somewhat obsolete. Scratch out the formal introduction and condense the body of the paper. End the paper where the subject matter ends, making its action like that of a piston syringe — begin, spatter, stop."

A busy man is more easily persuaded to write an informal short paper than a formal long one. The formality itself, and the necessity of clothing the main idea is often the bugbear which prompts a man to decline to write. If his contribution is to be one of six instead of the *pièce de résistance* it is easier for him, and generally much easier for his audience. In drawing deductions from a case, or a series of cases, a reader is readily excused from going into the details of his process; he is not proving a geometrical problem, or if he is, his hearers had rather see the steps in print, where they can be skipped, than listen to them.

The discussion is generally an interesting part of a meeting. There is usually too little rather than too much, but it would be acceptable to most societies if those gentlemen who have a rambling and procrastinating tendency could be helped along.

The reader as well as the listener will be more easily attracted by a condensed than by a well padded paper. No one, except perhaps the writer, thinks that there is more dignity in a long than in a short article. The reader has the advantage over the hearer in that he can skip, and look to the end for the conclusions, but the process is not a pleasant one to him. He is repelled by tables and by copies of hospital records, and attracted by short articles or well-described descriptions of single cases.

◆

MEDICAL NOTES.

Change in Quarantine Regulations. — The Secretary of the Treasury has amended the quarantine regulations recently promulgated so as to provide for the inspection of passengers taken aboard ship at intermediate ports by the United States consular officer at the port or in his absence by the local health officer.

The "Petit Verre." — The chief pharmacist of the Trousseau Hospital in Paris says the *Medical Press* has thrown interesting light upon the composition of the cognac which is imbibed equally by the *jeunesse dorée* of the Boulevards and by the unwashed of the slums. The result of his inquiry is that the *petit verre* sold at a franc a thimbleful at the aristocratic cafés is very much the same liquor as that vended for a penny at the humblest *cabaret*, and that in both instances the liquor is a vile, deleterious concoction.

Sanitary Condition of New York City. — A committee on hygiene of the Medical Society of the County of New York have called attention to different reforms and improvements of which the city is in need. As New York is not the only city which needs improving, we extract a few of the recommendations. The committee thinks that the question of street noises is a subject worthy of consideration. There should be enforced regulations compelling trucks laden with iron girders, and such like, to be so loaded as to effectually prevent the infernal racket which we so often hear. Several other preventable noises should also receive attention. Crematories for garbage are to be recommended, and in Boston this has already been begun by the authorities. As evidence that the process of cremation may be conducted with little offence, the chairman relates a story of his search for the crematory in London, in the Whitechapel district. No one in the vicinity appeared to know of its existence; and when it was finally discovered, absolutely nothing offensive could be perceived. The care of contagious diseases is also a difficult problem. The committee recommends that greater care be taken in public dispensaries to prevent cases of possibly contagious diseases waiting in crowded waiting-rooms. It also recommends that greater care be taken to prevent the spread of whooping-cough. During the past ten years the number of deaths in New York from this cause has averaged 450 per annum. The question of abating the smoke nuisance is also discussed. In New York much has been done in this direction by the Board of Health. In Massachusetts, a bill has been reported by the Committee on Cities, providing that in cities of 30,000 inhabitants or over, all furnaces using bituminous coal for the production of steam, shall have some appliance for consuming at least seventy-five per cent. of the smoke.

Psychology at the World's Fair. — A laboratory of psychology has been established at the World's Fair, in which different apparatus used in psychological research will be shown, and tests will be made upon as many visitors as wish to go through them. These tests will be simple, and will be used to determine normal averages in respect to various forms of vision, tactile sensation, times and accuracy of judgment, and the like. An attempt will also be made to show diagrammatically the practical importance of these investigations.

Influenza. — It is reported that a severe outbreak of influenza has occurred in Southern Russia, attended with heavy mortality. In London, the number of deaths attributed to this disease rose in February and the first part of March. Since the first of the year 188 have been reported.

The Thymus Gland. — Marie calls attention, in a recent number of the *Union Médicale*, to a frequent compensatory hypertrophy of the thymus gland or its persistence in cases in which other ductless glands have become lost or atrophied. He has observed this hypertrophy in cases of myxœdema, acromegaly and exophthalmic goitre.

Cholera Regulations in Russia. — Whatever the causes may be of the spread of cholera in Russia, the lack of severe penalties is evidently not one of them. In Astrachan, a report says that for disobeying rules in connection with the epidemic twenty-one persons were hanged, forty-five were sent to the mines for long terms, and many more sent to prison for some months.

Professor Virchow in London. — At a recent reception given in London to Professor Virchow, in an after-dinner speech he made a violent attack upon the anti-vivisection party in England, which was received with loud applause, although the daily press did not seem to have the courage to say much about it. In speaking of his own country, he strongly insinuated that the emperor did not like him; but his English audience did not appear to care what he and the emperor thought of each other. There is a rumor that the English royal family are for this very reason interested in Virchow, being in a perpetual state of disagreement with the imperial German family. The Prince of Wales gave him a dinner at Marlboro House, which was attended by the Empress Frederick; and it is believed that this hospitality is due not so much to respect for cellular pathology as to the effect upon the court at Berlin.

A Heat-Producing Fungus. — Cohn believes he has found in a parasitic fungus, already known as destructive to the germination of barley, the immediate cause of the spontaneous combustion of hay. A heat of 95 degrees having been already induced by natural chemical changes, this fungus begins its work and raises the temperature to 140 degrees.

The Nutritive Value of Peanuts. — At a recent meeting of the Medical Society in Berlin, Fürbringer described a nut, "the taste of which uncooked reminded one of raw beans, but when roasted, of almonds and nuts." This peculiar nut is well-known in America as the peanut. From this a meal can be prepared, the constituent albumen of which is very great, amounting to about forty-seven per cent., with nineteen per cent. of fat and non-nitrogenous material. Noerdlinger said that it was the most nutritious and cheapest article of food obtainable, and that it had been tried in the Friedrichshain Hospital. The dry material was unsuited for food, but it might be beaten up in soup, which resembled oatmeal soup. Half of the patients had taken the soup readily for weeks together, and it agreed well with them, even those suffering from dyspepsia. The other half found the soup disagreeable. It may be made into cakes and other preparations, and although not a delicacy, was a valuable and suitable food, especially for institutions.

White Flies and a Snake. — On the reopening of an old mine at Bangor, Cal., a few months ago, flies were found in a dry slope connecting two shafts, all white except the eyes, which were red, and a white rattlesnake was killed. The animals had lived in the dry passages, where they had been supplied with air but not with light. A few of the flies, exposed to light in a glass case, recovered their proper color within a week.

Electropathic Belts. — A trial has recently been held in England which has attracted the attention of both electricians and medical men. The defendant had bought one of the electric belts, which for many years and in various shapes have been sold to the credulous public, under the claim that a constant current of electricity is generated by certain metallic disks in the belts. The proprietors of the belt in this case sued for three guineas, the unpaid part of five guineas for which it had been sold. The defence claimed that the belt was worthless. Several scientific men testified that no electrical current was generated by the article in question. As a result of the trial, a verdict was given for the defendant. The *Electrical Review*, in giving an account of the case, describes this belt as made of ordinary webbing, on which are disks of copper and zinc. It is quite impossible for the belt to generate any current as worn upon the body since the external circuit was not completed. Its uselessness for hernia, for which it was especially recommended, ought to be evident to every one.

BOSTON.

The Medical Institutions in Boston Harbor. — As soon as possible, probably within a week, the new pauper hospital on Long Island will receive patients. Only such invalids will remain at Rainsford Island as are not bed or hospital patients, until such time as the new wing to the Long Island hospital can be built. Upon the completion of the hospital and the new dormitory for the female paupers, all the women will be transferred from Rainsford Island, and the institution buildings there will be occupied as a house of reformation for boys, to which the reformation school boys at Deer Island will be sent, while the truant boys will go to the new institution at West Roxbury on the Bowles farm. In the meantime the women will remain at Rainsford. Formerly the female paupers and sick were cared for at Long Island and the men at Rainsford, but a few years ago they exchanged places. At that time there were about 700. When the building on Long Island is finished there will be accommodation for 300 beds in the ward-rooms, together with the quarters for the physicians, nurses, attendants, etc. It is the intention to treat all hospital patients, both male and female, there, and the building is so planned that an excellent opportunity is afforded for classifying patients, and for isolating the refractory, demented and dying. A description and plan of this hospital will be found on page 620 of the Journal of December 10, 1891. With these changes in the harbor institutions Dr. C. H. Cogswell, at present port physician, will become superintendent at Long Island, with Superintendent John Galvin at Rainsford. The assistant port physician will act as physician until an appointment is made.

NEW YORK.

The Weekly Mortality. — The mortality during the week ending March 25th reached the very high figure of 1,135. This represents an annual death-rate of 31.60 per thousand of the estimated population, against 30.64 for the preceding week, and 26.03 for the average of the corresponding weeks of the past five years. Pneumonia caused no less than 263 deaths; more than double the number reported from any other disease, and 110 more than the average of the corresponding week for the past five years. In commenting on the large mortality from pneumonia of late years, Dr. John T. Hagle, Registrar of Records of Vital Statistics, says: "The deaths from pneumonia in this city last year were 5,794, and during the year 1891, 5,818, a number for each year that exceeded the highest mortality that we ever had in this city from any epidemic of cholera in one year. The highest mortality from cholera was in the year 1849, when 5,071 deaths were reported from it in the city. The next highest was in 1832, when the deaths were 3,513. In 1854 they numbered 2,509, and in 1866, 1,137. It will be seen that in two years pneumonia caused 11,612 deaths, while the entire deaths from cholera during the past eighty years scarcely numbered 14,000; yet the phantom of the appearance of cholera creates a panic among the people, and pneumonia seems to attract but little attention." During the week 16 deaths were reported from epidemic influenza. The official records show that from the 30th of November last to March 26th 352 cases of typhus fever have been reported, with a mortality of 132 cases, or 37.01 per cent. Cases of the disease still continue to be reported from day to day, but during the week ending March 25th there were five less deaths from it than during the preceding week. Small-pox has broken out at the men's pavilion at Snake Hill, Jersey City, and it is feared that the disease may become epidemic in the almshouse and other county institutions. There are over one hundred cases at present in the hospital for contagious diseases, and in consequence it has been found necessary to erect tents for convalescents on the adjoining grounds.

The Death of Colonel Elliott F. Shepard has been the cause of considerable talk in the city. From the published statements of the case it seems that by physical examination no organic disease had been discovered. As he presented well-marked symptoms of stone, he was etherized for sounding, but, on account of bad respiration, the examination was stopped, and oxygen given. The breathing, however, became steadily worse, and he died apparently of œdema of the lungs.

Instruction in Cholera. — The Board of Education has arranged for a special course of free evening lectures on cholera — "What It Is and How to Cure It" — to be given in the various public schools by competent physicians.

Grace Episcopal Church has just purchased a large piece of property at 14th Street and Avenue A, on which it is proposed to erect a chapel, hospital, and parish and clergy houses. The hospital will have wards for men, women and children, and in the parish house will be accommodations for a Boys' Club and a well-equipped gymnasium.

The Hospital Saturday and Sunday Association. — The distributing committee met on March 21st and divided the undesignated fund of the general collection of 1892, which amounted to $50,000. Of this sum Mount Sinai hospital received the largest appropriation, $5,626. The other institutions which received over $1,000 were as follows: St. Luke's Hospital, $5,486; Montefiore Home for Chronic Invalids, $5,345; Roosevelt Hospital, $4,293; the German Hospital, $3,704; Hospital for Ruptured and Crippled, $3,528; St. Mary's Free Hospital for Children, $1,984; Home for Incurables, $1,942; Isabella Herinath, $1,897; Mother's Home, $1,371; Colored Hospital, $1,354; Skin and Cancer Hospital, $1,340; The Woman's Hospital, $12,24; Home of the Holy Comforter, $1,019. Seventeen other hospitals received amounts ranging from $901 to $153.

Extirpation of the Spleen. — Dr. John A. Wyeth recently performed this operation at the Polyclinic Hospital. The pressure exerted upon the vital organs by the spleen, which was enormously enlarged, had become so great as to imperil the life of the patient, and its removal was therefore determined upon. The result was watched with special interest on account of the mystery which has always attached to the functions of the spleen, but the patient, whose health had previously been undermined, died of peritonitis and shock five or six days after the operation.

The Cure of Inebriety. — A special meeting of the American Association for the Study and Cure of Inebriety was held at the hall of the Academy of Medicine on Thursday evening, March 23d, where the subject for discussion was "Specific Remedies for the Treatment and Cure of Alcoholic and Opium Inebriety." A large number of short papers were read, among those presenting them being Drs. Norman Kerr, of London, Kiernan, Clevenger and Meyer, of Chicago, Hughes, of St. Louis, Peterson, of New York, Mason, Mattison, Mann and Wood, of Brooklyn, Day, of Boston, Crothers, of Hartford, Quimby, of Jersey City and Russell, of Winchendon, Mass.

A Tax for the Care of the Insane. — Governor Flower has signed the bill providing for the levying of an annual tax for the support of the insane under the State Care Act. In signing the bill the Governor filed a memorandum in which he says: "This bill marks an epoch in an important matter of State policy. It is the culmination of an agitation which has gone on in this State for many years for the State care of the indigent insane. The tax of one-third of a mill imposed by the bill will yield in round numbers $1,350,000, which, together with the sum raised from the patients whose support is paid by relatives and friends and the sum received from miscellaneous sources, will amply provide for the expenses of the State hospitals for the fiscal year beginning with the first of October, 1893. So long as New York and Kings Counties refuse to avail themselves of the privileges of State care, the saving to the remaining counties will average more than 50 per cent.

A State Ice Commission. — An excellent bill prepared by Dr. T. Mitchell Prudden, Director of the Physiological and Pathological Laboratory of the College of Physicians and Surgeons, has been introduced into the assembly. It provides for the creation of a State Ice Commission, to consist of three persons, at an annual salary of $3,000, but limiting the expenses of the commission to $40,000 a year. The bill makes it a misdemeanor for any one to cut or sell any unclean, impure or unhealthy ice, and specially prescribes that no ice shall be cut within five hundred feet from the outlet of any sewer or drain-pipe, or within five hundred feet of any stable or manure dump; it being the duty of the commissioners to see that the law is properly enforced.

The Croton Water-Shed. — The action of the Academy of Medicine protesting against the Webster bill giving the New York City Board of Public Works authority to purchase land on the Croton water-shed was without effect, as the bill was passed by the Senate on March 17th, notwithstanding the fact that the committee appointed at the meeting of March 9th went personally to Albany, and presented to the Senate Cities Committee a substitute bill creating a Croton Water Commission of five members having ample powers to preserve the purity of the water-supply.

Dr. Hans Virchow, son of Prof. Rudolph Virchow, of Berlin, who has come to represent the German Government as a Commissioner of Public Education at the World's Fair, arrived March 16th on board the *Lahn*. On being questioned by a reporter in regard to the matter of cholera, he expressed the opinion that the American people would have less to fear from the disease during the coming season than last year, on account of the precautions that are being taken in Europe. At Hamburg this is notably the case. While the Elbe was made a sewer for several cities along its banks, so that by the time it was received in the pipes at Hamburg it was entirely unfit to drink, new waterworks have now been built, and the water will be taken from a point much higher up the Elbe. At the same time great care will be taken to preserve the purity of the supply, and after its arrival in the city the water will be subjected to a special filtering process.

◆

Miscellany.

DOCTORS AND HOTELS.

We hope the kind of medical trader referred to under the above head, by the *Medical Record*, does not exist in Boston, although our contemporary seems to indicate that he flourishes in New York. If there are any such, we beg to assure them that the language of the *Record*, though plain, is mild, gentle and courteous compared to that which their prostitution of their profession merits. The *Record* says:

"Every person of sensitive morals, and a good many with only every-day sensibilities, would be shocked at the whole story of the [illegible] of doctors to hotels [illegible]. There is a [illegible] hostelry in this town where the hotel doctor charges [illegible] and we much mistake if the [illegible] two of it. We have heard it stated [illegible] that in many hotels the [illegible] doctor is [illegible] to give up from one-fifth to one-third of his charges to the business management. People who are taken ill in hotels feel particularly [illegible]. They [illegible] and are not [illegible] to question [illegible]. They [illegible] are until they come to settle the bill, and then expostulation is too late.

"We cannot understand how honest men can connive at these hotel methods. To charge an extra fee in order to [illegible] the landlord is, in plain words, robbery. We have no [illegible] code of ethics, but there is a standard of right and wrong of which most people see the justice and need. Doctors who do not follow it should be exposed, and the opinion of their professional brethren made known. This is not only right, but will sooner or later be imperatively demanded, or the public will protest, and the honor and honesty of the profession will be impeached.

"Doctors should not divide extortionate charges with hotel-keepers, and all who do should not be considered honorable men or regular members of the profession."

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INTERNATIONAL MEDICAL CONGRESS IN ROME.

In order to enhance success, the Central Committee have communicated with all the European railways and steamship companies to obtain more favorable terms for the visitors. The French Government have promised to reduce their railway fares fifty per cent. The North German Lloyd will make special arrangements later. The Spanish companies have decided to reduce them thirty per cent. In Italy the visitors will have every opportunity afforded them of visiting all the principal towns by circular tours, both by land and sea. Rome possesses a large number of hotels of first and second class, which the Executive Committee think will meet the desires of the most economical. Ladies will be eligible for membership.

◆

THE PASSAGE OF MICROBES THROUGH THE SKIN.

Wasmuth[1] describes experiments made both upon lower animals and upon man to determine the extent to which different micro-organisms can penetrate the skin. In man the pure culture of staphylococcus was rubbed into the arm; in animals, the cocci of erysipelas and anthrax. If the cultures were merely spread upon the skin, negative results were produced. By rubbing, it was found that the uninjured skin was permeable to those organisms, and that after they were introduced in this way, characteristic local and general disturbances were produced. The bacilli enter between the sheath and the shaft of hairs and not through the openings of the sweat or of the sebaceous glands.

◆

AN AUTOPSY FIN DE LA DERNIÈRE SIÈCLE.

[From the *Columbian Centinel*, August 21, 1790.]

At Dover, Mr. John Perkins, aged twenty-five. Mr. Perkins complained of his disorder being in his breast; he was unable to lie down, as it occasioned a stoppage of his breath, but was obliged to sit half-bent resting his breast upon a table placed before.

A short time before his death he desired he might be opened after his decease, for the satisfaction of his friends and the benefit of mankind. Accordingly, early in the morning following his death, Doctors Kittredge and Howe were sent for, who, after opening his breast, took therefrom a large excrescence weighing five pounds six ounces, and in substance something like an ox's brisket; it adhered very strongly to the breast and backbone, surrounding the windpipe, lungs and heart, and was undoubtedly the cause of his not being able to lie down. The heart was in a very flaccid state, weighing only nine ounces. The lungs smaller than in any natural state, weighing only two pounds two ounces. The liver weighed five pounds and a half, an uncommon size, though of natural color and sound.

◆

MALE HERMAPHRODITE LIVING AS A WIFE.

Kochenburger read before the Berlin Obstetrical Society in November, 1892, notes of a "woman," aged thirty-five, who had been married ten years.[1] She was accustomed to regular connection, which gave no particular pain, but was unattended by orgasm on her part. The menses had never been seen. The vagina was a blind canal not quite two inches long, and no other pelvic organ could be detected on exploration. In each labium were two cylindrical bodies, which A. Martin excised, as they caused pain. On microscopic examination, the two bodies proved to be testicle and epididymis. Hence the subject was an example of transverse male hermaphroditism.

◆

TUBERCLE BACILLI IN LYMPHATIC GLANDS.

Pizzini[2] reports a series of experiments which show that virulent tubercle bacilli may exist in lymphatic glands of persons showing no other tubercular lesions. These glands taken from persons who had died from different diseases were inoculated into guinea-pigs, and it was found that in forty-two per cent. tubercle bacilli were present in the glands. The author believes that tubercle bacilli may readily pass through the epithelial lining of the air-passages, reach the lymphatic glands and there remain quiescent, preserving, however, their virulence and in condition at any time to infect other tissues. The bronchial glands were by far the most commonly affected. In no case did he find any bacilli in the mesenteric glands.

◆

THE EFFECTS OF BAD AIR.

Haldane and Smith give the result of their experiments to determine the physiological effects of air vitiated by respiration.[3] The evil effects of the air of overcrowded and badly-ventilated apartments are ordinarily said to be due less to excess of carbonic acid than to the presence of an organic body or bodies, given off with it as a respiratory product. To this view the authors take exception, and consider the experimental evidence in favor of its support as of very doubtful value. The object aimed at in these experiments was to determine the physiological effects of air polluted by *normal* respiration and perspiration. Accidental vitiations arising from want of cleanliness, either in the room or on the part of the persons present, were not taken into account. The following are the chief conclusions at which they arrived:

The immediate danger of breathing air highly vitiated by respiration arises entirely from the excess of carbonic acid and deficiency of oxygen, and not from any special poison. The hyperpnœa is due to an excess of carbonic acid, and is not appreciably affected by the corresponding deficiency of oxygen.

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[1] Centralblatt f. Bakt., [illegible]

[1] British Medical Journal Supplement, February 4th.

[2] Zeitschrift für. klin. Med., xxi, 3.

[3] International Medical Magazine, March.

The hyperpnœa begins to appear when the carbonic acid arises to from three to four per cent. At about ten per cent. there is extreme distress. Excess of carbonic acid is likewise the cause, or at least one cause, of the frontal headache produced by highly vitiated air. for hyperpnœa from defective oxygen begins to be appreciable when the oxygen in the air breathed has fallen to this point, which seems to differ in different individuals.

◆

VIBRATIONS IN THE TREATMENT OF NERVOUS DISORDERS.

Charcot, in the *Progrès Médicale*, August 27th, describes the method of treating various nervous disorders by rapid and continuous vibrations. An apparatus produces oscillatory movements by means of an electro-motor, and the treatment has produced good results in some cases of neuralgia, neurasthenia, insomnia and other disturbances. The author believes that this vibration acts as a powerful sedative by its action on the brain. A helmet has been made by the help of which and a small motor a continuous vibration is produced, which is transmitted to the cranium. This is continued for about ten minutes and one application will often produce a good night's sleep, and continuous treatment shows very good results in different disturbances of the nervous system.

◆

THERAPEUTIC NOTES.

Methacetin[1] (Para-Oxy-Methyl-Acetanilid) is the colorless scaly crystals introduced in 1889, and which promised to supercede phenacetin. It derives its name from its analogy to phenacetin. The graphic formulas of these compounds show at a glance the close relationship, but it will suffice to state simply that methacetin differs from phenacetin only in containing a methyl group in the place of an ethyl group. It has been used successfully in typhoid fever, all forms of rheumatism, neuralgia, pneumonia, and in pretty much all forms of pyrexia, but from the record of the past year it has not yet equalled the results obtained by either phenacetin or antipyrin. Its use in pulmonary tuberculosis was not favorable, principally on account of the profuse night-sweats produced. Its advantages over all the other antipyretics, however, are its lack of poisonous properties and its comparatively ready solubility in water, being five times more soluble than phenacetin — its greatest rival.

Pheno-Salyl[1] is the name given to a recent antiseptic introduced by Dr. De Christmas after experimenting some time at Pasteur's Institute in Paris. It is little more than a mere mixture of

Carbolic acid, about	[illegible] parts
Salicylic acid, about	[illegible]
Lactic acid, about	[illegible] parts
Menthol, about	[illegible]

The menthol is added to the combined acids heated up to the point of liquefaction. This mixture is soluble in water to the extent of four per cent. Von Yersin finds that it is almost double in antiseptic effect to the carbolic or salicylic acid, and is only exceeded by corrosive sublimate. It is especially effective against the bacillus of anthrax. Sufficient time has not yet elapsed for others to report upon it.

Elixir of Cascara Sagrada.[2] — The following is recommended by Dujardin-Beaumetz:

℞	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	Aquæ [illegible]	[illegible] M.

Dose. Wineglassful [illegible].

A Combination for Tape Worm. — Dubouteau[3] recommends a mixture of the green extract of male fern, chloroform and castor oil against tape-worm. It may be given in capsules, and the maximum dose of the extract of male fern may be put down as 1.20 grammes, this, and even a lesser quantity, being sufficient to cause the expulsion of the entire worm.

Lemonade as a Vehicle for Chloral.[4] — Dr. E. Holland calls attention to the fact that the taste of chloral hydrate is effectively masked by lemonade. Two or three drachms of the syrup should be placed in a tumbler with about two ounces of water: if to this is added about two ounces or so of gaseous (bottled) lemonade, the mixture may be drunk at leisure, and the action of the drug is in no way impaired.

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[1] Squibb's Ephemeris.

[2] American Journal of Pharmacy.

[3] Nouv. Rem., Therap. Gaz.

[4] Practitioner, February.

RECORD OF MORTALITY

For the Week ending Saturday, March 18, 1893.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chicago . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Philadelphia .	1,092,168	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Brooklyn . .	955,333	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
St. Louis . .	[illegible]	—	—	—	—	—		
Boston . .	[illegible]	[illegible]	70	[illegible]	[illegible]	—	[illegible]	[illegible]
Baltimore . .	[illegible]	—	—				—	—
Cincinnati . .	[illegible]	111	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Cleveland . .	281,353	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Pittsburg . .	[illegible]	[illegible]	[illegible]	15.48	18.06	[illegible]	[illegible]	[illegible]
Milwaukee . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
Washington . .	[illegible]	[illegible]	[illegible]	8.80	21.60	[illegible]	—	—
Nashville . .	87,754	[illegible]	[illegible]	2.86	2.86		—	—
Charleston . .	[illegible]	[illegible]	[illegible]	3.45	17.25	—		
Portland . .	[illegible]	[illegible]	6	15.78	10.52	—	[illegible]	—
Worcester . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	—
Lowell . .	82,455	[illegible]	[illegible]	[illegible]	28.60	[illegible]	—	—
Fall River . .	82,128	[illegible]	[illegible]	21.75	4.35	[illegible]	—	[illegible]
Cambridge . .	[illegible]	[illegible]	11	11.28	33.84	—	—	[illegible]
Lynn . . .	60,809	[illegible]	[illegible]	[illegible]	23.80	—	—	—
Springfield . .	47,052	[illegible]	[illegible]	24.40	23.62	—	[illegible]	[illegible]
Lawrence . .	45,910	[illegible]	11	28.17	[illegible]	[illegible]	—	[illegible]
New Bedford .	[illegible]	[illegible]	2		[illegible]	—		—
Holyoke . .	[illegible]	[illegible]	11	5.00	40.00			
Brockton . .	32,783	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—
Salem . . .	[illegible]	14	[illegible]	[illegible]	[illegible]	—	—	7.14
Haverhill . .	30,065	6	[illegible]		[illegible]	—	—	—
Chelsea . .	29,479	13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Malden . .	[illegible]		[illegible]	[illegible]	—	—	—	20.00
Newton . .	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	—
Taunton . .	26,464	[illegible]	[illegible]		[illegible]	—	—	
Gloucester . .	26,008	[illegible]	[illegible]	[illegible]	—	—	—	12.50
Fitchburg . .	25,444	[illegible]	[illegible]	—	—	—		—
Waltham . .	[illegible]	5	[illegible]	20.00	60.00	—	—	
Quincy . .	[illegible]	7			—	—	—	
Pittsfield . .	[illegible]		3	33.33	33.33	—	—	[illegible]
Northampton .	15,484	5	2	—	[illegible]	—	—	—
Everett . .	[illegible]	[illegible]	1	—	—	—	—	—
Newburyport .	[illegible]		1	—	[illegible]	—	—	—
Amesbury . .	13,561	[illegible]	[illegible]	—	—	—	—	—

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup.

[illegible] typhoid fever 41, whooping-cough 48, cerebro-spinal meningitis 35, measles 23, [illegible]

[illegible] New York [illegible] From measles New York 8, Chicago 6, Philadelphia and Pittsburgh [illegible] New York 6, Washington 4, Chicago, Philadelphia, Brooklyn, Fall [illegible] New York 7 [illegible]

[illegible] greater towns of England and Wales with [illegible] whooping-cough 81, diphtheria 57, scarlet fever 41, diarrhœa 40, [illegible] Leeds, [illegible]

The death-rates ranged from 11.7 in Burnley to 27.6 in Plymouth; Birmingham 20.9, Bradford 19.5, Gateshead 17.2, Hull 19.2, Leeds 22.0, Liverpool 22.1, London 19.1, Manchester 22.8, Newcastle-on-Tyne 21.4, Nottingham 22.5, Sheffield 20.3, Sunderland 15.9, West Ham 15.6.

METEOROLOGICAL RECORD,

For the week ending March 18, in Boston, according to observations [illegible] by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.
	Daily [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	W	11	10	R.	C.	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W	N.W	11	9	C.	C.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	S.	4	[illegible]	C.	C.	
W.. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	[illegible]	[illegible]	O.	C.	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	[illegible]	[illegible]	F.	C.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.	[illegible]	7	O.	O.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	N.W.	[illegible]	[illegible]	C.	C.	
[illegible]														[illegible]

[illegible]

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 25, 1893.

J. M. FLINT, surgeon, detached from U. S. S. "Miantonomoh" and granted one month's leave of absence.

DWIGHT DICKINSON, surgeon, ordered to the U. S. S. "Mian-[illegible]

J. R. WAGGENER, surgeon, ordered to the Navy Yard, Norfolk.

M. C. DRENNAN, surgeon, detached from Navy Yard, Norfolk, and ordered to the U. S. Receiving-ship "Vermont."

H. J. BABIN, surgeon, detached from U. S. Receiving-ship "Vermont" and wait orders.

C. W. RUSH, passed assistant surgeon, sick leave of absence extended three months.

SOCIETY NOTICES.

[illegible] — The annual meeting will be held at 19 Boylston Place, on Monday, April 3d, [illegible]

Readers: Dr. Edward Cowles, "A Clinical Study of Melancholia." Discussion by Drs. S. G. Webber, E. S. Wood, G. F. Jelly and W. B. Hills.

Dr. George A. Craigin, "A Case of Pregnancy Complicated by Pneumonia and Empyema." Discussion by Drs. F. I. Knight, W. A. Dunn, J. B. Swift and S. H. Ayer.

At 9 o'clock, balloting for members.

[illegible]

Report of auditing committee.

JOHN C. MUNRO, M.D., *Secretary*.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — This Section will hold its regular monthly meeting, Wednesday evening, April 5, 1893, 19 Boylston Place, at 8 o'clock, punctually.

This will be the last meeting of this Section until November next.

Dr. C. M. Whitney, "Intubation of the Larynx; A *Résumé* of Seventy-eight Cases in Private Practice."

Dr. C. O. Thompson, "Horse-hair in Minor Surgery."

Dr. E. S. Boland, "A Case of Simultaneous Fracture of Each [illegible]."

CHARLES L. SCUDDER, M.D., *Secretary*, 94 Charles Street.

RECENT DEATHS.

GEORGE CHEYNE SHATTUCK, M.D., M.M.S.S., died in Boston, March 22d, aged seventy-nine years.

J. S. DORSAY CULLEN, M.D., died in Richmond, Va., March [illegible] years. During the war he was medical director of Longstreet's Corps. At the time of his death he was Professor of Surgery and Dean in the Richmond Medical College.

THE PAN-AMERICAN MEDICAL CONGRESS.

THE SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.

The Section on Dermatology and Syphilography of the Pan-American Medical Congress has been fully organized with eighteen honorary presidents, one executive president, eighteen secretaries, and six advisory counsellors. Communications, notices of papers, etc., should be sent to the Secretary,

DR. W. S. GOTTHEIL, 25 West 53d St., New York City.

BOOKS AND PAMPHLETS RECEIVED.

Papoid Digestion. By R. H. Chittenden, Ph.D. 1892.

A Topical Treatment of Bronchitis. By Edwin J. Kuh, M.D. Reprint. 1893.

Fixation after Excision of the Knee. By H. Augustus Wilson, M.D. Reprint. 1893.

The Medical Annual and Practitioner's Index, 1893. Eleventh year. New York: E. B. Treat.

Fifteenth Annual Report of the Trustees of the Danvers Lunatic Hospital, for the Year Ending September 30, 1892.

Irrigation of the Urethra and Bladder by Posture and Continuous Current. By B. H. Daggett, M.D., Buffalo, N. Y. Reprint. 1893.

Bulletin of the Psychological Section of the Medico-Legal Society. Vol. I, No. 1. By Clark Bell, Esq., Editor and Publisher, New York.

Proceedings of the American Microscopical Society, Fifteenth Annual Meeting held at Rochester, N. Y., August, 1892. Vol. XIV. Parts I and II.

The Year-Book of Treatment for 1893; A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1893.

Modern Homeopathy, its Absurdities and Inconsistencies. By William W. Browning, LL.B., M.D., Brooklyn. Philadelphia: Wm. J. Dornan. 1893.

Investigation Conducted by the New Hampshire State Board of Health, relating to the burning of the Strafford County Insane Asylum, Preliminary Report.

Foreign Born in Massachusetts: by Counties and Cities. From the United States Census of 1890. From the Massachusetts Bureau of Statistics of Labor.

A Clinico-Pathological Study of Injuries of the Head with Special Reference to Lesions of the Brain-Substance. By Charles Phelps, M.D., New York. Reprint. 1893.

The First International Congress of Gynæcology and Obstetrics. The Prevention of Hernia after Incision of the Abdominal Walls. By George M. Edebohls, A.M., M.D. Reprints. 1893.

History of the Life of D. Hayes Agnew, M.D., LL.D. By J. Howe Adams, M.D. With fourteen full-page portraits and other illustrations. Philadelphia: The F. A. Davis Co. 1892.

A Memorial to Congress on the subject of a Road Department at Washington, D. C., and a Comprehensive Exhibit of Roads, Their Construction and Maintenance at the World's Columbian Exposition.

Nuevo Concepto de la Histología de los Centros Nerviosos. Por el Dr. D. Santiago Ramón y Cajal, Conferencias pronunciadas en la Academia y Laboratorio de Ciencias Médicas de Cataluña en Marzo de 1892. Barcelona: Henrich y Ca. 1893.

The Diseases of the Nervous System. A text-book for physicians and students. By Dr. Ludwig Hirt, Professor at the University of Breslau. Translated by August Hoch, M.D., and F. R. Smith, M.D., with an introduction by William Osler, M.D., F.R.C.P. New York: D. Appleton & Co. 1893.

Lecture.

LECTURES ON SURGERY.*

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

IV.

GUNSHOT WOUNDS.

The lecture of the afternoon is on gunshot wounds. The reason for speaking of them is that, although we are not in a time of war, yet they are very common in civil life. Many of them occur as the result of accident; and the majority of them occur from pistols, simply because the pistol is the weapon that is most frequently carried, and it is often carried concealed. On account of the wounds being almost all pistol wounds, the balls are small, — 32 to 38 calibre; and the large minnié rifle ball we should not meet with in civil life, as a rule.

The Literature of the Subject. — In speaking of this subject, the first thing is to say a word with regard to its literature, for it has a literature of its own; and some of the older authors are extremely valuable. Hennen's "Military Surgery" was written in the eighteenth century. That was the first. Then the one who did the most, I think, to give to military surgery strong views of common-sense, the man who first advocated and gave the reason why in the gunshot wound of a large artery we ought to tie both ends instead of being contented with securing the bleeding end alone, was a Scotchman by the name of Guthrie. He followed Wellington; and his book was written on the campaign called the Peninsular War. John Hunter also wrote on gunshot wounds and with great success, as he did everything. The man with the largest experience in the world was Napoleon the First's surgeon, Larrey. He went through all his wars, thirteen or fourteen wars and innumerable battles; and was his surgeon-in-chief during all that time. He wrote a good deal, and saw an immense deal, of course. Then we come to the Crimean War. There was at that time a good book produced by Mr. Longmore, which is classical on gunshot wounds. Then the Schleswig-Holstein War, was the time that Esmarch wrote his remarkable treatise on the treatment of gunshot wounds. Then we come to the time of our own Civil War; and the results of the collection of the literature of the war are greater than exist in the annals of any other country; and the "Surgical History of the War of the Rebellion," edited first by Otis, and afterwards by other surgeons in Washington, is unsurpassed in its mass of statistics; in the rarity of its cases among such a mass of statistics; in the mode of illustration by photographs and wood-cuts; and it is also further illustrated by references to the Army Medical Museum, where many cases can be verified by pathological specimens. That is the greatest treasure-house of knowledge on gunshot wounds which exists. Later we come to the Franco-German War. We have Billroth and numerous other Germans, and several Frenchmen. Many of them have written good treatises.

I should say that during the very latest wars more advances have been made in hygiene than in the absolute treatment of wounds themselves. If you go back to old times and compare it to the treatment of modern times, you will find two great differences. The most conspicuous is due to the introduction of antisepsis; but quite as marked a difference between the results of wars of this century and the last, is due to the character of the weapons and the missile. In old times we had the smooth-bore musket and the round ball; in modern times the rifle and the minnié ball. The old musket inflicted a very different wound from the modern conical ball. The old round ball merely perforated the tissues and the bones, and did nothing but injure the parts it struck; in other words, it drilled a hole clean through the bone, not splitting it longitudinally at all. On the other hand, the great momentum and velocity and spiral movement of the conical ball splits a bone all to pieces. It will go through, but rips in all directions. This is not due to the false idea which used to be entertained, that when serious and terrible injuries were found upon the wounded, the enemy had been using explosive bullets. They are not often used. Their results must be peculiar if used — more like bomb-shells. The character of the missile, then, has made an immense difference.

Now what is a gunshot wound, and how does it differ from the ordinary incised wound? It is lacerated and contused, and to a certain extent burned; that is to say, the bullet is thrown with such velocity that it strikes the body almost, you might say, in a semi-molten state; changes its shape on the slightest impact; turns about and twists about certain tissues, and takes a tortuous and uncertain course — lacerated and bruised and slightly burned.

The difference in a gunshot wound from the ordinary flesh wound, or compound fracture wound, is that it is almost sure to suppurate; and Larrey, in his book, refers to one case that he saw where a man was shot through and through some fleshy part of the body, and to his great surprise that wound happened to heal by first intention. On the contrary, the ordinary gunshot wound has got to discharge necrosed tissues and sloughs; and it takes several weeks to do it; so that the simplest flesh wound inflicted by a ball takes from two to six weeks to heal even under the best treatment. I allude to perforating wounds where the ball has gone through and through the skin. If the ball has entered and lodged, then the prognosis is much longer, and sometimes, more severe. Modern antisepsis, however, may avert suppuration, if the wound is clean.

The ball changes shape. It is a curious thing; it is almost unknown to take a ball out of the human body and find it in its original shape. It is usually flattened down into a mass of lead, somewhat like a hammered-out piece of lead, or like a piece of coin with rough edges. It is turned from its course, by almost any object it meets; but it makes a great difference how fast it is going. If fired at short range, and having recently left the cartridge, it penetrates with great power; if at some distance, it is very easily turned from its course. The most curious instances of deflection have been known, especially with the old round ball; and Hennen and Guthrie give extreme instances; one, in particular, where a spent ball struck a man at the *pomum adami*, and went round the neck and came out without entering anywhere else. So, in estimating the course of the ball, besides the fact that any object it strikes may turn it aside, we have got to estimate two other factors; one is the position of the body, or the limb, at the time the wound was received; and the other is whether or not the part when struck happened to be in motion. Supposing a soldier was raising his arm to fire, three or four muscles in motion, the ball would strike and be twisted into an unusually tortuous course; not only by striking the parts which would turn it, but by the fact that muscles in motion would give a very different direction to it, a tortuous course; a lacerated, bruised, somewhat burned wound; and an uncertain depth, according to the momentum of the ball.

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* These are unwritten lectures, printed from the stenographer's reports. Verbal corrections are made, but no other material changes. They were delivered to the third and fourth classes as part of the regular course.

Now a great deal used to be said, and great stress was laid, upon the different appearances of the wound of entrance and wound of exit of the ball. It was said that the wound of entrance was a small hole, with the edges inverted, and the wound of exit a larger hole, with the edges everted. That, however, was more true of the old round ball than of the modern missile, which tears a way in, tears a way out, splits tissues; and sometimes you are unable to tell one wound from the other, whether entrance or exit. We must not confound those very marked appearances with the minute wounds of little bullets that are fired from some of the smaller revolvers. The tissues close over at once. It looks as if a little semicircular flap had been cut, the ball slipped in under, and almost nothing to show except a line under the tissues.

We are all familiar with the fact that if a pistol or gun loaded merely with powder happens to be fired close to an exposed part of the body, that the powder lodges in the skin, and the skin is severely burned; and this is all due to the proximity of the weapon to the skin. In the same way the cartridge which carries the ball, if held close to the surface against which it is fired, either in homicide or suicide, will give the powder burning and the staining of the skin up to a few inches distance, and not if the weapon is held farther off. This is important often in medico-legal investigations. We are all familiar, I think also, with the fact that a charge of shot acts very differently according to the distance from which it is fired. If fired close to, it makes a ball, as the French say; goes in in a body, and tears a wound through the tissues. It is not scattered, and goes precisely like a large slug; but if fired from a distance, it scatters more and more, according to the distance from which it is fired, and often penetrates but very little way into the tissues.

Large missiles never lose their momentum until they stop; never lose their ability to injure the part which they happen to touch. Those missiles which are of large size, such for instance as the round shot, fired from a long distance, we will suppose, have nearly stopped; perhaps the ball is merely rolling, almost ready to stop. At that very time it is capable of inflicting a crushing injury upon any part with which it comes in contact. If a round ball comes along his course, the soldier who is waiting to go into the line of battle may be tempted to catch one and to stop it with his foot; and the result is a crushed ankle, although the ball stops a few feet farther on. These spent balls, if they happen to strike any person near the end of their course, roll over the surface, as over the abdomen, and will inflict the same internal injuries that the cart-wheel will in going over the abdomen. They will not break the skin, but may rupture internal viscera, as the liver; they will not break the skin of the foot, but will crush the bones precisely as the foot which is caught in a vise, or an elevator. In other words, a large spent ball, although near the end of its course, possesses the power to pulpify muscles and break internal viscera without really breaking through the skin. The ball goes pretty quick. Nobody sees it. One of these curious things happens to a person; he feels something go over him, looks and there is no wound. He feels sick and faint and begins to vomit. This led to the curious belief, which had strong credit among many people, of injuries inflicted by the *windage* of a ball; that a ball passing within two or three inches of a person was as capable of inflicting fatal injuries as one which happened to strike him. This superstition was disproved by the experiments of a Frenchman, a few years ago. I will read a few words: "Monsieur ——, who recently made experiments to determine the influence a cannon-ball produces on the surrounding atmosphere in its rapid flight through it, had a machine constructed by means of which the force exerted by the wind of balls passing at various distances could be estimated. At three inches from it the ball produced not the slightest effect on the delicate instrument he had constructed. His conclusions are that projectiles passing close to the body exert no necessary influence on it; and that the wind of a ball is incapable of determining any lesion of the human body."

This was based on a careful set of experiments under government direction. On the contrary, those who fall mysteriously injured without a wound and without a ball to be found, have been struck by a spent ball which has passed over them.

What is the future destiny of the ball, provided it does penetrate the human body? If inflicting a flesh wound and lying only in the flesh, it is harmless. At first it forms a suppurating tract which leads down to it. Out of this sinus are discharged sloughs and foreign substances. Eventually, if the tract refuses to close, it assumes the character of a mucous membrane, precisely like the sinus we see in fistula and various other sinuses connected with deep-seated abscesses. If, however, it does not take on this condition, if the tissues possess sufficient vigor to close the wound and leave the ball in, then the ball has developed around itself a sort of adventitious tissue made up from connective-tissue, which is called a cyst. At any rate, a smooth and painless little membrane surrounds the ball. It lies in this little pocket; and if it happens to be well placed among muscles, which are not constantly being pressed and struck upon, it is carried for years, until the end of life, without doing the slightest harm. It does not inflict lead-poisoning, does not produce any other trouble, except that it is frequently the seat — all gunshot wounds are — of rheumatic pains as the patient grows older and is sensitive to changes of temperature. The destiny of the ball, if not extracted, is to become harmless and encysted, provided it is placed among the muscles. The only places in which it can do harm, and in which its extraction is imperative if it can be got at, are in the viscera, as the liver or spleen, or in the large cavities of the body, or in contact with bone — not only in a bone, but in contact with a bone. Here is a curious fact first pointed out by Hennen and Guthrie, and verified by subsequent writers, that no ball can lie in contact with a bone without keeping up a grating and rubbing which leads to caries and necrosis and permanent invalidism on the part of the patient. I quote the words of Mr. Guthrie: "As a rule, the ball should not be allowed to remain in contact with bone. If the ball lodges in the head of a bone, it gives rise to caries, amputation or death;

if it is in the shaft of the bone, it gives rise to necrosis, with years of misery; on a flat bone, caries, sinuses, contraction of the limb, and a useless life."

I will cite a case of my own, which was a very marked one. In that case the patient had been shot five or six years before, shot in the mass of the glutæi muscles behind the trochanter; the ball was never extracted; the sinus never closed; the gluteal region had wasted as in hip-disease. The pain and sciatic trouble was so great that it contracted the limb as in hip-disease, and the man walked with a crutch. There was a suppurating sinus in the gluteal region. Had it not been for his positive history of receiving a gunshot wound, he would have been considered an adult case of hip-disease, with abscess. After being etherized and the sinus explored, a ball was found and extracted, not in bone, but lying on the ilium; and it had eroded a little cavity on the ilium, in which it lay. The bone was carious and constantly discharging. It had not perforated; it had merely gone down and laid on the bone; and its contact there of six years had kept up abscess, suppuration, caries, whereas if it had stopped one-half inch farther out and rested in the glutæus muscle, it would have become encysted, and never given any trouble at all. That is quite a marked case of this peculiar state of things; so that if we have reason to believe the ball is in contact with a bone, we almost as much fear bad consequences as if we know it has penetrated the bone, and has lodged somewhere in the shaft or head of the bone. In the head of the bone it is almost inevitable that it has broken up and fractured the bone and will lead to destructive arthritis. In the shaft of the bone it not only perforates but splits the bone a long distance, makes the worst compound fracture, usually is followed by necrosis, and quite often requires amputation to save the patient's life.

What should be the treatment of an ordinary gunshot wound?

The first inquiry is to see if there are two holes. If there are two holes the ball is probably gone. In nine hundred and ninety-nine cases out of a thousand the ball has gone through, if there are two holes. It is almost against the possibility of the doctrine of chances that the patient should have been struck by two missiles making two wounds of entrance. Then it is a perforating wound. The ball has escaped. We have nothing to do but try to probe through the sinus and examine it. For what purpose? The cartridge does not follow the ball, but remains in the rifle. The ball has gone through clean and left only a track. Why should we insist upon probing and torturing the patient when there is every evidence that the ball has gone through? This opens up an important point in the treatment of gunshot wounds.

All substances carried in by the ball are infinitely more dangerous than the ball itself. A gunshot wound of the leg, for instance, cannot be inflicted without carrying a portion of the trousers or drawers into the wound. In other parts of the body it may carry into the wound all sorts of things, — a bit of leather or bit of metal, a portion of a button. Sometimes objects near the person are struck by the ball and carried through, as, for instance, a splinter from a small tree or shrub; various things of that kind are often carried into the wound. Remember, then, that threads and bits of cloth, etc., are infinitely more dangerous, when buried in the tissues, than a piece of lead.

An illustration of this we frequently see in modern times by the occurrence of tetanus after a very slight wound inflicted in the palm of the hand of children by what is called the toy pistol. This pistol has no ball, but has a cartridge filled with an explosive that makes a loud noise. The little boy almost always shoots himself in the palm of the hand at the root of the thumb. What goes in? The powder goes off. It is a piece of pasteboard, of which the little shell is made, that goes down under the palmar fascia, and there rots. It is not detected; it cannot be felt. Perhaps the concientious physician finds this little puncture, probes it, and contents himself with washing it out, but leaves the enemy under the fascia. This after a few days sets up a cellulitis of the gravest kind, which, together probably with the ingress of microscopic germs, inflicts such a shock upon the nervous system, that the spasms of tetanus set in; and when they have once set in, as a rule, it is too late to cure the case. Then perhaps some one detects the cause of the trouble, opens the part, turns out the bit of pasteboard and washes out the wound. That is what ought to have been done in the first instance, and such treatment would have prevented the trouble. The sale of this toy pistol has been forbidden by law, and we now have very few of these wounds; but five or six years ago we had large numbers of them. The cases of tetanus following these were frightful, and the mortality frightful.

This illustrates, from a matter of every-day experience, precisely the dangers which exist in the ordinary gunshot wound, which is not probed and washed out and kept cleansed from the foreign bodies which are carried into it, and which are far more dangerous than the ball. The woollen threads from the trousers or from the coat, for instance, are carried far into the wound. Impregnated with dye, they rot easily, set up a cellulitis and deep suppuration. Hence the first treatment of a gunshot wound should be to see if there are two holes and the ball has got out. Then the track must be thoroughly probed, washed through and through, so as to be sure no foreign substance is there; and in case great obstacles are met with, it is better to enlarge a little the wound of entrance or exit, both through the fascia and the skin, so as to be able to pass the finger through the tissues, in order to be sure that there is nothing there.

On the other hand, where we see an ordinary case of gunshot wound with but a single hole, we say the ball is there. There is the need of exploring that there was in the other case to extract the foreign bodies, and, if practicable, to extract the ball. If, for instance, the ball has entered the calf of the leg and gone in a straight course towards the tibia, we feel very solicitous lest it has perforated the tibia, or is lying in contact with the tibia, in either of which cases it will give rise to caries, necrosis and crippling of the limb. The best thing, of course, with which to explore a gunshot wound is the finger, and it is far superior to all the probes that can be used. The little finger frequently can be got in where the larger ones cannot, and if it can be carried down to the depths of the wound, it gives more information than any probe. Now the probe is uncertain. It may be twisted into various shapes and inserted in all sorts of directions until we can determine perhaps the direction of the ball. Down at a certain depth the probe strikes something hard. What is it? We cannot tell whether a ball or bone, unless we can tell anatomically. It was to obviate this that Nélaton devised the porcelain probe, which was used with such success in the case of Garibaldi. The latter, was shot, and carried a wound in his tarsus which would not heal. Nobody could find the ball, and M. Nélaton was sent for. With his peculiar probe he found the ball, extracted it and Garibaldi got well. This was a very fine history for M. Nélaton and for science generally. He coated the point of the probe with porcelain, so that upon striking the ball a lead mark was made upon the probe, and nothing else would do this. That probe was formerly used a good deal, but I do not think it is used as much as it was. There is a limited class of cases where the ball is far from the surface and in which it may give useful information; but the objection is that the end of the probe has got to be of considerable size. This will not go into a puncture; the size of the head will prevent it, so that sometimes it becomes perfectly useless, and the ordinary probe gives more information. Better than all is the finger, if it can be introduced by the process of *débridement*, or cutting the fascia in two or three directions, and passing the finger in to see what we can find, whether a foreign substance, or a ball. Billroth goes so far as to say that the ball that cannot be reached with the finger is not found and extracted by other instruments.

Electricians have devised several interesting means of making known the presence of a ball. One is by setting up a galvanic current which rings a bell at the hand of the operator when the ball is touched. This is of very limited application. It is a surgical toy, that is all. The finger is the thing, if it can be got in.

Supposing there is but one wound. The ball has pursued a tortuous course. We have traced it for two or three inches, and cannot reach it. Is it worth while to mutilate the person further to seek for the ball? It is not; for in the largest percentage of cases the ball would do no possible harm and would become encysted in the tissues. This is the case in the muscles of the calf or in the thigh, or under the forearm where it runs up on the interosseus sheath, or between the flexor muscles. Of course, we should ask the position in which the person was when the wound was received; ask the direction from which the gun was probably fired, if it can be ascertained; then endeavor to put ourselves in the position of the gun and the limb in the position in which it was, and follow that line, as far as possible, to discover the course of the ball. We should also, of course, in all cases where there is only one wound, examine carefully the limb in every direction about the opposite side, and on every side, to see if we can possibly detect anywhere a hard lump which may mean that the ball has perforated through and is lying under the skin, or in the cellular tissue. A good many balls are found from five days to a week after they were shot in, but not at first. The thing is overlooked; but presently there appears a black-and blue spot where the ball has lodged. This attracts attention, and somebody says, a week after the accident, "There is a black-and-blue spot." That is the ball almost invariably; and it may be cut upon and found. It may not show itself at first by any ecchymosis.

Now there is one peculiar danger in gunshot wounds that I do not think exists to any such extent with any other class of surgical injuries, and that is the danger of secondary hæmorrhage. Let us see why this is. It arises from the fact that the ball boring about through the limb in various directions passes over and bruises the vessels. It need not perforate them, need not nick them. If it nicks them you have immediate hæmorrhage. Supposing it bruises a large vein or artery. Subsequently that wound will not heal without some degree of suppuration and discharge of sloughs. The vessel is beating incessantly in the depths of the wound. Its bruised wall ulcerates and gives way, and hæmorrhage takes place, which is called secondary, because it comes on from the tenth to the fourteenth day after the receipt of the injury; and this hæmorrhage is, so to speak, irrepressible — nothing to stop it, no natural way to stop it by the forces of nature. The vessel is ulcerated; a ragged opening is formed, which communicates with the sinus. Blood is poured out, does not have power to coagulate; and the patient may have a fatal hæmorrhage, provided the ball happens to have bruised a large vessel.

Nicking a vessel is also common, and the consequence of that is the gradual formation of a traumatic aneurism. Take the femoral region. Suppose the ball passes through Scarpa's triangle, passes along the large femoral vessels. At first no external hæmorrhage of any consequence. The ball cannot be traced and found. The limb is done up, and suddenly begins to expand far more than can be accounted for by the bruising of the injury, and a large aneurism is formed.

The nicking of a vein may give rise to a sort of traumatic venous aneurism, the pouring out of large quantities of blood in the tissues.

Secondary hæmorrhage, then, is one of the real dangers always to be considered in the prognosis and in the care of the gunshot wound for the first fortnight after its reception. Not showing itself at first, totally buried out of sight beneath the tissues, it is very deceptive, insidious and dangerous; and I do not know any other class of wounds in which this occurs nearly so frequently as by a ball. Of course, it is possible to conceive, and it occasionally occurs, that a compound fracture pricks or wounds a vessel by a spicula of bone, and after a fortnight or so the same consequences of secondary hæmorrhage come on; but in the treatment of compound fracture, where we have the patient under control, the early closing up of the wound and antisepsis frequently convert it into a simple fracture, and it is possible the vessel may repair without bursting through. Not so with the gunshot injury. Not that these accidents are so extremely common; but it should be borne in mind by the surgeon as one of the gravest accidents that can happen, and one from which no gunshot wound is free, until it is healed.

Septic absorption, of course, is not infrequent after gunshot wounds received in war. Occasionally it occurs after those received in times of peace; but in times of peace the patient can be so much better taken care of that his chances of sepsis are less. Shot down on the field of battle, always in the heated season of the year — for all battles are fought in the summer as a rule; frequently lying exposed for twenty-four or forty-eight hours in the hot sun without attention, until his wounds become inflamed; and then carried off and transported in a rough way, it is not surprising that septic conditions follow gunshot wounds in times of war. This, of course, is especially liable to occur where the ball has penetrated and buried itself in the marrow of one of the long bones, where the fat-cells and the tissues in the marrow are bruised and hæmorrhage has taken place, and where there is, as we know, a very easy route for septic absorption to travel up.

Tetanus is much more frequent after gunshot wounds than after other injuries; and after several of the battles of our late war the statistics show a very large prevalence of tetanus, because the patient lay exposed for an unusual length of time in the heat of the sun, the nervous system became thoroughly exhausted, absorption of dirt germs ensued, and tetanic symptoms came on.

Osteomyelitis, of course, is common after gunshot wounds. Here is one of the great troubles in the subsequent treatment of such things as gunshot perforations of the tibia and of the femur. The ball goes in and lodges. It breaks up, as I said, the marrow, splits up the bone, and leads to necrosis inside the bone, the formation of a sequestrum, the gradual formation of new bone, and the usual phenomena of the opening of sinuses, getting rid of sequestra, etc., which may go on for years, and may wear out the patient's life.

The risk of sepsis, of tetanus, and the chances of secondary hæmorrhage, together with the fact that the rifle missile splits up the bone and destroys much further than we can see, are the great reasons why the law of practice with regard to amputating or not amputating in certain injuries is so very different in military life and gunshot wounds from what it is in civil life, and in wounds inflicted by other destructive forces. You have got to consider that you have your patient with an injury of the bone further than you can trace it; that he is subject to osteomyelitis, to septic absorption, that he has got to be moved; that his artery may be bruised and may bleed; and then you have got to ask yourself whether conservatism is to be considered a conservatism, which is going to save such a limb, or whether it is not more truly conservative to cut it off. I fancy, that during our late war, all those who were in the field, and who saw a good deal of service, suffered much from criticism at the hands of civilians because they were accused of performing needless amputations. "This man's limb might have been saved." "That man was not hurt so badly but what he ought to have got well and had a good limb." I contend that the person who looks at this problem from the side of civil life does not understand it; and probably too few, rather than too many amputations are performed in the time of war. Consider what it means to transport a compound fracture, in a hot climate, two or three days over the rough roads, before it can be attended to; on the other hand, consider how the person with an amputation nicely done up can escape hæmorrhage and sepsis better than in any other way.

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Original Articles.

THE INDICATIONS FOR TRACHEOTOMY AND FOR INTUBATION.[1]

BY HERBERT L. BURRELL, M.D.

The operation of tracheotomy has stood the test of time, and has saved thousands of lives. Intubation, a comparatively recent operation, has been placed before the profession by Dr. O'Dwyer, and has unquestionably saved many lives. At first it was thought that intubation would supplant tracheotomy. The ease, simplicity and instant relief which is accorded a child with dyspnœa by a successful intubation, as compared with the difficult, bloody and exhausting operation of tracheotomy, led many observers to compare the two operations, and to conclude that intubation would supersede tracheotomy. A number of years have gone by; both operations have been tried, compared, and deductions drawn. It is the writer's belief that each operation is useful, but in a selected field. These fields have not been defined; but by a consideration of the clinical condition of each patient, the anatomical situation and pathological character of the obstruction to respiration is it not possible to classify them? I shall present clinical types of dyspnœa from obstruction, as illustrating the provisional classification that I have used for the past four years. This classification is simply a step toward determining the specific value of each operation.

First Class. — Every practitioner has heard the harsh, stridulous breathing of a croupy child. We all know the alarm that fills the household. We all know that most of these cases can be relieved by medical remedies; but if in doubt regarding the relief which can be gained by these medical measures, one need not hesitate to perform an intubation. The performance of an intubation in this class of cases may seem unnecessary, yet it is distinctly a case, which, in the days of tracheotomy alone, filled the practitioner with many misgivings.

Second Class. — A child has been fretful and feverish for a few nights, has complained of a slight sore throat, and within the past few hours has talked hoarsely, but has had no real difficulty in breathing. One finds a child in robust or indifferent health, pulse rapid, temperature elevated to between 100° and 103°, slightly perspiring, and resenting interference. It is well known the amount of relief a child receives by improvising a canopy over the child's crib, and giving steam and suitable sedatives. If, however, this child is a long distance from medical aid, and is thereby deprived of the benefit of careful surgical watching, it is well known how at times the stridor increases with great rapidity until the child is practically moribund before skilled assistance can be secured. A skilfully performed intubation will place such a child out of danger, and will relieve both the parents and the practitioner of great anxiety. At the end of a few hours or days the tube can be removed, or is ejected, and the danger is passed.

Third Class. — A child with the foregoing history but who in addition has distributed over the fauces and uvula, and frequently on the pharynx, a thin, firm, adherent, yellowish membrane. The child has been ill from three to five days, and the hoarseness and difficulty in breathing have been progressive. In this case it is well to try steam; but the length of time which the hoarseness has existed (three to five days), indicates that the membrane has probably extended below the cords, and in this case it is better to perform tracheotomy.

Where with the above history the membrane exists as a thin, pellucid film on one tonsil, and the child has been ill but forty-eight hours, intubation is indicated.

Fourth Class. — A young child has been complaining of lassitude, has been slightly feverish, and has lost appetite for several days. It complains of being extremely tired; pulse is rapid, not especially firm; temperature is between 100° and 101°; and the face is flushed. On examining the throat you find distributed irregularly a grayish film with well-defined edges. The child has no laryngeal symptoms, and simply requires active medicinal and local treatment. If dyspnœa occurs early in the disease (within forty-eight hours), intubation should be performed. If the difficulty in breathing comes on late in the disease, especially if the edges of the membrane are not well-defined, or where there is great enlargement of the cervical glands, tracheotomy is indicated.

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[1] Read before the Boston Society for Medical Observation, January 2, 1893.

Fifth Class. — A robust child in seemingly perfect health has a sharp attack of vomiting and perhaps a chill. The child is extremely feverish, restless and complains of slight sore throat. A slight redness on the fauces is all that is noticed. On the second day there appears in the fauces membrane of a leathery consistency, grayish and sloughing, with marked enlargement of the cervical glands. The child has become pale and pinched, the pulse is small, temperature quite high, and possibly there is diarrhœa. The nares are frequently filled with grayish membrane, and there is a sickening odor about the child. There is quickened respiration, slight stridor, but there is only slight retraction of the epigastrium and intercostal spaces. We all know how powerless we are to meet this condition. It makes but very little difference whether tracheotomy or intubation are performed; they can simply relieve temporarily. Of the two operations where they are performed for euthanasia I prefer tracheotomy, for it enables the operator to more thoroughly clear the membrane from the trachea.

Sixth Class. — Œdema of the glottis from steam or fire is *per se* a condition indicating intubation. The scarification of the epiglottis is, of course, attended by marked relief; but where the patient is to be left for any length of time without skilled assistance intubation is a valuable resource.

The lodgment of foreign bodies in the larynx or trachea indicates tracheotomy. The relief from dyspnœa which is necessitated by deep-seated cervical suppuration or growths pressing upon the larynx demand tracheotomy. Where pressure upon the recurrent laryngeal nerve exists, it is a question which operation is demanded.

These six classes of cases are distinct in the writer's mind; and the division, while necessarily arbitrary, must be controlled by each individual case. Each patient with dyspnœa should be approached in an inquiring spirit as to the causation. It is absurd to do an intubation upon a child whose trachea and bronchi are lined with membrane. It is also unnecessary to perform a tracheotomy where the membrane simply covers one tonsil, and has slightly encroached upon the epiglottis. In a general way the younger the patient, intubation is more frequently indicated, from the fact that the larynx is relatively smaller under three years of age; in a general way when the membrane is below the vocal cords tracheotomy is indicated.

We can undoubtedly nourish better after tracheotomy than in intubation, although by means of blanc-mange, ice-cream, bananas and cream, bread-pudding, pulp of orange, jellies, soft-boiled eggs, beef-pepotnoid jelly, and nutrient enemata, the nutrition of an intubed child can be well kept up. Children differ in their adaptability to feeding after intubation. They will take sherry, champagne, taragona, milk-shake and brandy. After tracheotomy, on the other hand, there is occasionally difficulty in feeding, but, of course, in each instance resort may be had to the use of a feeding tube.

Indications for tracheotomy: dyspnœa, caused by pressure from new growths, enlarged glands, cellulitis of the neck, pressure on the recurrent laryngeal nerve (?) foreign bodies in the larynx or trachea; where new growths, fractures of the larynx or trachea (?), or where membrane (either diphtheritic or fibrous) has extended well below the vocal cords.

Indications for intubation: in the early stages of croupy children; in the cases of diphtheria where the membrane is principally in the fauces; in cases of dyspnœa in children dying of diphtheria, where the parents will not consent to a tracheotomy.

It may be noted that the writer has carefully avoided any reference to statistics in the two operations. The conditions under which the operations are, have been, and will be performed are so essentially different that such a comparison is, from my point of view, useless. Each operation has its field, and that in the hands of the general practitioner. It, of course, is always better if an operation can be performed by an expert.

The classification which I have given may be modified by further experience, but is submitted for criticism to the profession as a step in the direction of defining the indications for these two most valuable operations.

Every general practitioner should be able to perform both operations. They are each life-saving measures. They both require accurate anatomical knowledge — intubation requiring greater manual training and dexterity than tracheotomy. They should be applied in selected cases.

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THE SINGING VOICE IMPROVED BY NASAL TREATMENT.

Illustrative Cases.

BY EDMUND D. SPEAR, M.D.,
Aural Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

As the quality of musical tones depends upon the presence or absence of partials in those tones, so the quality of the singing voice is varied by the character of the tones produced in the resonating chambers of the upper air-passages. The importance of having clear nasal chambers for the production of the best tones is evident to all who are experienced in training or exercising the vocal organs.

By the laryngologist and by the modern aurist this function of the nose is daily recognized as of supreme importance. By neither of these specialists, however, is the extent of the nervous relationship between the parts concerned in phonation and those employed in respiration fully known.

There are, and always will be, some things which cannot be found out, but this statement is substantiated daily in the practice of either specialist. The specialist of the heroic order, who sacrifices tissues and structures regardless of functions, will certainly achieve something, if, in his efforts to remedy diseased conditions, he removes the offending structures altogether. For such an one, however, I have no suggestions.

There is an intimate and deep connection between the nervous supply to the tissues composing the so-called posterior turbinate body and those of the vocal organ or larynx. It is already known that this exists in the vaso-motor supply of sympathetic nerves through the cervical ganglia and their connections in some way with the thyroid gland whose function of regulating the blood-supply to the nose and ears I shall describe in a paper, now in preparation.

In consequence of disturbed functional relations in the systems of nerves concerned in regulating the circulation of blood in the venous sinuses or spongy tissue of the posterior turbinates, there is induced by a peculiar lack of inhibitory power a venous stasis. This condition is one of simple passive hyperæmia. There may be added thereto effects upon adjacent tissues to cause certain changes in them; hypertrophy for example. This state of congestion or increase of blood-supply is followed by an hyperæsthesic (over-sensitive) or an anæsthesic (insentient) condition of the parts, so that there is a tendency to rapid increase of congestion under slight stimulation or inactivity of vascular circulation even under strong irritation by ordinary means.

As a result of this hyperæmia the functional activity of the vaso-motor nerves is interfered with and there follows a reflex paralysis in the larynx, producing congestion and swelling.

If the nose is sensitive to sudden changes when subjected to the influence of temperature, of position and of external irritants (as of pollen in asthma), it will many times be noticed that the character of the voice is altered and acquires a nasal tone. This may be temporary or permanent. Not infrequently a hoarseness or partial loss of voice is a noticeable accompaniment of an obstructed condition of the nose. Occasionally there is hoarseness or lack of clearness and inability to use the voice for any length of time without fatigue. It is to these latter cases, which may occur without marked nasal obstruction, that attention is invited.

The subject of these affections can be made conscious of the existence of symptoms which point to the nose as the site of disease. He is always obliged to clear his nose in the morning — there is more or less sticky mucus in the back of his throat, which is with difficulty removed; a feeling of fulness, sometimes amounting to actual pain, is located above the palate, where there may also be more or less smarting or stinging, especially in the acute attacks which accompany "colds" in the head. As a rule, however, it is seldom easy to obtain a voluntary statement that there has been any annoying nasal affection.

The following more or less mechanical explanation of the causation of the affection of the vocal organs in these cases of aphonia of nasal origin is given in addition to the above.

The post-nasal spaces and venous sinuses are the seat of passive hyperæmia, the circulation of the blood is impeded, there is a rapid increase of congestion as soon as mechanical movements are made in the neighboring parts and the lower portions of the pharynx take up the extra blood, which in turn fills the vessels there, and it soon becomes impossible for the larynx with muscles, nerves, and vocal structures to be promptly relieved. Congestion of the vocal apparatus has then supervened. As it is necessary for the cords in the larynx to remain free from blood and for the muscles moving them to be quickly supplied and relieved, so that they will not become weighted with extra blood, this congestion produces changes in the voice.

Whether or not we explain these changes by the mechanical or by the nervous theory, it remains that congestion and functional disturbance of the larynx accompany certain conditions in which swelling of the turbinates is found and the symptoms, namely: fatigue when using the throat, hoarseness when exercising the voice, changes in the character of the voice, and inability to sing, all disappear after local treatment directed to the removal of swelling and hypertrophy in the nose.

These two illustrative cases emphasize my statements, for though they are not cases of the worst type, they present all the symptoms referred to and were quickly cured.

The first case was that of a strong, vigorous man who applied for advice regarding his voice, and for the relief of disagreeable choking sensations in his throat. Is a smoker and one inclined to good living. After a series of exposures in the open air at an inclement season, he contracted a severe "head cold" and has since been conscious that his right nasal space has been more or less obstructed. He uses his voice in singing and is anxious to take music-lessons, but fears that he will be obliged to give up singing on account of the increasing hoarseness which recurs after practising for a few minutes.

Learning this history I examined the pharynx and the nose. The pharyngeal mucous membrane was very much thickened, its blood-vessels dilated, and its surface covered with tenacious clear mucus. The left nasal space was normal, the right lower turbinate was greatly hypertrophied, engorged with blood, and extended from behind forwards as a wedge-shaped mass almost occluding the (right) nasal fossa.

Satisfied with my discovery and confident that local treatment would effect a cure, I made no attempt to inspect the larynx on this first examination, and as improvement set in almost immediately, I neglected to examine it at all. As the clinical value of this paper might not be enhanced by my own description of the appearances of this larynx except that it was congested, I may be pardoned for the omission.

The quality of his speaking voice was suggestive of congestion, in that while it was fairly clear, it sounded rough and cracked and would quickly become husky or obstructed unless the throat was constantly cleared. Treatment was extended over a period of ten weeks and consisted of applications, locally, to the pharynx and right lower turbinate, at periods varying from three to seven days. The medicaments used were cocaine (hydrochlorate), solution of iron (per sulphate), and chromic acid.

At the end of the period above stated, the patient had made a full recovery and on the day following the last application (which was of chromic acid), he began practising his music-lessons and sang without becoming hoarse or fatigued.

Another case presented nearly the same history. This was in the person of a healthy, middle-aged man whose throat and nose had for many years given him great trouble whenever he took cold. His voice always became hoarse at the first of an attack and there was soon noticed a burning feeling in the back of the nose, above the palate. The nose became obstructed and respiration through the mouth usually became necessary. Singing was impossible and never attempted at these times. For several months previous to application for treatment, the voice could only be used for short periods of time without causing a disturbance, which manifested itself by a nasal tone, and finally such hoarseness and fatigue as to stop the singing exercises.

Measures were taken for the cure of these symptoms and included applications of cocaine solution and iron to the lower turbinates throughout their extent. His voice improved so much in quality in so short a time that the theory of reflex inhibition upon the vascular supply to the larynx through the posterior turbinates seems most tenable.

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GRAFTING WITH PIGEON-SKIN.

BY [illegible], M.D., [illegible], MASS.

Situated as I am in a manufacturing centre, I am often called upon to attend those injured in our mills. In many cases it becomes necessary to do skin grafting; and the [illegible] method of performing the operation, suggested to me that I had better try the grafting of granulating surfaces with squab-skin.

The Thiersch method of grafting has one drawback, or at least one feature that makes it appear like quite an operation to the patient and his friends, and that is the giving of an anæsthetic in order to take the grafts from the patient or some one else. The taking of human skin probably adds to the brilliancy of the operation when considered by the laity; whereas this method of pigeon-skin grafting suggests little more to the patient than an ordinary dressing does.

In my first attempt at pigeon-skin grafting I selected a pair of young squabs that were of an age when the feathers had not yet shown themselves along the under surface and under the wings. I removed the featherless skin and placed it on a healthy granulating surface, which had previously been cleansed with a four per cent. boracic acid solution. The result of this first operation was fairly satisfactory. Since this first pigeon-skin grafting I have grafted a few times.

The last time I grafted a granulating surface the operation was as successful as any one could wish. I proceeded as follows: Having killed two squabs that were about one-half grown, I immersed them in warm boracic-acid solution and quickly plucked the feathers; then immersing them in a clean warm boracic solution, I proceeded to wash them. My next step was to skin them, removing large pieces at a time, which were immediately placed in warm sterilized water. The granulating surface having been thoroughly cleansed with boracic solution, and then with warm sterilized water, the grafts were placed upon it. Over the grafts gutta-percha tissue was placed, and then warm compresses wrung out in warm boracic solution; over these a layer of dry cotton, and then the bandage.

In my former operations the pus and the liquefied grafts had floated many good grafts and prevented their "taking." I therefore concluded to change the dressings earlier than I ever had before. About forty hours after the operation the dressings were removed, the pus and melted pigeon-skin mopped away with wet compresses; the grafts that were not melted were left in place, and over the surface was applied plain gauze with a layer of resin ointment spread on it, over this borated cotton, and then the bandage.

At the end of the next forty-eight hours it was dressed again in the same way, and at the end of the following forty-eight hours dressed again. Since this dressing it has been dressed every third or fourth day either with boracic vaseline or resin ointment.

Observations. — Do the grafts grow by a reproduction of their own elements? or do they simply stimulate the granulations, and cause them or the tissues underneath them to take on an epithelial growth?

In one case that I grafted the surface had been stripped by cogs. In the upper part of this lacerated area was a small island of skin that was not removed, but which in time became completely lost sight of, on account of the granulations having swallowed it up, so to speak; yet, later, this same skin came to the surface, and its edges finally coalesced with the skin at the margin of the wound and also with the grafts which had "taken," in close proximity to it. The swallowing of this island seems to me to be analogous to the swallowing of the epithelial cells, which later only spring to the surface just as this island did.

The success of this method of grafting in my hands appears to me to be equal to the success of the auto-epidermic-Thiersch method. Pigeon-skin grafting does not necessitate an anæsthetic; its failure does not discourage because squabs are as cheap as a can of ether, and you can graft without even the consent of the patient, or, in fact, the patient hardly realizing what you are doing.

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Clinical Department.

A SHAWL-PIN SWALLOWED.

BY ELLEN C. NORTON, M.D., NORWOOD, MASS.

On February 13, 1893, I was hastily summoned to a child thirteen months old, who had, about 8.30 A. M., swallowed a shawl-pin, the bead-end foremost.

The child was seated at a table playing with a spool and shawl-pin. The pin was thrown from spool into child's mouth, and swallowed with some difficulty, the mother related.

On my arrival, I passed a finger into child's mouth and throat, but could not feel the pin. The writer recalled the report of a case a year or two ago in which a child had swallowed a long pin with head at one end, and in which the pointed end was found in a day or two pointing through the skin in front of the stomach, and how the physician in that case, with a burst of genius, pulled the pin as far forward as possible, and cut it off close up to the skin, then pushed the stub free into the stomach. This stub, the head with a short piece of pin, came away from the bowels in due time without harm to child.

The writer fearing lest there might not be so favorable a turn in the tide in his own case urged the mother to go into the Massachusetts General Hospital with the baby for a few days, so that, if needed, immediate surgical aid could be rendered. This was objected to. A diet of Indian-meal bread was then urged, and avoidance of all physics. This advice was not followed, the writer afterwards learned. Castor-oil was given liberally, and the child at about five o'clock the next morning passed a shawl-pin measuring three and nine-sixteenths inches in length. The head measured seven-sixteenths of an inch in diameter.

The Population of France. — In 1891 there were 285,458 marriages, 5,752 divorces, 866,377 births and 876,882 deaths. As will be seen, the mortality is in excess of the natality by over 10,000. There were on an average 989 births for 1,000 deaths.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY J. T. BOWEN, M.D., BOSTON.

MEDICATED SOAPS.

Much attention has of late been given to this subject, and long lists of soaps medicated with a great variety of drugs have been presented to the profession by the manufacturers.

Buzzi[1] has previously written upon this subject, expressing the view that the present hard soaps are of little value, and proposing liquid soaps of three different varieties — a superfatted, a neutral, and an alkaline. In this article his views are further elaborated.

He points out that it is impossible for the solid soda soaps to retain volatile bodies, as carbolic acid. The drug has usually disappeared before the cake has been once used. Other soluble substances, or such as may be acted upon by the alkali of the soap, are dissolved or rendered inert by the constant wetting and drying that the whole cake is subjected to at every application. Other objections to the hard soda soaps are the necessity of always using water, and therefore never getting the effect of the soap undiluted; and the impossibility of measuring the quantity of the drug used.

He has therefore introduced a perfectly neutral, liquid potash soap, to serve as base for all medicated soaps. For the preparation of this soap those interested are referred to the original article. But as this form is too fluid to allow of the suspension of insoluble substances, as sulphur, white precipitate, etc., he has prepared as a second base a thick ointment soap, made by evaporating down the neutral potash soap. There are many advantages claimed for these liquid soaps. The amount needed for a single application may be separated from the whole amount, thus keeping the remainder uncontaminated. The potash is more keratolytic than the soda, and the drug is made to penetrate into the skin better on this account. Other advantages are the greater cheapness and convenience, and the possibility of accurate measurement.

Buzzi does not agree with Unna and others that all medicated soaps should be superfatted. There are many conditions of corneous hypertrophy, etc., where the presence of an alkali in the soap is of prime importance. He has therefore prepared an alkaline soap by adding to his neutral soap-base a fixed proportion of alkali, in the form of four per cent. of carbonate of potash. When a superfatted soap is indicated, he mixes from three to ten per cent. of lanolin with his neutral base. He maintains that drugs are better absorbed by the use of lanolin on account of its emulsifying properties.

The drugs are to be incorporated with the soap-base either directly without heating, or by the addition of small amounts of dissolving agents. Fats and resins must be first saponified and afterward mixed with the base. He has confined himself to the incorporation of single drugs with his soaps, until the subject shall have been more thoroughly studied.

There are no contraindications to the use of the soaps, and they may be employed even in the case of acute inflammations of the skin. Their proper employment in various conditions depends (1) upon the choice of the soap-base; (2) upon the quantity of soap used; (3) upon the amount of dilution with water; (4) upon the more or less energetic and prolonged massage; (5) upon the time during which they are left on the skin; (6) upon the subsequent wrapping of the part treated with some impermeable material.

With one or another of these three bases — neutral, alkaline and superfatted — most of the drugs commonly used in cutaneous therapeutics are incorporated, to form the medicated soaps. Buzzi appends a list of forty-seven soaps thus medicated, of which we enumerate a few of the more important.

Aristol Soap, made by adding five per cent. of aristol to the ointment soap-base, is especially recommended in psoriasis of the face.

Camphor Soap. — Ten per cent. of camphor is added to the neutral, the alkaline and the superfatted base. Recommended, with friction, in disturbances of the circulation, chilblains, hyperidrosis and comedones.

Carbolic Soap. — Three to five per cent. of carbolic acid, combined preferably with the superfatted base. There can be no good preparation of solid carbolic soap on account of the great volatility of the carbolic acid. Especially valuable in itching affections, as pruritus, and prurigo; less valuable in urticaria. A good disinfectant for the hands of surgeons and anatomists.

Chrysarobin Soap. — Ten per cent., combined with the ointment-soap base. Said to cause less dermatitis than chrysarobin ointment in psoriasis, and not to stain the skin and clothing so much.

Iodoform Soap. — Two per cent. of iodoform is added to a five per cent. camphor soap, the addition of the camphor being necessary on account of the insolubility of the iodoform, and not interfering with the latter's efficacy. Useful in almost all the cases where iodoform is now used in powder form.

Menthol Soap. — Menthol makes a capital fluid soap, when combined with either of the three soap-bases, in the strength of five per cent. It is especially useful in pruritus; less so in urticaria and eczema.

Mercurial Soap. — In thirty-three per cent. this soap is used as a substitute for mercurial ointment in the inunction treatment of syphilis, the destruction of animal parasites, etc.

Resorcin Soap. — Resorcin, if added in the strength of five per cent. to the neutral soap-base, makes a soap that keeps well if kept in the dark. Used in rosacea, acne, sycosis, seborrhœa capitis, etc.

Sulphur Soap. — Ten per cent. of sulphur added to the ointment base. Used in eczema, scabies, sycosis, acne, etc.

Sublimate Soap. — One part each of sublimate and oleic acid are mixed with ninety-five parts of the neutral soap-base. It is especially indicated in conditions of hyper-pigmentation.

Tar Soap. — The three fluid soap-bases make admiable preparations when combined with five per cent. or twenty per cent. of beech tar. The alkaline preparation corresponds to the combination of tar, sapoviridis and alcohol of the elder Hebra and fulfils the same indications.

Thiol Soap. — Thiol, ten per cent. mixed with the soap-bases is used as a substitute for ichthyol, as it is considered to possess all the efficacious qualities of the of the latter drug. It is indicated in seborrhœa, rosacea, acne, etc.

White Precipitate Soap. — Ten per cent. of the white precipitate of mercury mixed with the neutral and

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[1] F. Buzzi: Beitrag zur Würdigung der Medicamentösen Seifen. Ergänzungsheft, Monatsh. f. Prakt. Derm., 1891.

[illegible] Its indications are the same as those of white precipitate ointment.

[illegible], that a two years' trial has convinced him that the medicated liquid soaps, as used by him, are greatly superior in most cases to the solid medicated soaps.

ICHTHYOL.

Schwimmer,[2] of Buda-Pesth, gives the result of his observations on ichthyol in the *Wiener Mediz. Wochen*-[illegible], pp. [illegible]–1187.

Erythema is regarded as an affection of the skin occasioned by nervous influences, and accompanied by vascular paralysis. In a large number of cases, Schwimmer has observed that the erythema subsided much more quickly under the influence of ichthyol than under expectant or other treatment. A case of erythema which had gone on to the stage of exudation, is cited, where a part of the lesions were treated with ichthyol, while the rest were simply powdered or treated expectantly. The lesions treated by ichthyol disappeared much the more quickly. He does not consider ichthyol as a specific for erythematous affections of the skin, however; but as one of the remedies whose action is most sure. Control experiments have proved its superiority to sulphur and bismuth. In erythema nodosum the effect of ichthyol is not so striking, although it is not without value. Its action depends upon the astringent power that it has upon the vessels.

Erysipelas. — Here the action of ichthyol is incontestable. He has for two years employed exclusively ichthyol in an aqueous solution:

℞ [illegible] . . . [illegible] grammes.
[illegible] . . . 1[illegible] grammes. M.

In patients with elevation of temperature, and considerable inflammation and tumefaction of the skin, good results have been obtained by applications made two or three times a day with this solution, taking care to overstep the limits of the affected parts. The action is not so pronounced in cases of erysipelas consecutive to disease of the skin. He thinks that ichthyol arrests the progress of erysipelas by destroying the growth of the pathogenic micrococci.

Acne and Acne Rosacea. — His first step is to convert a disseminated acne into a diffuse inflammation. For this purpose he uses the following ointment.

℞ [illegible] . . . [illegible]
[illegible] . . . 10.0
[illegible] . . . [illegible] to [illegible] M.

A light coating of this ointment is applied in the evening for one or two hours, upon a portion of the face, then the part is bathed in warm water and powdered with an indifferent powder during the night. Usually, after one or two weeks a more or less intense inflammation and desquamation of the parts treated are produced and the acne papules have almost completely disappeared. At this stage the use of ichthyol is begun, the inflamed parts are painted two or three times a day with the ichthyol solution, and covered at night with an ichthyol ointment. If vascular dilatation coexists with a small number of papules or pustules, long-continued applications of ichthyol have been rewarded with good results.

Eczema. — In this affection variable results have been obtained. In cases where we have a diffuse redness of the skin with serous effusion, a solution of twenty or thirty per cent. ichthyol has an irritating action, so that it is necessary to suspend treatment from time to time. In chronic forms, where the eczema in consequence of preceding treatment has reached a period where there is little tendency to complete healing, ichthyol often succeeds well. For the intertrigo of children, ichthyol has seemed more efficacious than any other treatment.

Ichthyol may also be employed in psoriasis, sycosis, furunculosis, lymphangitis, as well as idiopathic and traumatic dermatitis. Its action is marked in acute inflammations, slight in chronic. The ichthyol varnish is spoken of as having rendered good service.

℞ Ichthyol }
Amyl. } . . . aa 20.
Aq. dest. . . . 50.
Albumin . . . 0.5–1.0 M.

GENERALIZED CRUSTED ERUPTION WITH LOSS OF THE NAILS, CAUSED BY GONORRHŒA.

Vidal[3] reports to the French society of dermatology the case of a man of twenty-four years, who had first contracted gonorrhœa at the age of eighteen. Three months before entrance he had had a fresh attack of gonorrhœa accompanied by a polyarthritis, and six weeks before, he had noticed crusts upon the right knee, which were soon followed by similar appearances on the hands and feet, especially marked on the palmar and plantar surfaces. According to the patient, these crusts were not preceded by vesicles or bullæ.

Upon entrance he was found to be much enfeebled from a prolonged gonorrhœal polyarthritis. The gonorrhœal discharge continued, and several of the joints were swollen and tender. The skin was covered by a symmetrical and generalized eruption of hard cornified dry crusts, without a trace of moisture. These crusts were small upon the head and face, but were much larger on the trunk and extremities. The right hand was covered on its palmar aspect with yellowish-brown crusts embedded in a thickened epidermis, which resembled greatly the cornified lesions of syphilis. The ends of the fingers were covered with a thick confluent crust which had raised up the nails — already almost detached. The soles of the feet were similarly invaded, and many of the nails of the toes were already loosened.

Owing to the enlargement of the inguinal and cervical glands, and to the appearances upon the palms and soles, the patient was placed upon antisyphilitic treatment, but without result. By watching the evolution of the lesions, it was found that the crusts were only exceptionally preceded by vesicles or vesico-pustules, the first appearance being a small, dry, yellow crust, which extended peripherally. Section of the harder masses, showed under the microscope a stratification of cornified epidermal layers, much resembling a cutaneous horn. No pathogenic microbes were detected. In the course of the affection almost all the articulations were affected, and almost all of the nails of the fingers and toes were separated and cast off. After seven months residence in the hospital the patient was discharged well, the arthritis and formation of crusts having gradually disappeared, and new, well-formed nails having taken the place of those that had been lost.

Nineteen months after leaving the hospital, the patient contracted a fresh gonorrhœa, accompanied by conjunctivitis and a fresh arthritis. The gonococcus was found in the discharges from the eye. Readmitted into the St. Louis Hospital, he was found to be covered with an eruption of crusts (similar to those seen in the first attack) which had begun upon the anterior region of the throat and upon the back. The palms and soles were also similarly affected. The nails of the toes were lost.

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[2] Rev. [illegible], February, 1893.

[3] Annales de Derm. et de Syph., January, 1893.

Vidal considers that the recurrence of the cutaneous lesions, whose pathogenesis had been doubtful in the first attack, warrants the conclusion that they are to be regarded as a direct manifestation of the gonorrhœal infection, due to the same cause as the gonorrhœal polyarthritis, which had been in the two attacks the characteristic symptom of the infection. To the erythematous, bullous, and vesicular eruptions, already described as occasioned by a gonorrhœal infection, we must now add a general symmetrical eruption of cornified crusts, accompanied by loss of the nails.

(To be continued.)

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, January 2, 1893, **Dr. S. G. Webber** in the chair.

Dr. H. L. Burrell read a paper on

THE INDICATIONS FOR TRACHEOTOMY AND INTUBATION.[1]

Dr. E. H. Stevens: From my own observation it seems to me that it is going to be pretty difficult to always make a classification of cases in regard to the choice of operation. The doctor who is called in to do the operation is generally called when emergency exists. Something must be done right away. He has to decide late in the disease, and to make the classification it seems to me would be rather difficult in the majority of cases as I have seen them. I have a table with me of thirty-five cases of tracheotomy and thirty cases of intubation.

Thirty-Five Cases of Tracheotomy

No.	*Date.*	*Age.*	*Sex.*	*Result.*
1.	Jan.	2	M	Died on 3d day.
2.	Feb.	4	M	Died on 2d day.
3.	Feb.	7	M	Recovered. Tube removed 7th day.
4.	March	3	F	Died on 5th day.
5.	April	2	F	Recovered. Tube removed 6th day.
6.	April	2½	M	Died on 2d day.
7.	June	4	M	Died on 4th day.
8.	June	6	M	Recovered. Tube removed 8th day.
9.	June	3	F	Died on [illegible] day.
10.	July	5	F	Died on 2d day.
11.	July	2½	M	Died on [illegible] day.
12.	July	4½	F	Died on 2d day.
13.	Sept.	5½	F	Recovered. Tube removed 6th day.
14.	Sept.	[illegible]	M	Died on 3d day.
15.	Nov.	2	M	Died on 1st day.
16.	Nov.	7	F	Recovered. Tube removed 9th day.
17.	Nov.	3	M	Died on 2d day.
18.	Nov.	5	M	Recovered. Tube removed 11th day.
19.	Jan.	5	F	Died on [illegible] day.
20.	Feb.	4½	M	Died on 1st day.
21.	April	3	F	Died on 3d day.
22.	April	5	F	Died on 4th day.
23.	May	[illegible]	M	Died on 8th day. Tube out on 7th day.
24.	July	2	F	Recovered. Tube removed 7th day.
25.	June	4	M	Recovered. Tube removed 7th day.
26.	July	[illegible]	M	Recovered. Tube removed [illegible] day.
27.	July	4	F	Died on [illegible] day.
28.	July	3	F	Died on 2d day.
29.	Sept.	4½	M	Died on 5th day.
30.	Sept.	[illegible]	M	Died [illegible]
31.	Oct.	3½	F	Died [illegible]
32.	Nov.	6	M	Recovered. Tube removed [illegible]
33.	Nov.	4	F	Died [illegible]
34.	Dec.	2½	F	Died [illegible]
35.	Apr.	7	F	Died [illegible]

35 cases, [illegible] males and [illegible] females.

[illegible] deaths.

10 recoveries, 6 males and 4 females.

Ages of those recovering: [illegible]

Cases [illegible] [illegible]

Months in which recoveries took place: February, 1; April, 1; June, 1; July, 3; September, 1; November, 3.

Thirty Cases of Intubation.

No.	*Date.*	*Age.*	*Sex.*	*Result.*
1.	April	2½	F	Died in 48 hours.
2.	May	6	M	Recovered. Coughed up [illegible]
3.	July	11 ms.	M	Died in 36 hours.
4.	Oct.	6	F	Recovered. [illegible] troduced in 6 hours; removed 13th day.
5.	Aug.	4	M	Recovered. Tube coughed up [illegible]
6.	Nov.	7	M	Recovered. [illegible]
7.	Nov.	4	M	Recovered. Tube coughed up and [illegible] duced 3 times; removed 9th day.
8.	Nov.	4	M	Died in 36 hours.
9.	Dec.	[illegible]	M	Died in [illegible] hours.
10.	Jan.	3	F	Died in 48 hours.
11.	Feb.	6½	F	Recovered. Tube removed 5th day.
12.	March	4	M	Died on 6th day.
13.	March	4	F	Died on 5th day.
14.	March	3	F	Died on 3d day.
15.	April	5	F	Recovered. Tube removed 6th day.
16.	April	3	M	Died in 46 hours.
17.	April	2	M	Died on [illegible] day.
18.	May	11 ms.	F	Recovered. Tube coughed up on 4th day. Breast fed.
19.	May	17 ms.	F	Recovered. Tube removed 7th day.
20.	June	[illegible]	M	Died on 4th day.
21.	July	6	M	Recovered. Tube removed 7th day.
22.	July	14 ms.	M	Died on 3d day.
23.	Oct.	4	F	Died in 50 hours.
24.	Oct.	2½	F	Died in 20 hours.
25.	Nov.	5	M	Died on 6th day.
26.	Jan.	3½	M	Died on 3d day.
27.	Jan.	13 ms.	M	Died in 32 hours.
28.	July	18 ms.	M	Died in 12 hours.
29.	July	4	M	Recovered. Tube removed 6th day. Reintroduced twice. Removed 12th day.
30.	Sept.	4	M	Died. Tube removed [illegible] [illegible] four hours after removal.

30 cases, 18 males and 12 females.

19 deaths.

11 recoveries, 6 males and 5 females.

Ages of those recovering: 6, 6, 4, 7, 4, 6½, 5, 11 months, 17 months, 6, 4.

Months in which recoveries took place: February, 1; April, 1; May, 2; July, 3; August, 1; October, 1; November, 2.

Since my first case of intubation I never have done tracheotomy, because in the cases I have seen it seemed to me intubation answered every purpose that tracheotomy would. It is certainly very much easier to do intubation than tracheotomy. I never have seen a parent or family who objected to having intubation done, but they generally object to tracheotomy. The physician is often called to these cases in the night, often among poor people, with poor surroundings and poor light and perhaps nobody to hold the lamp, so that the difficulties that may attend tracheotomy are many. Intubation, however, can be done in the dark as well as in the light.

I would agree with Dr. Burrell that intubation is more easily done than tracheotomy. It seems to me tracheotomy in diphtheria is one of the most difficult operations a surgeon can undertake. I believe in the majority of cases intubation will answer every purpose, that we shall get nearly all the good results that we should get in doing tracheotomy. I believe that there are cases where tracheotomy will answer better than

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[1] See page [illegible] of the Journal.

[illegible] I have seen cases where I have done intubation, and wished afterwards tracheotomy had been done, on account of the difficulty of keeping the tube in place, the filling up of the tube, and having to remove it to get away obstructions. In such cases I believe tracheotomy would answer better. It is easier to feed the patient after tracheotomy than after intubation. So far as my experience goes, I should say in half of the cases of intubation, feeding by the mouth had to be practically suspended on account of the difficulty there is in preventing food passing through the tube into the trachea and bronchi. Coughing induced by it is distressing, and it seems to me takes away a good many of the chances of recovery. I have found that injections of peptonized milk and other nutrient injections sustain the child very well; and it is my custom now to rely almost entirely upon this, and to suspend feeding by the mouth. I believe, as Dr. Burrell says, semi-solids are more safely taken than liquids.

In my series of tracheotomy cases I have one boy operated upon twice at an interval of a year. Out of the thirty-five cases of tracheotomy there were ten recoveries, besides one case which died twenty-four hours after the removal of the tube by the sister suddenly raising the patient to a sitting posture. In the thirty cases of intubation there were eleven recoveries, and one case where the child died from failure of the vital forces after the removal of the tube. In this case there was a very large amount of exudation in the fauces and a good deal of systemic poisoning. When the tube was removed the child was breathing well.

The largest number of recoveries occurred in the summer months in both instances.

I think intubation a very valuable operation, and one which will be used more than at present. It will not supersede tracheotomy; but, by having the operation, tracheotomy will be done much less frequently than formerly.

Dr. Lovett: It seems to me the question of operation in most cases is not what decides the question of life or death. The majority of these cases of laryngeal diphtheria are going to die any way; a certain small proportion are going to get well any way with any decently performed operation; and the question of vital interest must apply to a small proportion of the cases. We do not know in advance which those cases are, so that the question comes up in every instance whether tracheotomy or intubation should be done; and I do not see how we shall get at it unless we go to work as Dr. Burrell has.

I think there are certain conditions which prevail in the two operations which are significant. Of course, most of my experience has been in hospital, with the severest and worst type of diphtheria; so that I have no doubt that the class of cases Dr. Stevens speaks of may have been milder and of a different sort.

In intubation one has a tube running through the throat into the trachea. It seems to me that the air that this child receives is different from what it is where there is a tracheotomy tube communicating with the outside. The air passes through a septic mouth or nose in cases of severe diphtheria, and into the lungs certainly not in as good condition as it comes in through the tracheotomy tube. A second consideration is the amount of discharge. After tracheotomy large quantities of disintegrated membrane, mucus and pus are ejected through the tube. The children who do best have the largest amount of discharge. After the intubation cases there is certainly no such excretion of discharge. It may be due to the irritation of the tracheotomy tube in part; but, taking cases as they come, the intubation cases do not spit up this detritus that we see so much of in the tracheotomy cases. Whether that is swallowed, or does not occur, or is inhaled, I do not know; but on general principles one would say free drainage was a favorable condition.

With regard to the nourishment. In most cases of laryngeal diphtheria it is the disease that kills, and by septicæmia rather than by extension; that is, it is blood-poisoning, not extension, in most cases that causes the fatality. Now, the giving up of a stimulating diet for a diet of soft solids is in a general way to place the child in more unfavorable conditions. I think in these three points — first, in the matter of air; second, in the matter of drainage; and third, in the matter of nourishment — one would say on general principles that the child who had tracheotomy done was more favorably situated than the child after intubation.

I think, on the other hand, intubation has a strong hold, because it is done earlier; it is done where tracheotomy would not be done, and where the parents would not permit tracheotomy. It therefore saves life where tracheotomy could not.

In regard to Dr. Burrell's classification, it seems to me as if certain of the cases he describes as suitable for intubation were cases of severe diphtheria in the early stages; and in severe diphtheria I think Dr. Burrell would agree with me in preferring tracheotomy. It seems to me that if intubation is done in the conditions he describes, a certain number of those cases would prove to be severe diphtheria, and the operator would regret not having done tracheotomy.

With regard to secondary tracheotomy, the results of that have been, I think, generally unfavorable. In my own experience it has been invariably fatal. At the City Hospital Drs. Prescott and Goldthwait reported, I think, fifty cases with five recoveries; and the experience of foreign operators has been very unfavorable indeed, showing only a very small percentage of recoveries. It seems therefore that, if tracheotomy is going to be done, it ought to be done early, and that in these severe cases tracheotomy is the operation rather than intubation.

There is one other matter, and that is with regard to cases of primary laryngeal or tracheal diphtheria, where I think intubation is accompanied by most disastrous results — cases where dyspnœa begins rather suddenly and increases rapidly, and where the throat is free from membrane. I have seen a moderate number of those where the operation of intubation has been done, and with little or no relief. I fancy there would be little to hope from tracheotomy; but certainly some of them get well.

It would seem to me best to limit intubation to the cases of children under two or three years of age; I think, under two, intubation practically always should be done. I think intubation could be done in very mild cases of diphtheria where the surgeon has to judge for himself as to the severity without any special symptoms that he can lay his hand upon; and intubation ought to be done for euthanasia where the larynx is blocked and the case hopeless. In other cases it seems to me that tracheotomy, on general principles, is the better operation.

Dr. C. M. Whitney: I was glad to be present to hear the paper and the discussion which followed it. I think that the result of one's experience and observation depends largely upon the kind of cases he has seen, whether in hospital or in private practice. I was glad the reader selected this subject for a paper, because it seems to me the profession in general have not had a full appreciation of the value of the new operation for laryngeal obstruction. My own experience during the last five years in private practice has made me more strongly impressed with the value of the operation than I was during my earlier experience in the first year of its performance in the City Hospital. An operation performed at home is different from one performed at the hospital. At the hospital, with skilled assistants, either operation is relatively simple and safe. At the home of the patient, with the absence of these necessary adjuncts, tracheotomy becomes difficult and dangerous. Intubation, on the other hand, is comparatively safe and simple. I think those who have seen the largest number of cases will agree that after the performance of a certain number of operations one gets a certain familiarity with the feel of the parts and a certain dexterity in manipulation which the beginner does not possess. I have done intubation over seventy times, with thirty-three per cent. of recoveries. These cases have been done in varying surroundings; have been done at the homes of the poorest patients. In a small number of cases careful nursing has been had. In the majority of cases the child has been cared for by the mother or some relative. I have never had a refusal from the parents to do intubation, and what is more to the point, a reintubation in cases where the tube was coughed out. In the matter of nourishment, which is of the greatest consequence in these cases, I think the danger has been a little exaggerated by Dr. Lovett. In the cases I have observed, during a large portion of the time the tube remained in position the children were certainly not suffering for nourishment. Children of three years were able by allowing them to take the glass in their own hands to swallow. I have seen a child swallow a half-glass of milk with no difficulty except to cough at the end; and in one case where it seemed to me tracheotomy would have been entirely out of the question — a child practically moribund, unconscious, could not be made to open its eyes by a loud tone of voice, pulse weak, the child breathing with great difficulty — the question arose as to what operation, if any, should be done. Certainly tracheotomy would have been out of the question, and it seemed dangerous to lift the child even to do intubation. The tube was easily inserted, and the child began to breathe easily; and at the end of half an hour was better in color, asked for nourishment, and swallowed two tumblerfuls of milk. This is the largest amount I have seen swallowed immediately after operation. After a day or two children attain a certain facility in swallowing milk, soft solids, etc. I am a believer in the early administration of alcoholic stimulants.

In regard to the technique of the operation, I think one gets the best view and feel of the child's epiglottis, which is the important landmark to look for, by having the child in the arms of the parent, the head resting on the bend of the elbow, and the operator at the side of the patient. That gives a working space in the throat, which is of consequence in young children; and it saves oftentimes the striking of the gag against the shoulder of the person holding it, and the uncomfortable occurrence of having the teeth shut down upon the fingers of the operator. These matters of technique have a bearing upon the success of the operation.

Although the discussion to-night is upon the indications rather than the accidents of intubation, I think Dr. Lovett omitted, in considering the matter of the mortality of the two operations, the fact that out of 327 cases of tracheotomy and 129 of intubation, if I recollect correctly, there were 21 operations in which immediate tracheotomy was found necessary. I think those figures have not the relative importance that they seem to have, because out of some 200 cases which Blair reports and several hundred Dillon Brown reports, immediate operation has not once been necessary. At the hospital at my time tracheotomy was usually performed by the visiting-surgeon. Intubation, on the other hand, is usually done by the house-surgeon in the presence of some of the executive officers. I hardly think the average house-officer would insert the tube more than eight or ten times, and would hardly have the dexterity of one who had inserted it oftener, so that any accidents due to lack of dexterity should be no discredit to the operation.

I think the clinical significance and anatomical appearances of the throat made by Dr. Burrell would be of advantage if we could in every case learn to observe with reference to those points. One observes the condition of the membrane, and recollects the result; but the association of the appearance of the throat and the result of the case is not always observed. In one class of cases in particular I think tracheotomy may be preferable to intubation, namely, where there are greatly enlarged tonsils. I think that the operation of intubation is a growing one, because it can be performed under any circumstances. In perhaps ten per cent. of the cases I have seen, the tube has been coughed out within one half-hour after the operation; and in those cases a larger-sized tube has been inserted and retained. After the first twenty-four hours, if the tube is coughed out, it often happens that reintroduction is not necessary. The child sometimes coughs out the membrane after the removal of the tube.

Dr. F. B. Harrington: My experience is not very large, either in tracheotomy or intubation. I think I could say, if it were not for the difficulty of feeding, that I should in the great majority of cases prefer intubation to tracheotomy. The difficulty in feeding has been to me a very troublesome thing. I know I have had patients in whom more could have been accomplished — one cannot tell exactly how much in the way of life-saving — if I had inserted the tracheotomy-tube. I think in the majority of cases intubation is a very easy operation. I never should want to go to a case of obstructive diphtheria without both tracheotomy and intubation tubes. Of course, those cases in which there is obstruction low down, where we may accomplish something by curetting the trachea, call for tracheotomy. One trouble with intubation is that when the tube has been removed for a short time the patient often does not swallow any more easily. I believe that both tracheotomy and intubation ought to be done very early.

There is one class of cases of obstruction in adults which has not been spoken of particularly, and that is œdema of the larynx. Perhaps it may be possible, in many of these cases, by scarification or by other treatment, to prevent dangerous obstruction. Certainly it is very comfortable to feel that you have a means at hand in such cases which does not call for a serious operation. The insertion of the tube is an easy matter in the living adult. Intubation on the adult cadaver is a difficult operation.

A well-known surgeon of this city once made the remark, that he did not think a patient ever had laryngeal diphtheria and recovered without operation. I must say I never saw one; but it seems to me it might be possible. Perhaps we cannot tell whether there was diphtheritic membrane in the larynx or not. That is a question I wished to ask.

I certainly believe there is a field for intubation, but I think every man should be prepared to do either and to know how to do either. I will say for my own part that whereas two or three years ago I did intubation almost entirely, at present my inclination is to do tracheotomy.

Dr. Prescott: I think that the indications for either intubation or tracheotomy are to be looked upon in each individual case and not as any general rule. The operation of intubation is one that grows upon persons doing the operation. The more they do it (I think the rule has been) the better results they get and the better they like the operation. That has been the result in those cases at the hospital which I have seen. The house-officers who have had the most experience have been those who have had the best results. The man who did the most operations did thirty-nine. He had thirteen recoveries, and that is the best result in any of the operations, either tracheotomy or intubation, that I know anything about in any series of cases at the hospital. Personally, I favor intubation, because I think tracheotomy is a very serious operation, much more serious in private practice than in hospital, and serious enough there. I never go to a case without feeling I would rather not go, although it seems to me that intubation is not as serious an operation as tracheotomy; I think, however, that intubation is, or may be, quite a serious and difficult operation. I have seen cases where it has been impossible for the men who have tried to do the operation to do it unless they had some special experience and skill in it. To say that intubation is always easy, is a great mistake; to say it is always hard, is just as great a mistake. Intubation may be one of the easiest operations that a man is called upon to do. The relief may be as absolute as it can be after tracheotomy, and the amount of relief has nothing whatever to do, as far as I have been able to see, with the difficulties of the operation. If intubation did not relieve, I should think there would be no question that tracheotomy ought to be done. There are cases where this happens; and therefore I do not believe a man ought ever to go to a case of intubation without having the instruments for tracheotomy, although I believe the cases where tracheotomy is necessary are few and that the number will be smallest with the man who has had the greatest experience in intubation. Personally, I should prefer intubation in almost all cases except those where the pharynx is filled either with membrane or with enlarged tonsils and membrane, where the introduction of the tube is practically of no use because the obstruction is not in the larynx at all but above, and the putting in of the tube does not relieve the obstruction. I think that Dr. Lovett, in saying that most of the cases have died of sepsis, has overlooked the fact that a great many of them have died of extension and broncho-pneumonia, it not being possible to make a diagnosis between the two; and that many of the cases dying of sepsis also have extension or broncho-pneumonia.

Dr. P. Thorndike: There is one point Dr. Burrell mentioned I should like to emphasize. There is a class of very mild cases where dyspnœa begins early, in children whose general condition is comparatively good. It seems to me we ought to be grateful that we have intubation at our command for these cases. Whether they are going to be severe cases of diphtheria later, we are unable to tell; and it seems pretty hard, if we must do a severe operation like tracheotomy in these cases which can be so very simply and easily relieved by the insertion of the intubation-tube. These cases, it seems to me, are quite beyond the debatable ground. They form a class of cases where intubation is indicated.

Dr. Farlow: It is my experience that it is not possible to make such a classification of cases into light and severe cases, as Dr. Burrell suggests. It is very difficult to tell which are to remain mild and which are to assume the serious form. As regards cases of acute œdema, referred to by Dr. Harrington, most of them get well under scarification; and the use of the ice-bag and intubation is very seldom called for.

Dr. Prescott: In reference to Dr. Harrington's question whether any one has seen a case of diphtheritic laryngitis get well without operation, I think I can answer in the affirmative, because in 1889 there was a child sent in for operation. At that time there was a good deal of feeling among the house-officers as to the question whether we should operate in every case or not; and one of the house-officers requested permission to stay with the child and see if it could not be brought through without operation. There was a house-officer by the child all night and all the next day and the next night, and the child recovered. There was a good deal of dyspnœa; and at the time the child entered, if it had not been for the request, the child would have been operated upon. There was membrane in the throat and it was undoubtedly a case of diphtheritic laryngitis.

Dr. Farlow said that he had seen a case where there was diphtheritic membrane in the larynx recover.

Dr. Burrell: In order to answer that question, it is necessary to say that I consider tracheotomy and intubation as simply details in the treatment of diphtheria. Regarding my choice of leaving a child with an intubation tube in its larynx, or a tracheotomy tube in its trachea, I have none. I consider the child equally safe in the hands of an intelligent nurse.

Dr. Buckingham: I should like to ask the time of year that these cases had laryngeal diphtheria and got well without operation. I ask this because I believe that temporary dyspnœa may be produced by exposure to the cold on the way to the hospital. I would like to know whether dyspnœa in these cases came on gradually and without exposure?

Dr. Farlow: It was in the winter. I do not remember what month. I saw the membrane, however, with the laryngoscope.

Dr. Richardson: I should like to say a word about indications for tracheotomy or intubation, not referred to. Nothing has been said about any indications for operation except in diphtheria. I have had very little experience with intubation, but my preference is in favor of the tracheotomy-tube in most if not all cases that I have seen. I think Dr. Lovett's reasons are good ones in support of his views, namely, that by tracheotomy we avoid the passage of inhaled air over filthy surfaces, and that we have drainage of the affected surfaces. I have operated for dyspnœa for a great many different causes — for the pressure of thyroid tumors on the trachea, for interference with respiration caused by enlarged cervical glands, and for the sudden obstruction that comes in the course of operations upon the mouth. Of course, there would be no question in the selection of an operation for sudden dyspnœa occurring when the jaws could not be opened, circumstances under which I have operated twice. There is certainly one principle that might be applied in all cases outside of diphtheria, and that is where one wishes for any reason to explore the air-passages. I have operated in cases of dyspnœa from doubtful causes, and found all sorts of foreign bodies in the trachea or larynx. The mortality from tracheotomy is very slight. I do not think I have ever lost a case from any other cause than diphtheria. Several speakers have referred to this operation as a very serious one. I agree with them, and maintain that there is no operation more difficult than tracheotomy; but I do not think it is a dangerous operation. It may be done without ether in a very few minutes, though there is danger of wounding large veins or cutting through into the œsophagus, but the shock to the patient is not great.

Dr. Stevens: Dr. Lovett speaks of the air passing over the intubation-tube being infected. In all the cases of tracheotomy that I have seen, very soon after the operation there was a thick exudation of pseudomembrane throughout the wound, and the neck begins to swell in many cases where there was no swelling before, showing that infection takes place from the wound; and I believe this is a matter that should be considered when you decide whether you will do tracheotomy or intubation.

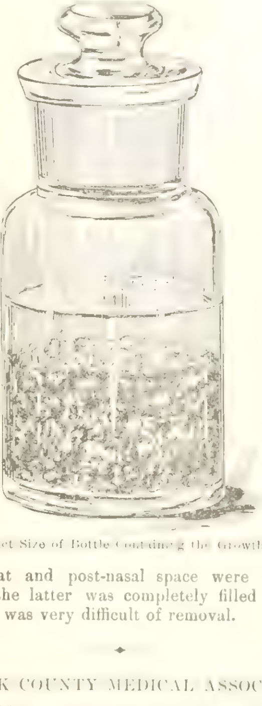
There is another point, and that is in regard to the after-treatment of a child that has been intubed or had tracheotomy done. The former way of having a child inhale an atmosphere loaded with moisture, it seems to me, is a very wrong one. I do not think it can do anything but harm, and ought to be abandoned. The same thing holds good in intubation. Years ago I abandoned using anything in the room except a pan of water on the stove; and when I gave up using the steam, my cases of tracheotomy did very much better. I never use steam in intubation cases, but have them kept in an ordinary room with a pan of water on the stove. The air, I believe, should be kept warm, not allowed to get below 75°, but it should not be supercharged with moisture.

Dr. Lovett: With regard to the cases of laryngeal diphtheria, I had an interesting experience in my last service at the hospital two months ago. We had a great influx of fresh cases. At one time we had four cases of what we supposed to be laryngeal diphtheria. One of the children had had scarlet fever. They all presented the same symptoms, and there was every reason to believe that intubation or tracheotomy would have to be done. Believing as I do in tracheotomy, I ordinarily have tracheotomy done. However, I kept the four cases under observation; and three recovered without operation, and one grew so bad that tracheotomy had to be done. I think situated as we are now, with two house-officers on duty all the time, the cases are allowed to go a little longer than otherwise. I doubt whether this is a wise provision. I do think certain cases one would suppose were going to do badly do recover without operation. What they are or why they do so, I do not think any one knows. In private practice they could not be left, of course; but in the wards one can watch such cases safely enough.

Dr. Farlow showed a

VERY LARGE ADENOID GROWTH,

which he had removed under ether from a young man twenty-five years of age.



Exact Size of Bottle Containing the Growth.

The throat and post-nasal space were unusually large, and the latter was completely filled with the growth. It was very difficult of removal.

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NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, March 20, 1893, the President, S. B. Wylie McLeod, M.D., in the chair.

Dr. Stephen Smith read a paper on

SHOT WOUNDS OF THE ORBITAL REGION, AND THE VALUE OF GIRDNER'S TELEPHONIC BULLET-PROBE IN LOCATING THE BALL.

The case which formed the basis of Dr. Smith's contribution was that of a young man, eighteen years of age, who shot himself in the head with a pistol with suicidal effect. The ball penetrated the right temporal fossa, and the patient became unconscious. In the course of two or three hours, however, he completely recovered consciousness. There was immediate and entire loss of vision in both eyes, and it was noted that there was considerable protruberance of both eye-balls, this being more marked in the left than in the right. There was œdema of the lids, and complete loss of the sense of smell, but no hæmorrhage from the nose. From the conditions present it seemed apparent, first, that the ball had entered both orbital cavities and destroyed both optic nerves; second, that it had destroyed the olfactory nerves without injuring the ethmoid bone (inferred from the absence of hemorrhage from the nose); and, third, that the brain was injured, as indicated by the absence of all cerebral symptoms.

Dr. P. H. Callan, the ophthalmic surgeon, was then called in consultation; and he suggested that the loss of vision might be due, not to division of both optic nerves, but to pressure at the foramen by which the nerves pass out from the brain as the result of a fracture in this location.

On the fourth day after the injury, after consultation with Drs. Gouley and Phelps, it was determined to ask Dr. John H. Girdner to make an exploration for the ball with his telephonic probe. The probe passed in for two or more inches, and appeared to locate the ball in the left orbital cavity, beneath the left temporal fossa. The cranium was then trephined at the point apparently indicated by the probe, and the dura mater exposed. Then exploration was practised through the opening thus made by means of the telephonic needle, and the ball promptly responded. As the missile seemed to be located just within the brain, the meninges were divided, and search made for it with the forceps. This proved to be entirely unavailing, however; and thirteen days after the reception of the injury the patient died with the ball still in the head.

At the autopsy the ball, which was of 32 calibre, was found entirely within the left orbital cavity. It had passed the optic nerves, but destroyed the olfactory nerves. The right orbital plate was broken into many fragments. An abscess was found at the point where the needle had entered the cerebral substance, but no other injury to the brain could be detected.

Dr. Smith stated that the results of the search for the ball with the telephonic probe were not altogether satisfactory, and this was apparently due to the fact that after the bulb of the probe had passed the ball, the shaft of the instrument came in contact with it where it lay in the left orbital cavity, and thus gave rise to the sound that was heard. The source of error could be obviated, and the telephonic probe greatly improved, he thought, if the shaft could be insolated.

Total blindness in cases such as this had until comparatively recently been generally attributed to division of both the optic nerves; but in the present instance the autopsy did not show this, and the researches of Berlin, in Germany, published in 1879, seemed to indicate that, as a rule, the loss of vision was due to fracture involving the optic foramen with resulting pressure upon the optic nerves. In his own opinion, however, the more rational explanation of the blindness in such cases would appear to be the partial or complete destruction of the optic nerves.

In a case of this kind two important questions presented themselves to the surgeon: first, the safety of the patient's life; second, the preservation of the functions of the eye. As regards the first, it was requisite to estimate whether there had been any injury to the brain substance, and to what extent fracture had taken place, as shown by the symptoms.

The conclusions reached by Dr. Smith in his study of this case were as follows:

(1) Girdner's telephonic bullet-probe is an instrument of great precision in detecting the presence of a ball; but, considerable care is required in precisely locating it when it has penetrated any considerable distance. By protecting the shaft of the probe more accurate results can probably be obtained.

(2) Sudden and total loss of vision is not always due to division of the optic nerves, but may result from fracture of the optic foramen.

(3) Non-inference gives rise to the best results, unless the ball has penetrated the brain (or causes pressure upon the eyeball).

(4) In the treatment of the eyes the surgeon should follow indications as they arise.

Dr. John H. Girdner gave a practical demonstration of the use of his telephonic probe, and exhibited his most recent probes and needles, in which the shaft is insolated, so that no sound is produced except when the metallic bulb or point (in the case of the needle) comes in contact with the ball. He remarked that the instrument was one of precision, sothat any body, without any previous training, could readily detect the sound when the ball responded to the touch of the probe. Dr. Smith's observations were of great value, he said, and the objection which he had found, had now been obviated by the insolation of probes and needles. Without insolation the instrument, as had been shown, might convey an erroneous idea of the depth of the wound. Since he had read his first paper on the telephonic probe six years ago, he had employed the instrument in eleven cases in which the cranial cavity had been penetrated.

As regards surgical treatment, the cranial cavity was at the present day in about the same position that the peritoneal cavity was several years ago. In the majority of instances where it had been entered by a bullet the patient was allowed to die without any attempt at interference being made. We had entirely too much respect for the cranial cavity, just as we used to have for the peritoneal cavity. The inflammation which resulted from the presence of the bullet caused softening of the brain substance, and the bullet passed from place to place, sinking lower and lower, until it reached the base of the brain, and death ensued. But when our surgeons had learned to boldly enter the cavity, our statistics would show better results than at present. The brain would stand more manipulation than we had been accustomed to believe; and as long as we kept above the level of the lateral ventricles, surgical procedures were attended with comparatively little danger if properly managed. If during life the telephonic probe indicated one spot, and at the autopsy the ball was found in another position, it afforded no argument against the use of this instrument because it was a well-ascertained fact that in the brain bullets continually move from place to place. The brain was the only tissue of the body in which they thus travelled.

Dr. P. H. Callan said that he had been called in to see Dr. Smith's patient sixteen hours after the shooting. As to the loss of vision in such cases, he was of the opinion that Berlin's view that it was due to a fracture involving the optic foramen offered the only satisfactory explanation of the occurrence. In this instance there was a depression of the sphenoid with fracture of both of its lesser wings. Of course, it was possible for a bullet to traverse both optic nerves; but such a thing could occur but very rarely, and the explanation of the blindness given by Berlin was of far more general application.

Dr. Joseph D. Bryant said that Dr. Girdner's invention was the application of an exact science for the purpose of detecting bullets in the brain, as well as other parts of the body. He desired to add his testimony to the worth of this telephonic probe, which marked a distinct advance in the field of surgery. It was of the same value in gunshot wounds as physical diagnosis was in diseases of the chest, or the discovery of the spirillum in Asiatic cholera. What Nelaton's probe was in its day, the telephonic probe was at the present time; marking the extreme point that had been reached in the location of the ball in all shot wounds where the deeper tissues of the body were involved. It was a matter of special pride, he thought, that this advance was one of the triumphs of American surgery. Personally, he had had one case, in connection with Dr. Girdner, in which the ball was lodged in the cranial cavity. The telephonic probe indicated with clearness that the bullet had penetrated three inches into the substance of the brain; but, unfortunately, with the clumsy hand of the operator and with the clumsy forceps (although the best that the art of the instrument-maker had as yet been able to prepare), it was found entirely impossible to extract it.

He was inclined to take much the same view as Dr. Girdner, he said, in regard to wounds of the cranial cavity involving the brain. Out of 236 cases collected a number of years ago by Wharton, of Philadelphia, in which the brain was penetrated by shot wounds, in 66 cases in which the ball was removed, recovery followed in 60 per cent.; while in 170 cases in which the ball was allowed to remain, recovery followed in but 43 per cent., a difference of 17 per cent. in favor of removal. Again, in 140 cases collected during the late Civil War, the statistics showed a percentage of 13 in favor of removal. It was an important point, that, if a bullet was to be removed from the brain at all, this should be accomplished as promptly as possible. In 29 of the cases above quoted, where the ball was allowed to remain and the patient made a fair recovery at the time, abscess of the brain and death eventually occurred. He was convinced that in all cases where a bullet could be detected in the brain, or where the location could be fixed with any degree of accuracy, the attempt at removal should unquestionably be made. If, however, it was found impossible to locate the ball, or form any reliable estimate as to its position, it was advisable to allow it to remain *in situ.* Again, if a bullet had changed its position from that originally occupied, and if the probable situation after such change could be estimated by the surgeon, he thought it advisable that it should be removed, if possible.

Dr. N. J. Hepburn alluded to the possibility of a bullet being supposed to be lodged in the brain, when in reality it was not. He quoted a case in point, which he had seen in consultation at Newark, N. J.

In closing the discussion, Dr. Smith said that he regarded Dr. Girdner's telephonic probe as one of the greatest advances in gunshot wounds of the present century. As to the general question of the advisability for invading the cranial cavity for the removal of balls lodged in the brain, this was a matter which did not properly come within the scope of his paper, and which he did not care at the present time to discuss.

Dr. L. Duncan Bulkley read a paper on

CHANCRE OF THE TONSIL, WITH AN ANALYSIS OF FIFTEEN CASES.

This was a subject, he said, which had not received proper attention on the part of the profession. The tonsils are the seat of chancre much more frequently than was generally supposed to be the case, and Professor Boeck had informed him that in Norway chancres occurred oftener in this location than in any other, after the genitals. This was not due to the practice of bestiality among the people, but, apparently, to the common habit there for the various members of families to use the same materials in eating and drinking. One reason why the tonsils were so frequently attacked was because these organs were so apt to be affected by inflammatory conditions, since an abrasion of the surface was required in order that a chancre should become developed. The act of deglutition was also favorable to the development of chancres in this position. In Dr. Bulkley's practice they constituted fourteen per cent. of all his cases of extra-genital chancre. One very important point about chancres of the tonsil was that they are so apt to escape notice, and in almost all the cases that he had met with, the affection was never suspected until he directed attention to it. In a large number of instances ordinary tonsillitis was supposed to be present, while in some the secondary syphilitic eruption was mistaken for measles or other exanthum.

In three of his cases the chancre was due to bestial practices, but in all the others was innocently acquired. In eight of his cases the patients (who were of various ages) were males, and in seven, females. The right tonsil seemed to be more liable to be affected, than the left; but in three instances both tonsils were the seat of chancres. The longest period after the inception of the disease at which a patient first came under observation was nine months, but in all his cases the diagnosis was absolute.

The characteristic features of the affection were enlargement of the tonsil, with extreme hardness, superficial ulceration marked by sharply defined edges, and enlargement of the neighboring lymphatic glands. In describing the symptoms, he said that the first thing noticed by the patient was a stinging pain in the tonsil, with more or less difficulty of deglutition. Then the tonsil swelled rapidly, though in rare instances the enlargement was not very great. Redness was marked, but ulceration was not a striking feature. There was always an erosion, however, and the edges of the ulceration were sharply cut, while the base was covered with a sticky secretion. In some cases it was not possible to make the diagnosis by inspection alone, and in these palpation was of the utmost importance and should never be omitted, the fingers having first been anointed with carbolized vaseline. In ten of his cases the hardness of the tonsils was very marked. In the others, which were not seen until a later period, the induration had to some extent passed away. As a general rule, the hardness was extreme, being more than cartilaginous, and almost stony in character. The condition might possibly be mistaken for epithelioma, but the induration was usually greater than in the latter. In all cases the submaxillary glands were enlarged. In a number the post-cervical glands were also affected, and in some instances there was a pretty general adenopathy.

Syphilis of the tonsil generally ran a long and well-marked course. In two of his cases, where the patients were young ladies who had contracted the disease from kissing the young men to whom they were engaged to be married, the disease was terribly severe, and completely wrecked their lives. It was not always easy to determine in precisely what method the contagion was conveyed to the throat. This was some-transmitted by the act of kissing, as in the cases just mentioned, and sometimes by means of pipes and articles used in eating and drinking. Instances are on record in which women had acquired the disease by placing the nipples of nursing bottles used by syphilitic infants in their mouths.

All cases of chancre of the tonsil required the most active, systematic and prolonged treatment, and the patient should be particularly warned in regard to the danger of infecting others, especially as mucous patches in the mouth are apt to be numerous.

Dr. T. H. Burchard thought that any painstaking and conscientious effort, like that of Dr. Bulkley, to establish the fact that syphilis is not necessarily a venereal disease placed the entire profession under a lasting obligation. Personally, he had met with three cases of chancre of the tonsil. The first was in an old woman who acquired it by smoking her husband's pipe. The second was one of four cases of chancre of the mouth which he observed among the employees of a glass-blowing establishment. The third was a case pointed out to him by Professor Pinal in the Hospital St. Louis, in Paris; the patient being a female nurse in the hospital, who, while ill from some other trouble, contracted syphilis of the tonsil from an attendant suffering from a chancre on the finger. In all these cases the disease was characterized by the two prominent peculiarities mentioned by Dr. Bulkley, excessive hardness (greater than cartilaginous or epitheliomatous) and chronicity.

After emphasizing the fact that syphilis of the tonsil did not yield readily to local or general measures and always required that constitutional treatment should be pushed to the fullest possible extent, Dr. Burchard called attention to the frequency of non-genital chancres, and to the importance of warning all patients suffering from any form of mouth syphilis against the danger of communicating the disease to others. He also spoke of the danger of overlooking cases of extra-genital syphilis and referred to cases that he had known of where the real nature of the trouble was only recognized after the development of the most formidable brain lesions.

Dr. J. P. Oberndorfer remarked that it was possible that at the time of observation by the physician there might be very little hardness and very little glandular implication in a case of chancre of the tonsil. He was convinced, he said, that there was no means at our disposal of making a positive diagnosis; and behind that, it was always important to wait for symptoms of secondary syphilis before arriving at a definite conclusion. In every case of suspected chancre in any part of the body whatever, the treatment should be expectant until secondary signs showed themselves.

In closing the discussion, Dr. Buckley stated that Fournier claimed that of all syphilitics no less than twenty-five per cent. acquired the disease in an innocent manner. He also said that he was entirely in accord with Dr. Burchard in regard to the terrible consequences liable to result from the overlooking or inadequate treatment of these cases, and believed that this was a matter which could not be too strongly emphasized.

Amongst the accounts of the Panama Canal Co. which are under investigation at present is one for 600,000 francs for antibilious pills for the *employés* of the Company.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine, Tuesday evening, March 7, 1893, Dr. M. Allen Starr, President, in the chair.

BASEDOW'S DISEASE.

Dr. William H. Thomson read a paper on this subject. He began by stating that the progress of pathology often illustrates the disadvantage of the premature naming of diseases after some of their common or prominent symptoms, for further knowledge may show the disease to have much wider relationships than at first suspected, and in some cases exist without these symptoms being present. If such be the case, the symptomatic name may then operate to prevent a correct diagnosis. The name, exophthalmic goitre, has had much influence in preventing the recognition of Graves's disease in many instances, and still more in confusing the views of its pathology. In reading the numerous contributions on the pathology of this interesting affection, it is striking to note how predominately the conception of some textural lesion in the nervous system that would account for the exophthalmos and the goitre has diverted either the investigation or the speculation, in seeming forgetfulness of the fact that these symptoms are not essential to the affection, because they may be both present with Graves's disease absent, or both absent with Graves's disease present. The safest rule to follow in pathological problems is to seek first for the most constant characteristics of a given complaint, rather than for the most obtrusive ones. Thus the most uniform condition in Graves's disease is what may be correctly described as a state of marked agitation; in many instances it is for a long time a purely physical state, not involving the mind or the spirits, and yet the patient acts as if greatly alarmed about something. This has led many writers to pronounce fright to be a leading cause of the disease. We are thus at the outset diverted from the study of a truly characteristic condition to that of a most occasional element in the clinical history of the affection. While fright may be the occasion of the first manifestation of chorea or of Graves's disease, a blow the occasion of the development of a mammary cancer, etc., it is only a hindrance to our progress towards a correct pathology of these diseases to put down any one of the varying occasions of their first manifestation as their cause.

Dr. Thomson then gave the histories of his last eight consecutive cases of Graves's disease in private practice. In none of these cases was fright or any other emotion an element of the clinical history. With two exceptions, they were unusually free from causes of mental strain or depression. Exophthalmos and goitre were wholly absent in one of these eight cases. Exophthalmos alone was absent in five. Goitre was absent in one, while in another it was only slightly present late in the disease. Both exophthalmos and goitre were marked only in one case. In all the cases there was marked tachycardia and muscular tremor. Emaciation was marked in five and moderate in three. In four, imperfect inspiratory power was noticed.

The rapid heart action and the muscular tremor are the first symptoms to develop in this disease, and the last to disappear, and together they constitute the most invariable elements of the disease. Our attention, therefore, should be particularly directed to them as the most related to its pathology, and the most important practically, as the earlier the recognition of the disease, the better for the patient. As to its pathology, a paralytic lesion, involving the common nucleus of the glosso-pharyngeal, vagus and spinal accessory nerves and extending to the neighboring vaso-motor centre in the medulla would account for the whole group of symptoms which make up the picture of Graves's disease. Simple irritation of the lower branches of the glosso-pharyngeal and the superior laryngeal nerves is sometimes accompanied by general muscular tremor. Such a bulbar lesion would also explain the tachycardia and the universal relaxation and throbbing of the systemic arteries. It would also explain the interference with the inspiratory expansion. Such a lesion would not, however, account for the exophthalmos or the goitre; and when we turn to pathological anatomy, we have no constant evidence of any textural lesion in the medulla, either of the above-mentioned centres or of other parts. No characteristic anatomical change has yet been discovered which can be causally associated with the genesis of Graves's disease, and we must look elsewhere for the origin of the malady. Here we may be aided by our clinical experience. Persistent diarrhœa is a common symptom in Graves's disease. In the cases referred to above, astringents and other drugs had very little effect in checking the diarrhœa, while a change of diet at once brought about an improvement in all the symptoms. Since 1880, Dr. Thomson said, he mainly relies on the dietetic treatment in Graves's disease, with such favorable results that he now has little doubt that a specific disorder of intestinal (in distinction from gastric) digestion is the primary factor in the genesis of this affection. While a structural lesion in the medulla which would account for the phenomena of Graves's disease is almost inconceivable without its sooner or later involving all the vital functions of that seat of life, yet particular functional derangements produced by toxic agents of intestinal origin are just what might be expected, for nothing is more characteristic than the narrowly selective operation of functional nervous poisons, which may go on for years, as in the case of opium, affecting certain functions without producing either progressive changes in them, or extension to other functions. One fact in Graves's disease which points much more distinctly to a digestive disorder than to a structural nervous lesion is that it occurs in women about ten times as often as in men. That the digestive apparatus in women is subject to special disorders is notorious. The speaker said he had not yet seen a case of severe Graves's disease in which diarrhœa was not, sooner or later, a pronounced symptom. As regards the diet, the amount of meat taken should be restricted, and milk, preferably fermented, should be substituted. Medicinally, he employs some of the intestinal antiseptic remedies, and the tincture of strophanthus as a vaso-motor tonic.

Dr. E. C. Seguin said that while there are undoubtedly cases of Graves's disease in which one or two of the three prominent symptoms — the exophthalmos, the goitre and the tachycardia — are absent, he was inclined to believe that the reader of the paper had rather exaggerated the number of cases in which the principal symptoms are those relating to the circulation. Unquestionably, we see cases in which the only gross symptoms are the rapid heart-action and the tremor; but these are comparatively rare. On the other hand, there are cases which present these symptoms to which he should hesitate very much to give the name Graves's disease. It has appeared to him that in many cases of disease of the heart with dilatation or tachycardia, there is apt to be associated with it a muscular tremor and considerable nervousness. In arriving at a diagnosis of Graves's disease, there are other symptoms to assist us, to which Dr. Thomson did not refer. One is the character of the pulse. The mere fact of the pulse being rapid is not in itself characteristic of Basedow's disease; it should possess a quality of tension and smallness, which to the experienced finger is of value in making the diagnosis. Then again, the temperature of these patients is invariably raised, amounting to an increase of one-half to one degree (Fahrenheit) in the axilla. In making a diagnosis of Graves's disease without the exophthalmos or goitre, Dr. Seguin said he should wish to find, beside the tachycardia, the peculiar character of the pulse and the slight elevation of temperature. As to the pathology of the disease, he said that any theory as to the location of a lesion in the central nervous system or in the medulla has failed to satisfy him. As to locating the general cause of the disease in the intestinal tract, as the author has ingeniously done, no positive conclusions can be drawn, for the reason that the diarrhœa is by no means a frequent symptom in Graves's disease. He has observed it only in a few cases. Furthermore, it does not resemble a fermentative diarrhœa; it is of a paralytic nature, with large, liquid, frequent evacuations. In conclusion, Dr. Seguin referred to the value of aconitia in treating the disease.

Dr. B. Sachs said he agreed with Dr. Seguin as regards the symptoms of the disease. He should hesitate to make a diagnosis of Graves's disease in a case in which both the exophthalmos and the goitre were wanting. What we do find with extreme frequency is that one of these two cardinal symptoms only is present, together with the characteristic arterial disturbance. Another symptom of the disease to which attention has lately been called is that the upper eyelid does not follow the motion of the pupil downwards. This does not appear to be due to mechanical causes, but is an independent symptom. He has seen it present in a case where there was almost no exophthalmos. Severe diarrhœa he has found rather rarely associated with other symptoms of Graves's disease. A diarrhœa due to the condition of the larger intestines was present in some cases, and in these he was struck by the peculiar fact that it did not appear to be exhausting to the patient. In regard to the theory put forth by Dr. Thomson, we must remember that while putrefactive changes in the intestines are very common, exophthalmic goitre is a rare disease. Dr. Sachs said he has found the "rest treatment" extremely beneficial in the treatment of this affection, the heart's action becoming better and the goitre diminishing in size. In addition to rest, he has fed the patients on a light diet, principally milk and eggs.

Dr. George W. Jacoby said that in certain cases, where only one of the cardinal symptoms was present, it is often a difficult matter to draw the line between Graves's disease and some other form of neurosis. In undeveloped cases of Graves's disease, the "rest treatment" was particularly beneficial. As regards the ocular symptom, the failure of the upper lid to follow the pupil downwards, the patient has perfect control over the voluntary closure, but the reflex blinking of the lid is almost entirely lost. There may be loss of sensation of the cornea associated with it.

DR. MARY PUTNAM JACOBI said that most authors referred to depressing emotions as a cause of Graves's disease. She had noticed three cases coming under her observation in which such antecedent cause was extremely obvious. In one of these, a very severe case, the patient was a woman, aged twenty-two years, whose marriage engagement was broken by the sudden death of her *fiancé*. She developed rapidly the three typical symptoms of Graves's disease, with intense nervousness and diarrhœa. She remained in a state of great prostration for six months, and subsequently recovered by marrying somebody else. Following her second pregnancy her symptoms reappeared. She was living at that time almost entirely on champagne, which seemed to greatly intensify the symptoms. The diarrhœa did not appear to add to her prostration. The patient was put entirely on a meat diet, and the pulse rapidly fell from 150 to 90 per minute, and she regained her strength. In another case, occurring in a woman aged forty-two years, the symptoms appeared after prolonged family troubles. The third case referred to was also in a woman, a servant by occupation, who developed the symptoms after prolonged nursing of her mistress, to whom she was much attached.

DR. JOSEPH COLLINS said that if we could ascribe a toxic origin to exophthalmic goitre, as suggested by Dr. Thomson, the prognosis of the affection would not be as serious as it is. The speaker referred to certain experiments he has made on the thyroid in animals. Complete extirpation of the gland is almost invariably followed by death. This would controvert the idea that its function was a metabolic rather than a secretive one.

DR. A. D. ROCKWELL said that he was interested in Dr. Thomson's statement that only one or two of the cardinal symptoms were present in the cases narrated. As far as the speaker's observation goes, the three typical symptoms were usually present. He referred to the value of digitalis in cases where there is a weakness of the myocardium. He has found digitalis very serviceable, in combination with iron, zinc and ergot. He also referred to the value of electricity: in order to do any good, the current must be sufficiently powerful. In reply to a question, Dr. Rockwell said that the diminished resistance to the electric current in these patients is probably owing to the perspiration and to the better conduction due to the rapid circulation.

THE PRESIDENT said he did not think that any explanation thus far given will cover all the cases of this disease, and it is doubtful that we will ever find a single explanation for any functional nervous disease. Different cases undoubtedly have a different etiology. In two cases of Graves's disease recently coming under his observation, a sudden fright was too immediate to be anything but causative. One of the patients, a woman, saw her baby fall from the second-story window. She was immediately seized with palpitation, and within two weeks developed the exophthalmos and the goitre. She presents a very interesting symptom that has been referred to by Charcot, a sudden giving out of the limbs — ostasia. After such a collapse she is perfectly able to rise and walk away. In another case the symptoms suddenly developed in a patient after she had narrowly escaped being run over by a street-car. Dr. Starr said he would follow Dr. Thomson's suggestions as to the diet in these cases. Strophanthus he has found very valuable. Electricity has proven very disappointing in his hands as a remedial agent in Graves's disease.

DR. THOMSON, in closing the discussion, said that in his paper he did not intend to go over the entire symptomatology of Basedow's disease. Such occasional symptoms as the loss of the hair, pigmentation of the skin, etc., he did not refer to at all. Neither did he mean to imply that fright and depressing emotions are not repeatedly the occasion for the first development of the symptoms. We must try to separate occasions from true causes. The tremor of Graves's disease is characteristic; it is entirely different from the tremor of any cardiac affection he has ever met with. He did not maintain in his paper that there was any lesion in the medulla to account for these symptoms: he only meant to show that as no such lesion had been demonstrated, it lends strong light to the toxic theory. These poisonous ptomaines may act, by selection, on certain parts of the nervous system. The relapsing nature of Graves's disease is against the idea that they depend on a structural lesion.

In reply to Dr. Seguin, Dr. Thomson said that in those cases where we get a high-tension pulse, it is associated with albuminuria. In Graves's disease there is a dilatation of the arteries throughout the body, and dilated arteries and high-tension pulse do not go together. As regards the temperature, the speaker said there is a slight elevation, such as we find in any serious neurosis, but it bears no proportion to the rapid heart-action, and the affection may be essentially regarded as a non-febrile disease.

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Recent Literature.

Hand-book of the Diagnosis and Treatment of Diseases of the Throat, Nose and Naso-pharynx. By CARL SEILER, M.D., Instructor in Laryngology in the University of Pennsylvania, etc. Fourth Edition. Philadelphia: Lea Brothers & Co. 1893.

The fourth edition of this excellent hand-book proves its just appreciation by the profession at large, as well as by the specialist in laryngology. A book of this size is a great convenience to the general practitioner, in that it is concise and interesting, and to the medical student, in that the methods of examination and physiology are fully treated. This edition differs from the last principally in the addition of a chapter on Influenza and "American Grippe." The author divides these two diseases, describing epidemic influenza briefly, and writing a chapter upon what he calls the "American Grippe," or epidemic myxoid-œdema. The epidemic which appeared in New York City in December, 1889, the author considers a mixture of this disease with the genuine influenza, which was then raging all over Europe and part of Asia. The pathological condition which distinguishes the "American grippe" being the mucoid infiltration into the submucous tissue, he suggests the term "myxoid-œdema epidemica." For further details of this division, the reader is referred to Dr. Seiler's hand-book, or his monograph on the subject. The subject of intra-nasal neoplasms, and the influence of uterine diseases upon the upper air-passages, and intra-nasal disease as a cause of acne, are also new in this edition.

Hospitals and Asylums of the World: Their Origin, History, Construction, Administration, Management and Legislation: With plans of the chief Medical Institutions accurately drawn to a uniform scale, in addition to those of all the Hospitals of London in the Jubilee Year of Queen Victoria's Reign. By Henry C. Burdett. In Four Volumes and a Portfolio. London: J. & A. Churchill. 1893.

We have previously noticed the first and second volumes of this great work of Mr. Burdett's and have now before us the third and fourth volumes and the portfolio of plans. The delay in their appearance was caused by the unexpected financial embarrassment of the firm of printers which issued the other two volumes. This event caused the author much labor and great loss. His perseverance and zeal in completing his work under such discouragements are to be admired. The present volumes, which bear the imprint of J. & A. Churchill, are handsome specimens of book-making. Volume III concerns itself with the history and administration of hospitals; Volume IV with hospital construction and plans, and contains a bibliography of the whole subject. The Portfolio contains plans of the principal hospitals in various parts of the world.

It is a really monumental work.

The Wife and Mother: A Medical Guide to the Care of her Health and the Management of her Children. By Albert Westland, M.A., M.D., C.M. 12mo. pp. 282. Philadelphia: P. Blakiston, Son & Co. 1892.

The title of this book fully describes its object. We have never been inclined to believe in the wisdom of placing in the hands of young married women books which treat of pregnancy and parturition; partly on the ground that a little knowledge is a dangerous thing, and partly because books of this character generally say too much and are calculated, with many women, to excite nervous apprehension. But this book of Westland's is so judiciously written, and is so replete with sensible advice, that the usual objections disappear; and we are glad to say that it is the best book of its kind that we have seen. A large part of the book is devoted to the care of infants and children, and much attention is given to feeding and the normal development. There are many useful hints on the nursing of sick children, and the common maladies of the young are ably dealt with.

We believe that the book will prove extremely useful, both as affording much sensible instruction in the rearing of children, and in helping the parent to manage minor ailments when medical advice is not readily attainable.

An International Samaritan Congress. — By the efforts of Dr. Anton Löw, Vice-President of the Red Cross Association, a committee has been appointed to make arrangements for the holding of an International Samaritan Congress in Vienna in July, 1893. Professor Billroth was elected president of the committee. The object is to be the creation of a "Red Cross of Peace," an organization to unite existing voluntary first-aid societies and other associations of the kind into a general Samaritan union, each body retaining its own autonomy. In the time of war the new organization would join itself with the Red Cross Society.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, APRIL 6, 1893.

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ABSORPTION AND ELIMINATION OF MERCURY.

The inunction method is now quite generally regarded as the most effective means of combating syphilis with mercury, but there is no unanimity with regard to the details of this procedure, and it is practised in different places in very different ways. Welander,[1] of Stockholm, has recently made a large number of investigations upon this subject, and has reached some interesting conclusions. He set for himself the task of determining how much, if any, influence the varying conditions under which this method is employed, have upon the absorption and elimination of the drug. The amount of mercury eliminated was estimated by the number and size of the mercurial globules found in the urine.

It was found that it made no difference in the absorption, whether the mercury was rubbed in by the naked hand, or with a glove, etc. Many patients were examined who had taken in conjunction with the treatment various baths, as warm water, steam, mud and sea baths; but no difference could be noted with regard to the absorption of the mercury. No difference in absorption was detected in patients who had followed the inunction cure in Aix or Wiesbaden or in those who were treated concurrently with artificial sulphur and salt baths. The conclusion is therefore obvious that any especial efficacy of the treatment of syphilis at the various baths, is not due to an increased absorption of mercury from the composition of the water. A series of observations proved that the absorption was just as great and as speedy, when the inunction was made immediately after the bath, as when several hours were allowed to elapse.

The *amount* of mercurial ointment used varies widely in different places. Some employ less than two grammes, while others use from ten to twenty grammes. The question, of how much importance is this difference in the amounts used with regard to absorption, depends upon two others: first, how large a quanury can be rubbed in, in a limited territory, and, secondly, in what way is the mercury absorbed in the inunction cure? It has been claimed, as a well-known, that a part at least of the mercury in the inunction treatment, reaches the circulation by means of vapor formed from the ointment smeared upon the skin.

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[1] Archiv. für Derm. und Syph., 1893, Heft I and II.

Welander found that only from two to three, possibly four grammes can be rubbed into the parts of the body according to the Sigmund method. If more than that is used, a part of the ointment remains on the skin, even after half an hour has been spent in rubbing. The fact that people occupying the same room in which other patients are undergoing the inunction treatment, exhibit mercury in their urine, and have even in some instances become salivated, proves that a certain amount of the drug is absorbed from vaporization.

It appears from his experiments that the warmth of the bed favors absorption, as a greater amount was found to have been absorbed when the ointment was applied in the evening than where the patients were treated in the morning and allowed to sit about with their clothing on during the day.

The conclusions drawn from these experiments are the following:

That in inunction with mercurial ointment a not inconsiderable quantity is absorbed through the skin.

That after simply smearing the skin with the ointment, an evaporation of mercury takes place which is later absorbed through the skin and by the lungs in considerable quantity.

That simply smearing the skin, gives rise to a greater amount of absorption than simply rubbing in.

Hence follows the corollary that if an energetic action is desired, a sufficient quantity of the mercurial ointment should be used to allow a portion to remain smeared upon the skin, and not to be washed off.

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THE REVIVAL OF SYMPHYSEOTOMY.

Dr. Arthur Lewers writes to the *Lancet* a brief account of a symphyseotomy which he recently performed at the London Hospital. The forceps had been thoroughly tried without avail, and the alternatives of craniotomy or Cæsarian section alone remained. Dr. Lewers made two attempts to deliver by means of the forceps under chloroform without success, and as the head was engaged, turning was out of the question. After dividing the symphysis pubes, delivery was effected by the forceps very easily.

Another correspondent (M. R. C. P.) suggests that it would be a misfortune if the revival of symphyseotomy were to lead to any less attention being paid to simpler modes of delivery, such as turning and the application of the forceps; or if symphyseotomy were to be performed in cases where delivery might be effected by the use of the forceps in skilled hands.

At a meeting of the Philadelphia County Medical Society, held in October, Dr. Barton C. Hirst reported a case of symphyseotomy performed on a young woman in the University Maternity Hospital. The operation was successful as regards the mother, and a live infant was readily delivered. "It is believed," says the *Medical Record*, "that this is the first instance in which the operation, as a substitute for the Cæsarian section, has been attempted in the United States."

It will be remembered that Morisani, of Naples, read a paper on the subject at the London International Medical Congress in 1881. He affirms that symphyseotomy has been practised fifty times at Naples, twice on the same woman, with the following results: 40 women saved, 10 dead (20 per cent.); 41 infants saved, 9 dead (18 per cent.).

Morisani uses a blunt-pointed, curved bistoury with the cutting edge on its concave surface. He makes an incision about two inches above the symphysis down to the articulation. The bistoury cuts through the interosseous cartilage from below upwards.

He then waits for spontaneous delivery, unless the pains are feeble, or the head does not engage, in which event he extracts with the forceps.

From Dr. Harris's paper "On the Remarkable Results of Antiseptic Symphyseotomy" (see this Journal, October 20, 1892, p. 385), it would appear that the operation has by subcutaneous section and rigid antisepsis "been converted into a safe surgical measure."

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ANNUAL REPORT OF THE BOSTON HEALTH DEPARTMENT FOR THE YEAR 1892.

The statistics of mortality, as exhibited by the tables accompanying this report, show an increase in the number of deaths over the number of the previous year. At the commencement of the year influenza was prevalent, and the deaths from this cause contributed largely to the increase of mortality, so that at the end of January the excess of deaths over those of the same period of the previous year was 296, and at the end of the first three months of the year the deaths were increased by 556, largely due to this cause. The total number of deaths for the year was 11,236. The population of the city being estimated at 469,647 in the middle of the year, the death-rate per one thousand inhabitants is found to be 23.92. This rate is .90 per thousand over the preceding year, and .50 per thousand over the average of the ten preceding years. The deaths from zymotic diseases show also an increase. This was especially the case in the mortality from diphtheria and scarlet fever, while the deaths from typhoid fever and measles show a decrease. The number of cases of diphtheria reported at this office during the year was 1,353, being 49 more cases than the average of the ten preceding years. The deaths from this cause were 414, being 25 in excess of the average number for the same period. The Board of Health suggests that the character of the disease was more severe than was the case in preceding years, as over 30 per cent. of the cases reported were fatal.

The number of cases of scarlet fever was 2,938, and the number of deaths 262, an unusually large proportionate mortality. The other principal causes of death were consumption, pneumonia, cholera infantum, heart disease, bronchitis, and violent deaths, which together give an aggregate of 5,065 deaths, or about 45 per cent. of the total mortality. The percentage of deaths of children under five years of age to the total mortality for the year was 33.24 as against 34.13 of the previous year. That, with a single exception of the year 1890, is the lowest percentage of infant mortality since the Board of Health was established, in 1872.

The report contains an unusual amount of interesting material. There are the usual tables, giving a great amount of statistical information and an alphabetical classification of deaths from different diseases. In addition, there are a series of tables showing the population, the total deaths, the number of children under five years of age, the deaths of children under five years of age, the deaths from diphtheria, scarlatina, typhoid fever, and measles in four large American cities (Boston, New York, Philadelphia and Chicago) and in four large foreign cities (London, Berlin, Paris, Glasgow) during each of the thirteen years from 1880 to 1891, inclusive.

Another table gives a comparison of deaths from cholera infantum for three months of each year during a period of twenty-two years, with temperature and humidity, and percentages to the total mortality. There is still another table of deaths from scarlet fever from 1846 to 1892. The mortuary statistics for the past forty-six years show that scarlet fever is diminishing in frequency and in severity; at the same time the difficulties of dealing with it from the sanitarian's point of view, owing to the unrecognized and unreported mild cases in the community and the long process of desquamation, are very great.

In addition to these tables, there are maps and charts showing the distribution of mortality from consumption by wards and months, and of typhoid fever by wards.

The city is now provided with the most approved apparatus for disinfection by steam, and with a hospital on Swett Street of forty beds for cases of cholera or typhus fever, should such present themselves this summer. These are distinct from the arrangements in the harbor for purposes of inspection and quarantine. The board is alive to the necessity of protecting the city from such diseases, by cleanliness and supervision from within its precincts, as well as by vigilance from without, and will, we believe, be found equal to any emergencies which are likely to present themselves.

The City Physician, Dr. McCollom, in his special report, gives some additional maps and charts of much value in regard to diphtheria and scarlet fever, to which we shall take occasion to refer again.

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MEDICAL NOTES.

Cholera in Russia. — During the past week rumors of a serious revival of cholera in Russia have been heard. There are said to be several cases in St. Petersburg, and a more or less widespread outbreak in the Volga provinces.

Medical Officers to Serve at Foreign Ports. — In accordance with the quarantine bill, recently passed, the President has detailed the following medical officers of the Marine-Hospital Service to serve at foreign ports, for the purpose of furnishing information and giving the bills of health to vessels bound for the United States: Surg. Fairfax Irwin, Marseilles, France; Passed Assistant Surg. J. H. White, Hamburg, Germany; Passed Assistant Surg. W. J. Pettus, Southampton, England; Passed Assistant Surg. R. M. Woodward, Rotterdam, Netherlands; Assistant Surg. G. B. Young, Naples, Italy; Assistant Surg. B. W. Brown, Genoa, Italy; Assistant Surg. E. R. Houghton, Havre, France; Assistant Surg. M. J. Rosenau, Antwerp, Belgium.

A State Pathological Laboratory. — There is a bill before the Nebraska Legislature for the foundation by the State of a laboratory, conducted according to the same principle as Koch's Institute in Berlin. This is the first serious attempt, in this country, to establish such an institution by the government.

Immigration via Canada. — It appears to be considered easier for immigrants, destined for the United States, to come through Canada, than to land directly in American ports. During the past week 1,650 were landed in Halifax, and more have come, or are expected. In consequence, steamers from the Maritime provinces are being carefully overhauled in Boston, and several immigrants from Germany and Russia have been found and sent to quarantine. In Detroit, an attempt has also been made to stop train loads until satisfactory evidence of their health has been determined. The *Pavonia*, direct from Liverpool, brought 1,000 steerage passengers, which is the largest number brought to Boston, at one time, since the epidemic of cholera last summer.

Bequests to London Hospitals. — By a recent bequest six of the London hospitals have received about $100,000 apiece. The money is to be used for what is known as the Samaritan work, and not for the general purposes of the institutions.

French Brandy. — A committee has recently been appointed in Paris to examine the quality and purity of alcoholic drinks. Their results from an examination of the cognac in Paris, was mentioned in the Journal of last week. Some of that obtained from restaurants was prepared by mixing three-sixths of river water with fairly good brandy, and coloring it with ethers and other vegetable substances. All the samples examined were found to be imperfectly rectified. Some of them contained dangerous adulterations. More than nine-tenths of the alcohol consumed in France is falsified. There is a strong movement now to make the whole business a government monopoly.

Medical Fees in Berlin. — Medical fees are fixed in Germany by law, in the same way that the fares of cabs are in other places. A physician may decline to undertake a case for the legal fee; but if he does not stipulate before his first visit what amount he will demand, he can collect only the legal tariff.

He is not obliged, as he is in Austria, to go to any case to which he is summoned. In the early part of the century, when Germany was poor, the medical fees were reduced, and until recently this small scale has been the law: for an ordinary visit seventy-five cents was allowed, and subsequent visits to the same case were marked at twenty-five cents, except in cases of infectious diseases, in which he could charge one dollar and a half for the first visit and thirty-three cents for subsequent ones. The general Medical Council has now drawn up a new scale which will probably become a law, by which a physician is allowed one dollar and a quarter for each two miles travelled up to ten miles, after that twenty cents for each two miles in addition; but if his journey is by rail, the charge is seventy-five cents an hour. For an ordinary first visit the rate is still seventy-five cents, or if he is summoned at an inconvenient time one dollar, and the following visits are fifty cents each. This scale does not include operations, some of which are rated in the same degree of munificence, and others left to a special contract.

NEW YORK.

New York Health Commissioner. — Dr. Joseph D. Bryant, who has served as Health Commissioner with distinguished ability since 1887, on March 29th sent in his resignation of the position, and the mayor has appointed Dr. Cyrus Edson to the position. Dr. Edson, who graduated from the College of Physicians and Surgeons in 1881, has been connected with the Board of Health for nine years, and has been steadily promoted in the service. In 1882 he entered the Department as temporary inspector, and in 1884 was made Chief of the Division of Food Adulteration. In 1886 he was appointed Chief of the Bureau of Contagious Diseases, where he did excellent work in stamping out the *Masilia* outbreak of typhus fever, and in generally increasing the efficiency of the Bureau, and in the spring of 1892 was promoted to the position of Sanitary Superintendent, which he has filled up to the present time.

Appointment, Board of Charities. — Governor Flower has appointed Dr. Stephen Smith a member of the State Board of Charities.

Typhus Fever. — Among the deaths from typhus fever during the past week has been that of Mrs. R. H. L. Townsend, a most estimable lady prominent in society as well as in religious and charitable circles. Four years ago she erected at Bellevue Hospital as a memorial of her gratitude for her recovery from a grave surgical operation a pavilion for women suffering from abdominal and pelvic diseases, and a year later a beautiful chapel for the use of Bellevue patients. These are known as the Townsend Cottage and the Townsend Chapel. For a number of years she had been greatly interested in Mexican missions, and it was during a recent visit to the City of Mexico in connection with these that she contracted the attack of typhus fever of which she died. Another case of typhus contracted in Mexico is that of Mr. H. Pendleton Maxwell, a young Irish gentleman, who went out there with Lord Stanhope and the Earl of Chesterfield to look into some railroad schemes, and who recently returned to New York. He is now in the hospital on North Brother Island, and is said to be improving.

Col. Elliott F. Shepard. — Considerable surprise has been expressed that the surgeons in the case of Col. Elliott F. Shepard did not insist that an autopsy should be made. It seems that some three years ago one of the large life insurance companies refused to take him as a risk, on the ground that the medical examination showed indications of incipient Bright's disease. The medical examiners of another prominent company, however, passed him, and he secured a large amount of insurance in it.

Mortality. — The mortality in the city still remains unusually high, the number of deaths reported during the week ending April 1st being 1,149, a slight excess over the number of the previous week. The deaths from pneumonia and influenza both showed an increase, and those from pneumonia exceeded the average for the corresponding week during the past five years by 111. The total number of deaths during the five weeks ending April 1st amounted to 1,173.

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Miscellany.

THE INTERNATIONAL SEMMELWEIS MEMORIAL.

It is proposed to erect an international monument to the memory of Semmelweis, in Budapest; and for this purpose arrangements have been made to collect and forward subscriptions. I. Ph. Semmelweis, having noticed in the obstetrical clinical at Budapest, not only that puerperal fever appeared to be epidemic, but that it was much more common in certain services than in others, made a careful study of the subject, the result of which was the publication, in 1861, of a monograph, insisting upon the infectious character of the disease, and showing that the infection was local rather than general and was to be combated by cleanliness. He appears to have been so much in advance of his age, that instead of receiving credit for his opinions, he suffered in reputation as being visionary and impractical and it was not until after his death that a just value was attached to his work. He died in 1865 in Vienna. In 1891 his body was removed to Budapest, where it is now proposed to build a memorial. A committee has been appointed by the medical faculty of the Budapest Royal University, in conjunction with the Royal Medical Society, to decide upon the form of this memorial. This Committee have issued a circular, showing that "in consideration of the fact that the services of Semmelweis are not confined to the narrow sphere of a single town or country, they propose, together with some pious tokens of appreciation of a local character, the erection of a memorial on a suitable site in Budapest, the capital of Hungary, to express in this way the importance of the blissful activity of this ever memorable man. And in order to give the whole scientific world, in the widest circles, the opportunity of participation in this work of recognition, international collections are to be initiated. We have, besides, the conviction, that among your professional acquaintances, there may be many grateful families, who would gladly subscribe a sum, however modest, to honor the man, whom they have to thank that the young wife, the mother, is enabled to wait her time of difficulty with calmness."

All subscriptions may be addressed to the Treasurer of the Hungarian Executive Committee: Dr. Elischer, IV Petöfi-tér, Budapest, Hungary. The Executive Committee hopes to be in the position of submitting a full report of its activity, on the occasion of the International Congress for Hygiene and Demography, to be held in Budapest in 1894. The American members of the International Committee are H. R. Bigelow, Philadelphia; J. S. Billings, Washington; E. W. Cushing, Boston; C. M. Green, Boston; B. C. Hirst, Philadelphia; W. W. Jaggard, Chicago; J. H. Kellogg, Battle Creek; A. F. A. King, Washington; Henry O. Marcy, Boston; W. W. Potter, Buffalo; W. L. Richardson, Boston; A. D. Sinclair, Boston; J. C. A. Skene, Brooklyn; M. Storer, Boston.

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CHANGES OF TYPE IN EPIDEMIC DISEASES.

THIS was the subject of the Milroy Lectures, delivered in London by Dr. Whitelegge. He summarizes by saying that epidemic prevalence may be brought about either by increased potency of the disease itself or by increased mechanical facilities for diffusion. Epidemics of the latter class, including water epidemics, milk epidemics, and, as a rule, seasonal prevalence, are attended with lowered case mortality, because the conditions under which they occur imply a lessened average susceptibility, therefore a less severe average attack.

Underlying all great epidemics there is a change of epidemic type, a change in the quality of the disease itself. There is evidence of a like change on a smaller scale in most, if not all, epidemic diseases, the intensity rising and falling at intervals which are not necessarily uniform for the same disease, and are very different in different diseases. Whether on the larger or smaller scale, the intensification is marked by greater severity of attack, greater power of overcoming comparative insusceptibility, and greater power of epidemic diffusion.

While some diseases are capable of rapid or even abrupt changes in intensity, others are not; and this distinction serves to mark off broadly two principal groups: those which are mobile and those which are comparatively constant in type.

The first group — that of diseases which are capable of most rapid change in type — includes those which are most nearly allied to saprophytic life, most dependent upon filth conditions; most able to infect soil, water, milk, and lower animals; most liable to relapses, and least protective. Diseases of this class may be highly modified, and some of them may assume and maintain a form so slight that their true character is unrecognized. Under favorable conditions, their intensity may slowly or suddenly increase, giving rise to epidemics of severer type. Among diseases of this class, an epidemic normally begins and ends with the milder forms, the more severe attacks occurring at the time of greatest prevalence. The severity and prevalence rise and fall together.

In the second group, among diseases of more fixed character, extreme modification of epidemic type does not occur; but individual attacks may be extremely mild, owing to high resistance. Among such diseases there is evidence of a rise and fall of intensity if the epidemic course be traced for a term of years, perhaps covering several minor epidemics. In these brief outbursts of diseases of more constant type there is little, if any, change of intensity comparable to that of the mobile class; the prevalence being determined and controlled mainly by external conditions, but the type being that of the prevailing phase of a broad cycle.

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THE TREATMENT OF CHOLERA.

DR. FRANK ABBOTT, Jr., who made good use of his opportunities for the practical study of cholera in the position of deputy health-officer in New York last autumn, contributes an interesting and concise paper on this subject.[1] The rational method of attacking the disease where it exists, by the methods of Cantani depend upon the possibility of getting irrigating solutions into the small intestine. It has been proved that in some instances rectal injections have penetrated into the stomach. It happens in some cases, although the solution penetrates and fills the large intestine, the last portion of the ileum is so flexed upon the cæcum that the injection will not pass into the small intestine, but a careful and well-directed massage of the right iliac fossa will soon overcome the obstruction. A two per cent. solution of tannic acid stops the growth of the comma bacilli and destroys its vitality in from one to three hours. Enteroclysms of this solution, one-half gallon at a time at 104° to 106° F., not only act as an intestinal disinfectant, but by their temperature counteract the tendency to collapse, which is one of the characteristics of this disease. The intestinal injections should be begun in all cases, without exception, as soon as the first diarrhœic symptoms appear. In some instances the injection does not seem to penetrate into the colon, but by allowing the solution to first fill the rectum and advancing the catheter gradually, as the intestines fill, the operation is performed without difficulty. The volume of the injection should be measured by the age and size of the patient; in the adult the dose may vary from one quart to one gallon, repeated as often as symptoms demand. In some instances, when vomiting has not begun, calomel in doses of ten grains, repeated every hour until thirty grains have been taken, may prove of great advantage.

Another fact that should not be forgotten, whether the case is slight or grave, is the disinfection of the external integuments; all patients should be thoroughly washed in an immersion hot bath and their skin cleansed with slightly acid solutions. They should be put in a warm bed, and stimulants, such as hot coffee or hot tea with brandy, administered. When the diarrhœa is profuse and persistent, and the first signs of collapse appear, hypodermic injections of alkaline solutions should be resorted to without a moment's delay. The solution for hypodermic injections, is prepared by dissolving seven parts of sodium chloride in one thousand parts of sterilized water with or without the addition, according to the necessity of the case for a stimulant, of ten parts of brandy or six parts of pure alcohol, and heating the whole to 98.4° F. The operation is performed by means of an ordinary bulb or fountain syringe, and a small-calibre aspirating needle inserted, preferably, in the latero-thoracic region. In an adult a quart is not an excessive amount, and this may be repeated as often as required until the pulse, which should be the guide to the physician in these cases, becomes strong and full. A quart of fluid is generally absorbed by an adult in about thirty minutes. If the absorption does not take place the probability is that the vitality of the patient is so low that all interference is useless. Hypodermoclysis and enteroclysis must be continued until the temperature of the body and the action of the heart show an improvement in the case. Hot-air baths are most beneficial to maintain the temperature of the body. If the symptoms of asphyxia are persistent, notwithstanding the above treatment, inhalations of oxygen under certain circumstances have been of great benefit in cases which seemed almost hopeless. Cramps, which are the most distressing symptom during the attack in its advanced stages, are relieved by the combined action of the hot-air baths and massage.

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[1] Medical Record, March 25th.

Opium and all its derivatives, as well as hydrate of chloral, bromides, etc., should be avoided.

The results of good treatment were practically demonstrated in the last imported epidemic of Asiatic cholera at the quarantine station. In most of the steamers which brought the cholera patients over, the death-rate on board reached over ninety per cent. of the total number of sick, while at Swinburne Island the percentage of death was reduced to twenty per cent., and it is believed that treatment with careful attention to detail, and begun early enough in the disease, may reduce the mortality still lower.

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THERAPEUTIC NOTES.

Cresol Iodide[1] (Ortho-Cresol Iodide) is another of the numerous substitutes for iodoform. Cresol is the prominent constituent of crude carbolic acid in varying proportions of the ortho-meta and para-cresols. The iodide of the ortho-cresol is the one found to be efficient as a disinfectant, especially in nasal and laryngeal affections. It is a fine, pale-yellow powder with a pronounced odor, but agreeable in comparison with iodoform; insoluble in water. All the compounds of cresol are powerful antiseptics, but all have the disadvantage of a very variable composition, of adhering to or rendering slippery the operating instruments and hands, and of readily oxidizing in the air. These disadvantages apply to all the various compounds of cresol known as lysol, solveol, solutol, saprol, etc. This iodide has not been long enough in use to predict its future, but surely, almost everything is at once seized upon which attempts to supply a satisfactory substitute for iodoform.

A Desiccated Extract of Thyroid Glands is now made and furnished to apothecaries by the manufacturers, for the treatment of myxœdema. The advantages of this method of preparation are evident.

Europhen[1] (Iso-Butyl-Ortho-Cresol Iodide) — one of the most effective substitutes for iodoform — still gives daily evidence of the very unwise practice of choosing very similar names for very dissimilar agents, as it has been repeatedly shown that more good luck than good management has avoided poisoning results from following the confusion in name between this article and Euphorin. It is not very difficult to see how readily one might be written for the other in a hurriedly-composed prescription. Europhen has had a largely increasing use during the past year in throat and nose affections, in spreading ulcers and in soft sores, with such gratifying results that many claim that it excels iodoform. Its advantages — of a far less disagreeable odor, and non-toxic effects — give it a good claim to rank well with iodoform, and repeatedly call forth expressions of approval from all.

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OBITUARY. — GEORGE C. SHATTUCK, M.D.

Dr. George C. Shattuck was born in Boston in 1813, and died at his home in Boston, March 22, 1893. His father and grandfather were both physicians of large practice and wide experience; the former in Boston, the latter in Worcester County. His mother was Eliza Cheever Davis, a descendant of old Boston merchants, and daughter of the first speaker of a Massachusetts House of Representatives under the Constitution of the United States. He went to the Boston Latin School, and subsequently to the famous Round Hill School, established at Northampton, Mass., by Messrs. George Bancroft and Joseph G. Cogswell. He graduated from Harvard College in 1831, having among his classmates Wendell Phillips and J. Lothrop Motley. After a year spent at the Harvard Law School, in obedience to his father's wishes, he entered the Harvard Medical School, from which he graduated in 1835, taking some additional courses at Bowdoin, and with his father's personal friend, Professor Lincoln, at Burlington, Vt. He then spent three years in Europe, principally in Paris and London, where he came under the influence and made the acquaintance of the principal clinical teachers of that day.

In common with his friends Bowditch, Gerhard, Stillé and Metcalfe, he was much influenced by the methods, the teaching and the personality of Louis, with whom he kept up his intimacy until the latter's death, forty years later. He translated into English Louis' work on yellow fever. At Louis' instigation, he crossed over to London and spent some time in the London Fever Hospital, acquiring data for the accurate differentiation of typhus and typhoid fevers, a question which was still occupying Louis' attention, although his book, in which he introduced the name "typhoid," appeared in 1829. Dr. Shattuck's experience with typhus in London, and his friend Dr. Stillé's experience with it in Philadelphia, under Gerhard, before going to Paris, gave them materials for papers before the Paris Society for Medical Observation, in 1838. These papers were of signal service in establishing the distinctions between typhus and typhoid fevers which Louis had suggested, but which the infrequency of typhus fever in Paris had given French physicians in general little opportunity to verify.

On returning to Boston, Dr. Shattuck immediately entered upon the practice of his profession, for which he always had a genuine enthusiasm, with his father. In 1840 he married Miss Brune, daughter of F. W. Brune, of Baltimore. He was appointed visiting physician to the Massachusetts General Hospital in 1849, upon the resignation of Dr. Oliver Wendell Holmes. He served in this capacity for thirty-six years, and upon his resignation, in 1885, was appointed to the Board of Consultation. In 1855 he was appointed Professor of Clinical Medicine in the Harvard Medical School, and in 1859 was transferred to the chair of Theory and Practice. This professorship he held until 1874. He was during many years Dean of the Medical School, at a time when the school property and policy were entirely controlled by the faculty, and when, but for the name, it was, to all intents and purposes, a private undertaking. As professor and as dean, Dr. Shattuck's disinterested unselfishness in seeking to promote what he considered the interests of the school and of the students, without regard to the effect upon his own position or preferences, was a marked characteristic. Several of the school's best teachers would have been lost to it without his persistent advocacy of their appointment; and in more than one instance place was made in his own department for those who could not be provided for in other departments. His advocacy of an extension of teaching, outside of the regular school lectures, to younger men in quiz-classes and otherwise, was practical as well as theoretical. Practical, inasmuch as he gave for this purpose the use of the large and convenient room in his office building. Had he been supported in these efforts, the school might have had an earlier development in this important direction. He introduced the Clinical Conference which has since proved a valuable feature in the various departments of the school.

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[1] Squibb's Ephemeris.

Among Dr. Shattuck's colleagues at the Harvard Medical School were Drs. O. W. Holmes, H. I. Bowditch, H. J. Bigelow, D. Humphreys Storer, E. H. Clarke, D. W. Cheever and J. C. White.

In 1866 he delivered the annual address before the Massachusetts Medical Society, on "The Medical Profession and Society." In 1872 and 1873 he was President of the Society. For many years he was Chairman of its Committee on Publications. He was a member of the American Academy of Arts and Sciences, Vice-President of the American Statistical Association, an honorary fellow of the Philadelphia College of Physicians, a member of the Paris Society for Medical Observation, and of the leading medical societies of Boston.

Dr. Shattuck had, as has been said, a real enthusiasm for the practice of his profession, but his activity was much interfered with at a critical period by a loss of health and consequent enforced rest and absence. His interests, however, were varied, and were not confined solely to medicine. Ecclesiastical and educational questions occupied much of his time and thought. He was very conversant with forms of religious belief and questions of church government, both at home and abroad, in the past and at present. His own church, the Protestant Episcopal, and its services, were very dear to him. He knew and had thought much about schools and colleges, and always had a keen interest, which he may be said to have inherited from his father, in the training of young men. His interest in religion and education led him to found St. Paul's School, at Concord, N. H., and to assist in establishing a similar institution at Faribault, Minn. For a number of years he delivered annual lectures on physiology and hygiene to the students at Trinity College, Hartford, Conn., and at St. James' College, Maryland.

Dr. Shattuck was a man of excellent judgment and discrimination, of a very liberal training, of wide acquaintance with the world and with human nature, of a firm purpose but a tender heart, of a rare unselfishness, a constant courtesy and thoughtfulness for others. Of deeply religious instincts and beliefs, he still had an invariable charity for all men and all differences of opinion and belief. He had, moreover, a keen sense of humor, and was a delightful companion whether at home or abroad. In a word, he combined many characteristics not often united in one person. He had a genius for friendship, and the old friends for him were always the same. He was a man who looked at this world and beyond it to the next in a truly broad and catholic spirit. He was not too good for this world or the work of this world; but if he was not good enough for a better one, there will be few who find place in such.

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Correspondence.

LETTER FROM COCHIN CHINA.

THE FRENCH CAPITAL — THE ANNAMITE NATIVES.

SAIGON, COCHIN CHINA, February 6, 1893.

MR. EDITOR:— Cape St. Jacques is the anchorage near the mouth of the river of Saïgon, up which we find our winding way, for thirty miles, through the wide delta of rice-fields, banana-plantation and immense marshes, to be astonished when our eyes see the large, beautiful city, with wide shady avenues, large edifices (public and private), cathedral towers, hospitals, barracks, arsenal, botanical garden, government palace and grounds, which French power and genius have made the capital of their Indo-Chinese Empire. Only a few years ago a river-side, native village lay here. Now, a spacious town borders this branch stream; ocean steamers lie at dock; river boats ply hundreds of miles up country for traffic and postal purposes; telegraphs and telephones abound.

Here is located the Military Hospital, fitted for five hundred occupants, to which severe cases from the whole of Indo-China are sent. The place being under care of the French, details are unnecessary. In the barracks is an infirmary, accommodating about fifty. In connection with the large hospital is a Pasteur Institute, established about ten years since; Dr. Calmette is now in charge. Persons from China and Java come for treatment. Bovine vaccine is prepared. Various experiments in bacteriology are carried on by the several latest methods.

The diseases of this country are chiefly those occurring below the diaphragm. Dysentery is treated by milk diet, with small repeated doses of ipecacuanha during three or four days. Small doses of creasote are used if epithelium be not removed. This disease is much less since good water is obtainable. By filtering, the river water is made safe, and is distributed to the city by conduits.

Two years is the term of military service — though individuals often return after a period spent in Europe. A longer continuous residence is considered too trying on the organization. Only natives can long endure the climate, or work exposed to weather. Sewage is utilized on the fields.

The Chinese-Annamite city, Cholon, of about 80,000 inhabitants lies about ten miles from Saïgon. There is here a municipal hospital — for one hundred — where I saw several cases of leprosy. At Choquan, between the two cities named, is the natives' hospital, part of which is allotted to serve as a lock-hospital, whose inmates looked a sorry group. In various parts of the country are small infirmaries and hospitals and schools under French direction.

The Chinese mandarin is the character of upper class literature: Chinese life in general serving as a model, though woman is freer here than in the empire to the North.

An Annamite *savant*, Mr. Petrus Truong Vinh Ky, has written numerous volumes, in French, on the grammar of his language and the manners and customs of Annamite Society. He speaks English, French, Spanish, and a host of tongues related to Chinese, besides being familiar with Hebrew, Arabic, Sanscrit and the languages of Hindustan. His Annamite home, near Saïgon, is a veritable museum. He received us in foreign style. Mrs. Ky shook hands in the western way, and looked active and bright, though the mother of twenty children.

"The origin of the Annamite people is uncertain — Chinese, or Antochlone, as the name Giao Chi seems to indicate." This name designates an anthropologic particularity which is yet noticed in all the Annamite: "*l'ecartement* (separation) of the great toe."[1] I have seen this feature, but do not think the separation any greater than might easily occur in persons going bare-foot. The great and other toes are parallel. Moreover, they often wear a sandal (as foot-gear) which is held on by a button-topped peg placed between the great toe and the one next to it — which procedure alone might push the toes apart. In some feet it was not noticeable.

There are some native physicians who have considerable experimental knowledge of certain diseases, know the virtues of plants, and make ointments; generally this practice is limited to external troubles. They have no scientific acquaintance with the human body, and are powerless against internal maladies. On the other hand, there is a vast horde of charlatans and sorcerers who do a very lucrative business, for the Annamites are very credulous in that direction. They are beginning, however, to appreciate foreign art in medication. Moreover, as nearer home, they often consult the scientific surgeon, and then make sure by asking advice of their native "quacks" (*talapoin*), in whom they trust.

F. B. S.

[1] Colonies Françaises, t. ii, p. [illegible], 1889, Masson, Quantin, Paris.

METEOROLOGICAL RECORD.

For the week ending March [illegible], in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date	Barometer		Thermometer			Relative humidity			Direction of wind		Velocity of wind		State of weather		Rainfall
	Daily mean	Daily mean	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] P. M.	[illegible]
S. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	E.	[illegible]	[illegible]	C.	C.	
M. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.	[illegible]	[illegible]	[illegible]	C.	
T. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	S.W.	[illegible]	9	[illegible]	[illegible]	[illegible]
W. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	E.	10	[illegible]	O.	N.	
T. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.E.	[illegible]	11	N.	O.	[illegible]
F. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.W.	[illegible]	[illegible]	[illegible]	O.	[illegible]
S. 25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	15	[illegible]	F.	O.	
[illegible]														

[illegible] of M[illegible]

RECORD OF MORTALITY

For the Week ending Saturday, March 25, 1893.

Cities.	Estimated population	Reported deaths in each	Deaths under five years	Percentage of deaths from: Infectious diseases	Consumption	Diarrhœal diseases	Diphtheria and croup	Scarlet fever
New York	[illegible]	[illegible]	[illegible]	[illegible]	25.68	3.00	5.44	1.28
Chicago	[illegible]	[illegible]	[illegible]	21.96	[illegible]	8.10	[illegible]	2.70
Philadelphia	[illegible]	[illegible]	[illegible]	13.64	[illegible]	.88	7.26	1.32
Brooklyn	[illegible]	—	—	—	—	—	—	—
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	9.24	44.88	—	[illegible]	1.32
Baltimore	[illegible]	—	—	—	—	—	—	—
[illegible]	[illegible]	[illegible]	45	9.80	20.33	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	46	[illegible]	[illegible]	1.56	[illegible]	3.12
Pittsburg	[illegible]	111	47	21.60	14.40	[illegible]	2.70	[illegible]
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.78	1.39
Washington	[illegible]	[illegible]	[illegible]	11.10	20.72	[illegible]	3.70	1.48
Nashville	[illegible]	[illegible]	10	[illegible]	[illegible]	[illegible]	[illegible]	—
[illegible]	[illegible]	—	—	—	—	—	—	—
Portland	[illegible]	17	7	[illegible]	[illegible]	—	5.88	[illegible]
Worcester	[illegible]	[illegible]	11	[illegible]	[illegible]	[illegible]	—	3.13
Lowell	[illegible]	[illegible]	12	[illegible]	[illegible]	10.85	—	—
Fall River	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	8.58
Cambridge	[illegible]	[illegible]	4	[illegible]	[illegible]	—	—	—
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	6.90	—
Springfield	[illegible]	[illegible]	4	13.33	13.33	—	—	6.66
Lawrence	[illegible]	—	—	—	—	—	—	—
New Bedford	44,947	[illegible]	11	—	[illegible]	—	—	—
Holyoke	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	5.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	[illegible]	12.50
Salem	[illegible]	[illegible]	[illegible]	4.35	26.10	—	4.35	—
Haverhill	[illegible]	11	3	[illegible]	[illegible]	—	—	—
Chelsea	[illegible]	14	[illegible]	[illegible]	21.42	[illegible]	—	—
Malden	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Newton	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—
Taunton	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Gloucester	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Fitchburg	[illegible]	[illegible]	1	—	—	—	—	—
Waltham	[illegible]	[illegible]	[illegible]	11.28	[illegible]	—	—	—
Quincy	[illegible]	[illegible]	[illegible]	11.11	22.22	—	11.11	—
Pittsfield	[illegible]	[illegible]	—	—	—	—	—	—
Northampton	[illegible]	[illegible]	1	—	[illegible]	—	—	—
Everett	14,745	[illegible]	3	[illegible]	40.00	—	—	[illegible]
Newburyport	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Amesbury	[illegible]	[illegible]	2	—	50.00	—	—	—

Deaths reported [illegible] under five years of age 1,2[illegible]; principal [illegible] croup, [illegible] fevers [illegible] croup 114, [illegible] typhoid fever [illegible], scarlet fever [illegible], cerebro-spinal meningitis 33, whooping-cough 31, measles 27, [illegible] 7, [illegible] 7, small-pox (New York) 4, typhus fever (New York) 2.

From [illegible] Chicago and Philadelphia 11 each, Pittsburg [illegible], Washington 3, Milwaukee, Lowell and Fall River 1 each. From cerebro-spinal meningitis New York 1[illegible], Chicago 14, Holyoke 2, Philadelphia and Worcester 1 each. From whooping-cough New York 20, Nashville 3, Philadelphia and Boston 2 each, Cleveland, Washington, Portland and Springfield 1 each. From measles Cincinnati and Chicago 5 each, Cleveland and Pittsburgh 4 each, New York and Philadelphia 3 each, Boston, Waltham and Everett 1 each. From erysipelas Chicago 3, New York, Cleveland, Milwaukee and Lowell 1 each. From malarial fever New York 5, Philadelphia and Cleveland 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending March 18th, the death-rate was 19.9. Deaths reported 3,931; acute diseases of the respiratory organs (London) 338, whooping-cough 102, diphtheria 91, measles 85, scarlet fever 52, diarrhœa 4[illegible], fever 2[illegible], small-pox (London 3, West Ham 2, Bristol and Liverpool 1 each) 7.

The death-rates ranged from 13.9 in Derby to 29.3 in Bolton; Birmingham 18.0, Bradford 21.6, Bristol 17.8, Croydon 14.4, Hull 20.7, Leeds 20.7, Leicester 15.3, Liverpool 25.2, London 19.1, Manchester 25.5, Norwich 25.0, Nottingham 19.3, Sheffield 18.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 25, 1893, TO MARCH 31, 1893.

Leave of absence for sixteen days, to take effect on or about April 1, 1893, is granted First Lieut. George D. DeShon, assistant surgeon, U. S. A., Fort D. A. Russell, Wyoming.

Leave of absence for one month, with permission to apply for an extension of one month, is granted Lieut.-Col. Charles C. Byrne, deputy surgeon-general, U. S. A., medical director, Hdqrs. Dept. Columbia.

Leave of absence for two months on surgeon's certificate of disability, with permission to leave the Department of the Platte, is granted Captain William G. Spencer, assistant surgeon, U. S. A.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, April 10, 1893, at the Medical Library, 19 Boylston Place, at 8 o'clock, p. m.

Dr. Harold C. Ernst will read a paper on "Phagocytosis," illustrated by lantern-slides. Drs. R. H. Fitz, J. C. Warren and H. Jackson are expected to take part in the discussion.

John T. Bowen, M.D., *Secretary.*

RECENT DEATH.

T. B. Townsend, M.D., of New Haven, Conn., died March 31st, aged fifty-seven years. During the war he had the charge of the government district hospital, and was subsequently surgeon to the New Haven Railroad. For the past fifteen years he had been in poor health and spent much of his time away from home.

BOOKS AND PAMPHLETS RECEIVED.

Report of a Case of Syringomyelia, With Exhibition of Sections of the Spinal Cord. By James Hendrie Lloyd, A.M., M.D. Reprint. 1893.

The Third Year's Work at the Clinic for Diseases of the Rectum in the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprint. 1893.

Trional and Tetronal; Clinical Observations on their Action as Hypnotics and Sedatives for the Insane. By Wm. Mabon, M.D., Utica, N. Y. Reprint. 1893.

The Disease of Inebriety, from Alcohol, Opium and other Narcotic Drugs, etc. Arranged and compiled by the American Association for the Study and Cure of Inebriety. New York: E. B. Treat. 1893.

Elementary Physiology for Students. By Alfred T. Schofield, M.D., M.R.C.S., late House-physician to the London Hospital; Special Lecturer, National Health Society. Philadelphia: Lea Brothers & Co. 1892.

Hand-book of the Diagnosis and Treatment of Diseases of the Throat, Nose and Naso-Pharynx. By Carl Seiler, M.D., Instructor in Laryngology and Lecturer on Diseases of the Upper Air-passages in the University of Pennsylvania, etc. Fourth edition. Philadelphia: Lea Brothers & Co. 1893.

A Treatise on the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M.D., LL.D., Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania. In two volumes. Vol. I. Philadelphia: W. B. Saunders. 1893.

Psychopathia Sexualis, with Especial Reference to Contrary Sexual Instinct; A Medico-Legal Study. By Dr. R. von Krafft-Ebing, Professor of Psychiatry and Neurology, University of Vienna. Authorized translation of the seventh German edition. By Charles Gilbert Chaddock, M.D. Philadelphia: The F. A. Davis Company, Publishers. 1893.

Original Articles.

FOUR SUCCESSFUL NEPHRECTOMIES: WITH REMARKS.[1]

BY MAURICE H. RICHARDSON, M.D.,
Visiting Surgeon to the Massachusetts General Hospital; Assistant Professor of Anatomy, Harvard Medical School.

CASE I. Tuberculosis of right kidney; excision; recovery.
CASE II. Tuberculosis of left kidney; extensive infiltration in perinephritic tissues; sinus into pelvis; excision and drainage; recovery.
CASE III. Tumor of right kidney; probably adenoma; excision; recovery.
CASE IV. Hydronephrosis; calculus; and double ureter of left kidney; excision; recovery.

PREVIOUS to 1892 I had made but one attempt[2] to remove the kidney. The operation was abandoned on account of extensive adhesions caused by a perinephritic inflammation of many years' duration. The patient, J. R., at the age of sixteen, in 1874, had been operated upon by Dr. Porter at the Massachusetts General Hospital, and a small stone had been removed from the bladder by crushing. In 1880 he began to have pain in the left lumbar region, which in the course of a year was attended by a swelling occupying the whole space between the last rib and the crest of the ilium. July 5, 1881, at the Carney Hospital, I laid open the tumor, which contained a large amount of pus, and removed a phosphatic stone weighing thirty grains. The wound never ceased discharging, but the general health became so much improved that life was useful and enjoyable.

On August 9, 1886, this patient applied at the Massachusetts General Hospital for further treatment, there being still a free offensive discharge.

August 25, 1886, I made an incision in the left loin extending from the last rib to the crest of the ilium. There was no kidney-tissue to be found: in its place there was the thin-walled cavity of an extensive pyonephrosis. The wall of the abscess was more than adherent to the surrounding parts: it had become so intimately connected with adjacent structures by extension of the inflammatory process in all directions that it was impossible safely to attempt dissection. The descending colon was practically a part of the renal wall, and above the pancreas stomach and spleen were involved. Attempts to remove the kidney were given up; the abscess cavity was thoroughly explored, curetted and drained. A good recovery followed, but the sinus has existed ever since.[3]

This patient has been a baker at the Tewksbury Almshouse till very recently. A letter from Dr. Howard states that he has enjoyed good health except for the persistence of the fistula.

During my connection with the Massachusetts General and Carney Hospitals I have made several explorations in cases of renal tumor where the kidney and surrounding tissues were so extensively involved that enucleation was impossible.

CASE I. August 4, 1892, Mary B., aged twenty-five, from Nova Scotia, was admitted to the Massachusetts General Hospital. Eleven years before she had had a sinus over the olecranon, leading down to the bone, which healed after two years, with a stiff elbow. The family history is decidedly phthisical. Last March she was taken with violent pain in the right side, which continued until the abdomen became distended and very sensitive. The pain was localized in the right renal region and a swelling appeared there. Since April of the present year she has been in bed more or less, and has had sharp pain in the right hypochondrium on any exertion; has had to pass water every hour, or oftener, both night and day. There was no diarrhœa.

This woman was pale, poorly nourished, and somewhat emaciated. Examination of the lungs and heart was negative. The urine was normal in color, specific gravity 1,016, and contained one-eighth of one per cent. of albumen. The sediment contained pus, free and in clumps, with masses of epithelium. The right elbow was anchylosed at a right angle. The abdomen was not distended. In the right hypochondrium there was a solid tumor the size of the closed fist, which could be grasped between the fingers, was movable, and could be displaced downward and inward half the distance to the median line. There was no evidence found of tuberculosis. The amount of urine ranged between twenty and forty ounces.

On August 17th, an incision was made, five inches long on the outer side of the right rectus muscle through the linea semilunaris. An enlarged, irregular, and movable kidney was found in the usual position, covered with peritoneum, over which lay the collapsed ascending colon. An incision was made through the peritoneum on the outer side of the margin of the ascending colon, and the kidney was uncovered and delivered with the greatest ease. The ureter was cut about an inch from the kidney between two ligatures. A further separation was then easily accomplished until the organ remained attached only by its main vessels. These were tied separately with the greatest care, and the organ was then cut away with scissors. There was no bleeding whatever from the pedicle. The abdomen in the neighborhood of the kidney was then carefully irrigated, and dried with dry sterilized gauze. The distal end of the ureter was sewed into the lower angle of the wound, and a small gauze drain left at the bottom of the renal space. The abdominal walls were united by interrupted silver-wire and silk sutures.

During the operation, before removal of the right kidney, the hand was passed to the other kidney. This was apparently normal in shape and size, and there was no evidence of tubercular infiltration. The upper part of the excised kidney was occupied by an abscess connected directly with the ureter. Considerably more than half of the organ was involved. Before cutting the kidney open, however, it was impossible to say that there was very much disease. Time of operation twenty minutes.

On the following day she passed twenty ounces of urine. The temperature rose the next night to 100.4°, but after that came down to normal. Four days after the operation the bowels were moving well, the temperature was normal, and the gauze drain had been removed. The amount of urine was about twenty ounces. The stitches were taken out at the end of one week; the appetite was good, the urine had risen to fifty ounces, and the temperature was normal.

On the 30th of August, thirteen days after the operation, the wound was entirely healed. On the 10th of September she insisted on going home, and was discharged. The urine at that time was normal in color, acid, specific gravity 1,014, and contained a slight trace of albumen. There was a small amount of pus in clumps, with fatty degenerated epithelial cells and mucus; no casts.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 4, 1893.

[2] Boston Medical and Surgical Journal, May [illegible], 1892, p. [illegible], No. 1. Mass. Gen. Hosp. Surg. Records, vol. [illegible], p. [illegible].

Case II. Sarah D., a patient of Dr. Buss of [illegible], thirty-one years of age, was born in England. There was no tubercular history. The present trouble came on after the birth of her second child, five years ago. Then every six weeks she would have spasms of very severe pain in the left renal region running down to the groin and thighs. These would last for about a day and then pass away, leaving her very weak for a day or two. Three years ago she fainted in one of these spasms and went to a hospital in Liverpool, England, where a lump was found in the left side. For a month or two before this she had noticed that her urine was thick and cloudy and deposited much white sediment and that micturition was more frequent. She was told that she had an abscess of the kidney, which was opened. Ever since there has existed a sinus in the left lumbar region. For the first year the discharge of pus was very great, and for the last six months about half a cupful a day. Urine has come through the sinus. Since the operation she has been able to work and has felt pretty well. Sometimes her legs would swell. The urine has been quite clear. During the last three months she has felt poorly, has lost flesh and had chills.

Physical examination shows a poorly nourished and anæmic woman; temperature 100°; pulse 82; no œdema. In the left lumbar region there was a tender tumor the size of a child's head, well defined below, indefinite above and flat on percussion, which extended down into the left groin. In the left lumbar region were scars of old incisions and a sinus from which a small amount of puriform discharge was oozing. The urine was normal in color, acid, 1,028, with a trace of albumen, much pus, some blood, squamous epithelium, excess of urates and mucus. Examination of heart and lungs negative.

This case seemed very much like the case referred to of operation for renal stone, but the woman was in such condition that it seemed to me wise to provide better drainage if it was found impossible to remove the cause of the suppuration. A long incision was made in the left linea semilunaris directly over the tumor and extending as high as the margin of the last rib. When the peritoneum was opened a mass of adhesions was found filling the whole left hypochondrium. The intestines lay on the inner side of the tumor, somewhat adherent; these were separated and pushed towards the median line and kept there. The tumor contained numerous pockets which extended in all directions, the most distant through the mesentery of the descending colon to the right side of the bodies of the vertebræ. These were all thoroughly curetted and packed. At the centre of the inflammatory mass the kidney was found, directly through the centre of which extended the sinus which had been discharging for so many years through the back. This evidently was a pyo-nephrosis which had resulted in perforation of the kidney and an abscess requiring external drainage. The kidney tissue was shelled out without much difficulty, and there was no hæmorrhage from the pedicle. The whole left side of this woman's abdomen at the close of the operation was packed with gauze which extended in all directions through the sinuses. The few renal vessels were secured with silk. The ureter was tied, cauterized, and dropped back. The whole cavity was thoroughly flushed before packing. An incision an inch and a half in length was made through the old sinus in the left flank and a long rubber tube was carried through the cavity downward and to the right through the opening in the mesentery of the descending colon.

The patient stood the operation, which did not last more than half an hour, very well indeed. There was no nausea. There was a good deal of serous ooze during the evening and night. August 28th, the following day, she was very comfortable. Passed twelve ounces of urine from the bladder.

On the third day there was some nausea and the abdomen was slightly distended. On the fourth the gauze was removed from the abdomen. The wound was very clean and beginning to granulate; it was loosely packed with iodoform gauze. The bowels moved this day.

On the 6th of September the urine was found to be normal, acid, 1,012, with a slight trace of albumen, very little pus, squamous epithelium, mucus, and no casts. After the 13th of September the wound was dressed daily for a while, and then every second day. The cavity became closed entirely by granulations and the drainage through the flank was free.

On the 14th of September she was feeling perfectly well. The temperature was normal on the 25th, and there was no pain; she had gained in weight; the cavity was filling up rapidly — now the size of an orange — and the sinus was very small. She was then up and about in a wheel-chair, and passing fifty ounces of urine.

On October 6th she was discharged to Waverley, having gained about ten pounds.

This woman made a complete recovery.

Case III. Lucinda W., age fifty-nine, born in Maine, entered the medical side of the hospital on August 9, 1892.[4]

One sister died of consumption. She has had more or less dyspepsia for the last ten years; five children; one miscarriage.

During the last ten years she has had frequent attacks of dyspepsia with intense pain, and occasional spitting of blood. Vomiting has been infrequent. Blood came up without cough, bright red. At each attack noticed increase in size of a lump in the right side which she first noticed eight years ago. Her attention was first called to the tumor by its slipping under the ribs when she stooped over. Its size then was about that of a teacup. She had clay-colored stools after attacks of pain and at times had chills with them. Of late has had pain more frequently, the last ten days ago, when she vomited half a cupful of bile. Ten years ago weighed 146, now 101 pounds.

A tumor of the abdomen was found occupying the right lumbar region extending as far as the navel. It descended with respiration, and was globular in shape, slightly tender and elastic. Nothing suggestive of the right kidney could be felt in the loin. The mass could not be dissociated from the liver, except in the knee-elbow posture. On inflating the rectum with air and water, the tumor was crowded upward and backward. The urine contained pus, bladder cells, and a little blood without casts."

During the next few days the case was seen by all the staff in consultation, and the tumor was thought to be a kidney. It was tapped with a hypodermic needle several times, the needle apparently entering a solid body. The first time a clear fluid was withdrawn, highly albuminous, that did not give mucine reaction.

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[4] East Med. Records, Vol. 443, p. 61.

Under the microscope this fluid was found to contain blood corpuscles and some square crystalline bodies, probably not cholesterine. At the second and third tapping the fluid was bloody and contained similar bodies.

On August 23d I saw the patient for the first time, and advised operation.[5]

On August 26th an incision four inches long was made in the right linea semilunaris. The edge of the omentum presented through the healthy peritoneum, and was pushed toward the median line. The left kidney was felt and found to be normal. The right kidney was much enlarged and covered by a thin layer of adhesions and by a net-work of large veins. The peritoneum was cut through and the tumor carefully dissected out with the fingers. Gauze strips were packed into the cavity left by the kidney. A large silk ligature was passed through the pedicle with an aneurism needle and tied in two parts; then the renal vessels were separated and severally tied with pedicle silk. The kidney was removed together with the supra-renal capsule. The wound was thoroughly dried with dry sterilized gauze. There was no irrigation. The peritoneum was stitched to the edges of the wound with continuous silk sutures. A small iodoform gauze drain was put in the upper part, running to the bottom of the cavity. The edges of the wound were brought together with silk sutures, and the whole protected with gauze dressing and swathe. A large flax-seed poultice was placed over the left kidney. In the afternoon there was a slight chill, pulse became feeble, irregular, and intermittent, and the breathing rapid and superficial. Enemas of brandy, black coffee, hot water, digitalis, etc., were given. In the evening the general condition was much improved; no nausea.

August 27th passed a fair night. Complains of very little pain. Passed ten ounces of urine in twenty-four hours; pulse irregular but stronger. The chief difficulty was respiratory. On the following day she was stronger; the gauze drain was partly removed. On August 29th the improvement continued. The amount of urine this day was twenty-one ounces, dark, acid, specific gravity 1,024, with granular casts, renal cells, pus, and squamous epithelium. The pulse at times was intermittent.

On September 6th all the stitches were removed. Union was firm. On the 11th the gauze drain was entirely removed.

On the 29th of September she was discharged. She had gained very much in strength, and felt well in every way. An abdominal supporter was applied previous to her discharge.

The tumor which I show was pronounced by Dr. Whitney to be an adenoma, though there was some doubt as to the exact histological character. The greater part of the kidney was involved.

Case IV. Miss Mary M., South Boston, aged thirty-three, was kindly referred to me on October 15, 1892, by Drs. Devine and Cutler. This young woman, of sedentary occupation, always had been well until a year ago. At first she complained of indigestion and was treated by Dr. Devine for dyspepsia. She suffered from a good deal of pain immediately after eating and had occasional attacks of vomiting. At times there was a little blood in the vomitus. She was naturally inclined to constipation, and at one time noticed a small amount of blood in the stools. For the last two weeks has been troubled with fainting-spells, though not subject to them. These were probably due to the general weakness from which she was suffering. The vomiting stopped under liquid diet, although the nausea remained. Her only occupation was housework. Her temperature has been a little elevated, generally about a hundred. Three days ago she had a chill, after which the temperature went up to 101°. The pain of late has been in the left lumbar region. Examination of the urine was negative, and the heart and lungs were normal. For the past year has been gradually running down. There was a well-marked cachexia; the pulse was rapid, but of fair quality. In the left half of the abdomen there was a large, smooth tumor, tense and fluctuating, extending from the umbilicus into the left lumbar region. In front of the tumor the outlines of the ascending colon could be made out. A well-marked depression existed directly under the umbilicus, evidently corresponding to the pelvis of the kidney. The diagnosis was tumor of the kidney containing fluid, of doubtful origin, probably malignant. The effect of this upon her general health was so marked that there was little doubt in our minds as to the advisability of an attempt at removal.

On Saturday, October 15, 1892, with the assistance of Drs. Mumford and Brooks and in the presence of Drs. Cutler and Devine, I made the same incision as in the previous cases, — a long vertical cut in the linea semilunaris. I came down immediately upon the ascending colon, the mesentery of which formed the covering of the anterior right half of the tumor. The peritoneum and the attachments to the kidney were separated by an incision external to the descending colon. The tumor was then tapped with a trocar and a large amount of clear, light-colored fluid was withdrawn. Another cyst was found, which was also tapped. This collapsed the mass so much that it was easily delivered through the wound and the pedicle isolated and tied. The operation was very rapid and successful, without any complications or any apparent dangers. The ureter was tied and the wound was united by interrupted silver-wire sutures. There were no unfavorable symptoms whatever following the operation. The amount of urine continued about the same as before.

Dr. Whitney's report on this specimen is as follows:

Harvard Medical School, October 21, 1892.

Dear Doctor: The kidney removed by you on October 15, 1892, case of McGuire, measured twenty-five centimetres by ten centimetres, was partly sacculated and partly solid. The latter portion, which was about a quarter of the whole, was normal in appearance and [illegible] entered into a small ureter, [illegible] that into which the sacculated portion emptied. This latter part was separated into three large primary sacs with secondary partial divisions, all which opened into a common pelvis communicating with a small perfectly normal piece of ureter. The kidney substance covering these sacs was firm, very fibrous, and with but little active renal substance in it. The walls of the sacs were smooth and fibrous looking. Blocking up the pelvis was a large, dark, firm, single calculus, which prevented fluid escaping by the ureter, and also from passing from one sac to the other freely.

[illegible] nephrosis of the corresponding part of the kidney.

Yours very truly, W. F. Whitney.

There is a double ureter, one of which was plugged by a large stone, as you will see in the specimen. The result of the plugging was an enormous dilatation of the pelvis drained by this ureter, and a very extensive hydronephrosis. The rest of the kidney drained by the other ureter was normal in appearance. The whole specimen is a most unique and beautiful one.

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[5] [illegible]

The indications for removal of the kidney are not always clear. It seems to me that benign and locally malignant tumors of this organ are most favorable for interference, or cases of cancer in the early stages, before the surrounding parts become infiltrated. For temporary benefit a local tuberculosis makes the operation justifiable. Like tuberculosis elsewhere, however, the ultimate result must be greatly in doubt.

The removal of a kidney for extensive disease of a benign character, like the fourth nephrectomy, with the impaction of a stone, or cases of simple pyelitis, non-tubercular, or of pyelitis of a calculous origin — for such conditions it seems to me that the indications are usually quite clear. I think, also, that at times nephrectomy is indicated in cases of movable kidney. Many such have been reported, where the operation of nephrorrhaphy was not possible.

The results in the four nephrectomies which I have reported would seem to indicate that in the absence of serious constitutional or local complications the immediate mortality is quite small. I am aware, of course, that it is impossible to make any general statements based upon so small a number of cases, or to draw any conclusions as to the prognosis from four cases, but I feel very much encouraged in considering the indications for nephrectomy by the favorable results which have followed the methods which I have used in these cases, some of which were certainly very hazardous, and the operations very formidable.

In the absence of malignant or tubercular disease the prognosis is certainly much more favorable, both as to immediate and permanent results.

The method which I have taken to remove the kidney is one which it seems to me would appeal to an anatomist. The most deplorable accidents which have occurred in this operation have been caused by hæmorrhage. I therefore selected this method of anterior incision in the linea semilunaris in order to be where I could tie without delay the renal branches of the abdominal aorta and vena cava. This incision permits also the easy exposure of the affected kidney and a clear understanding of its relations; it moreover enables the operator, by going directly into the peritoneal cavity, to ascertain the state of the other kidney or other organs where it is important to know their condition.

If my experience has been small — and the experience of every surgeon thus far certainly must be small — in this operation on the living, my experience in the removal of kidneys in the dead has been very great. I should never seriously think of attempting the removal of a kidney through the loin. What I have seen of this operation in the hands of others convinces me that it is a very difficult and a very dangerous procedure. In the lumbar operation I believe that the hazard from hæmorrhage alone would exceed the immediate and the remote dangers of the whole operation by the anterior route; it is impossible to deliver a kidney satisfactorily without the greatest danger of tearing the renal vein; and again it is very difficult indeed to tie the pedicle. It should be borne in mind that in quite numerous cases there are several branches of the abdominal aorta going to the kidney, instead of one. This makes a broad, flat pedicle, which when tied by the lumbar incision must necessarily be very tense. The moment the tumor is cut away from such a pedicle the ligatures may become loosened. The hæmorrhage in such a calamity is fearful, while to find and secure the bleeding-vessels is practically impossible. I therefore should not consider seriously the lumbar operation upon the kidney where any question of its removal was involved. For the operation of nephrectomy, the lumbar is the better method.

By the anterior incision we open at once the peritoneal cavity. On the right side we find the ascending colon, which may be easily turned one side, and come down directly upon the kidney. On the left side the descending colon passes in front, and at times its mesentery is spread over the anterior surface of the tumor. Separation is very easy, however, and may be accomplished without danger to the large vessels of the meso-colon, especially if the kidney is not much enlarged. By first separating the attachments of the colon on either side at the outer edge, and pushing the whole toward the median line, we avoid all danger of injury both to the bowel and its vessels. By this route the kidney may easily be isolated and its attachments secured, the important structures meantime being easily accessible in a well-lighted field.

On separating the kidney, the pedicle should be tied in sections, with the greatest care, not using too large silk. One disadvantage in the use of silk ligatures sterilized with corrosive sublimate is the difficulty of completing the knot — of pulling it "home" — on account of friction. Having tied the pedicle in sections with small silk, and being sure that each ligature is firm, it is a good plan to apply a ligature of larger silk around the whole, fastening it with the greatest care. In this manner the danger of hæmorrhage is very slight. In the tubercular cases I have used gauze packing, and where there has been much oozing, the gauze drain.

Provided the other kidney is healthy, it seems to me that this method offers, in the absence of a septic element, the very best prognosis. In one case I sewed the ureter in the wound. In all the other cases I tied, cauterized, and left it. All the cases did equally well, and there seems to have been no difference in the result by any of these methods, but perhaps one would feel a little safer to have the ureter sewed into the lower angle of the wound. In tuberculous and inflammatory cases I believe in packing the whole cavity with dry sterile or iodoform gauze. The danger from iodoform absorption, however, has made me very cautious in the use of this drug, and I generally use dry sterilized gauze. I prefer, in closing the wound, to use silver-wire sutures in this, as in all parts of the body. In almost all cases there is no suppuration whatever. Sterilization is much more easy and perfect than in the use of silk.

In the preparation of patients for operations on the kidney I have not varied from the usual methods pursued in private practice, as described in the article by Dr. Mumford and myself. In this operation as in all others, it seems to me that time is an important element. None here reported have occupied more than thirty minutes. In considering, however, the question of time, none of the steps of the operation should be taken in haste. In the natural sequence of events in the removal of the kidney it seems to me that, by allowing plenty of time for them all, not more than thirty minutes should be taken.

In most cases the diagnosis can be made with sufficient accuracy to decide the question of operative interference. A movable tumor of the kidney, usually presents enough physical evidence in addition to that from the history and the uterine examination to base a reasonably certain diagnosis. The distinction, however, between a movable tumor of the kidney and a dilated gall-bladder is not always easy. The same remark may be true of a tumor of the pancreas or the spleen. In one case I found a dilated gall-bladder containing gall-stones where I fully expected to find a diseased kidney. This being the only case in my experience where I have been wrong in placing the disease, I think I may safely maintain that it is very seldom that there can be a serious doubt as to the location of the lesion.

It is not so easy to make an accurate diagnosis of the nature of the lesion itself, nor is it essential generally, from the very fact that in many instances an accurate idea of the condition is beyond human skill. We need to consider only those points which may or may not justify the risks of an exploration. I venture to repeat my views upon this subject in connection with the kidney already expressed in remarks upon the gall-bladder and the vermiform appendix: that in cases of disease of doubtful nature, affecting but one kidney, the patient is entitled to the benefit of the doubt, and should have the advantage of an exploration, at least. These remarks apply to doubtful cases, and not to those often seen where the nature of the disease is plain and its hopelessness conspicuous.

Explorations by needles and other devices, notably Dr. Mixter's punch, at times give the lacking information, but the method should only be used in cases of doubt, and never in such a way as to pass through the peritoneum, on account of the occasional presence of enormous venous trunks and the danger of hæmorrhage into the abdominal cavity, together with the liability to peritonitis. A sufficient contraindication to exploration lies in the detection of metastasis, remote or near, or a well-marked cancerous cachexia. A wasting of tuberculous origin, however, does not justify non-interference.

At times it is very evident that one kidney only is the seat of disease requiring radical relief, but which kidney it is cannot be made out. In such cases a median incision may be made large enough for digital exploration of both kidneys, followed by a second cut in the right or left, as the case may be. The best plan, I think, would be an incision over one kidney for the removal of that one, if diseased, followed by a similar cut on the other side if the lesion is there. By this method there is an even chance that the first will be the only cut necessary.

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MALIGNANT DISEASE OF THE PROSTATE, WITH REPORT OF A CASE OF CARCINOMA.[1]

BY CHARLES M. WHITNEY, M.D.

The patient, whose case is the subject of this paper, was a native of Ireland, fifty-eight years of age, and a carpet-weaver by trade.

He entered the City Hospital on March 18, 1891, and during his stay there was under the care of Drs. George W. Gay and William P. Bolles, who have kindly permitted me to refer to the notes of the case.

His family history was negative. His personal history, up to the onset of the present trouble, was also negative, except for an attack of *la grippe* the previous winter, which left him debilitated. There was no venereal or tubercular history.

About three months before entrance he began to have severe pains across the lower part of the abdomen, the hips, and in the rectum. His bowels, previously regular, became constipated and the pain was always relieved after a free evacuation. At about this time he suffered from frequent micturition and a slight degree of rectal tenesmus. The symptoms increased in severity, and micturition became difficult at times, sometimes stopping and again starting. There was loss of strength and some loss of flesh. For a short time before entrance he complained chiefly of creeping sensations in the legs and in the heels. He was unable to sit or to lie on his back, on account of soreness across the back of the pelvis. There was no hæmaturia, or passage of blood from the rectum.

At his entrance he presented the following physical appearance: a man of good color, fairly developed and nourished. Heart, lungs and abdomen negative. A rectal examination, under ether, revealed a prostate rather below the usual size, smooth and regular in outline. Upon the right side in the region of the seminal vesicle, was an irregular mass, hard, not movable and about the size of the index finger. The urinary examination showed the following characteristics: pale, acid, 1,021, no albumen.

During his stay in the hospital he had one attack of retention, which was relieved by the catheter. No blood followed this procedure. He left the hospital on April 20th, comparatively comfortable by the use of morphia suppositories.

He re-entered the hospital on May 11th, desiring operative relief. His pain had increased in severity, and was referred to the end of the spine and to the region of the right anterior superior spine. A rectal examination showed a slight increase in size of the growth and that it more closely approached the prostate. On account of the apparent limitation of the disease, an attempt to remove the whole or a part of the growth was determined upon.

The operation was done by Dr. Gay, on May 15, 1891. An incision, two inches in length, beginning just anterior to the anus was made, and a careful dissection made until the growth was exposed. On account of its firm attachment to the surrounding parts, it was impossible to remove more than a small portion of the growth. The bladder was not opened.

The history after the operation was uneventful, except for an attack of epididymitis.

On account of the situation of the growth, its shape, and the entire absence of any apparent enlargement of the prostate, the clinical diagnosis of cancer of the right seminal vesicle was made. The piece of the growth removed at the operation was examined by Dr. Seats, who made the following report: "Piece of dense tissue, whitish, tinged with red, numerous small opaque areas. The microscope showed dense fibrous tissue, containing masses of epithelial cells, some glandular with epithelial lining, some completely filled with epithelial cells. In other places irregular masses of epithelial cells in connective-tissue framework. Diagnosis, probable cancer of the prostate."

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 4, 1893.

From his discharge from the hospital in June, 1891, until his death in September, 1892, he was under my care at his home. There was extreme pain, relieved only partially by morphia. The bowels were obstinately constipated, requiring frequent enemata. Spasmodic twitching of the lower limbs was of daily occurrence, and was quite as troublesome as the pain. The local condition showed a steady increase in the size of the growth, involving especially the prostate, which reached the size of a small orange. The perineal wound which had healed superficially, reopened, due probably to ulceration of the bladder wall, and most of the urine escaped through this channel. Several examinations of the urine showed simply chronic cystitis; and no cancer cells were found, although careful search was made. There was no hæmaturia. The inguinal glands were not enlarged. The patient became extremely emaciated, was confined to his bed for ten months, developed a marked cancerous cachexia, and died of exhaustion on September 11, 1892.

The autopsy was performed by Dr. Wm. H. Prescott, who has kindly furnished me with the notes of it:

. . . "There was a small cavity between the fundus of the bladder and abdominal walls just above the symphysis, with shreddy walls, and filled with puriform liquid having a urinous odor. Walls of cavity formed by connective-tissue, which was very thick. There was no communication between this cavity and the bladder. The pelvis was nearly filled with a mass firmly matted together, in which the rectum and bladder could be made out and a tumor about the size of an orange and very firm. . . . Kidneys very small and firm, capsule adherent; two cysts filled with a clear fluid in cortex; pelvis much dilated. . . . Ureters dilated to the size of little finger. Retroperitoneal glands enlarged. Several nodules in the liver and spleen about the size of a small marble, otherwise normal. Supra-renal capsules slightly enlarged and containing nodules similar to those in liver. . . . Around the back of the bladder and occupying the position of the prostate and vesiculæ seminales was a tumor the size of a large orange."

Professor Councilman kindly examined the specimen, particularly in reference to the primary origin of the growth, and made the following statement:

"The tumor has evidently originated in the prostate, all of which is involved and in which there is only a little normal glandular epithelium to be seen. The cells of the tumor in the prostate are small and have the general character of the epithelium in this part. From the prostate the tumor has extended upwards to the seminal vesicles, portions of which are not involved. In other portions there is a typical growth of the same character as in the prostate. Posterior to the wall of the bladder, between the two lobes of the seminal vesicle and just above their separation, is a distinct abscess cavity, probably in the walls of bladder. The metastatic tumors have the same character as the growth in the prostate. Anatomical diagnosis: carcinoma, primary in the prostate, with extension into the vesiculæ seminales and posterior bladder wall; with secondary cancer of spleen, liver and adrenal glands; abscess in bladder wall, opening into peritoneum; peritonitis; interstitial nephritis; dilatation of ureter."

This case presents several interesting points; the absence of prostatic enlargement in the early stage of the disease; the existence of an apparently independent growth in the vicinity of the seminal vesicle; the variation between the clinical and anatomical diagnoses, the absence of hæmaturia, and the early appearance and persistence of severe pain.

It is probable that the growth originated in a small nodule close to the capsule of the gland, and that it extended to the right seminal vesicle, and later involved the whole prostate.

It is probable that other and severer symptoms referable to the bladder would have supervened as the case progressed, had it not been for the perineal opening and thorough drainage of the bladder. For this reason alone, a cystotomy would seem justified in cases of this kind. The constipation which was persistent and severe could not be explained wholly from the use of opiates, for it existed prior to their use, or from the obstruction of the growth in the rectum. It was probably due to some reflex inhibition of the nerves in that region.

Malignant disease of the prostate is one of the rarer surgical affections.

The testimony of the surgeons of largest experience is unanimous on this point.

Harrison[2] states that "malignant tumors are rare, either as primary growths or secondary deposits or extensions of tumors involving other organs."

Gross:[3] "Carcinomatous formations of the prostate are extremely uncommon. . . . Sarcomatous tumors are still more rare."

Bryant:[4] "Cancer of the prostate occurs but seldom."

Erichson:[5] "The prostate is very rarely attacked by cancer."

Ashhurst:[6] "The affection (cancer) is one of great rarity."

Agnew[7]: "Cancer of the prostate is almost invariably secondary to carcinomatous disease on other parts of the body, and even this is exceedingly rare."

Discarding the older statistics of Tanchou[8] as unreliable, we find that in Billroth's clinic,[9] out of 548 cases of malignant growths, 290 of which occurred in males, only one affecting the prostate was found. In the Heidelberg clinic,[10] in an experience of eight years, only six cases were found, three each of carcinoma and sarcoma.

Secondary disease occurs even more rarely than primary. Fenwick[11] states that only four cases are reported, one each by Mercier, Longstaff, Guyot and Lebert.

Thompson,[12] after eliminating all doubtful cases, collected 23 cases of malignant disease of the prostate.

A careful search of available literature up to date has resulted in the collection of 50 cases, nine of which are sarcomata, making in all 73 cases. Doubtless many more cases have come under the observation of surgeons who have not reported them.

Of the two forms, carcimona is by far the most frequent.

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[2] Internat. Ency. Surg., vol. vi, 1886, p. 389.

[3] Syst. Surg., 6th edition, 1882, p. 795.

[4] Pract. Surg., 3d edition, 1881, p. 611.

[5] Science and Art Surg., 8th edition, 1885, p. 1026.

[6] Prin. and Prac. Surg., 3d edition, 1882, p. 944.

[7] Ibid., 1881, p. 506.

[8] Recherches sur le Traitement Medical des Tumeurs Cancéreuses du Sein, Paris, 1844.

[9] Beiträge zur Statistik der carcinoma, mit besonder Rücksicht auf die dauernde Heilbarkeit durch operativ Behandlung, Nach Brobachtungen an der Wiener chirurg. Klinik des Prof. Dr. Billroth, von Dr. A. Winiwarter.

[10] Stein: op. cit.

[11] Brit. Med. Jour., 1887, i, 619.

[12] Dis. of Prostate, 6th edition, 1886, p. 186.

In regard to the age at which this affection is most frequent, it may be said, in general, that sarcoma in [illegible] very rarely [illegible] a year.

No.	Reporter.	Age.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible] W. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

No.	Reporter.	Age.	Duration.	Condition of prostate.	Condition of other organs.	Treatment.	Reference.	Remarks.
1	Clark, W. B.	51		Large mass, blocking ureters.	Atrophy left kidney, abscess psoas muscle, nodule in liver, abscess in medulla	Cystotomy? Not fully reported.	Path. Trans., xxxvi, 289, 1885.	....
2	Bernard, W.	75	yrs.	Considerable enlargement in left lobe.	Ulceration of bladder, nodule in liver.	Palliative.	Dublin Jour. Med. Sc., Jan., 1884.	Hæmaturia severe, anuria for eleven days.
3	Beach, H. H. A. and Fitz, R. H.	60	2 yrs.	Enormous tumor, cylindrical cell cancer.	Involvement of seminal vesicle, dilated ureter, nodule in liver.	Palliative.	Boston Med. and Sur. Jour., June 21, 1888.	Tumor extended above pubes.
4	Oswald, R. J. W.	23	3½ yrs.	Enlarged.	No autopsy. Growth over rib, back of neck, and on buttock.	Colotomy for relief of obstruction.	....	Relief after operation, death in 3 ms., cause supposed to be a series of kicks from a horse in perineum.
5	Favell and Jackson.	69	6-7 ms.	Enlarged, scirrhus.	No autopsy.	Palliative.	Lancet, London, 1885, i, 843.	....
6	Carver.	66	5 yrs.	Medullary cancer.	Glands enlarged, pelvic, iliac mesenteric.	Palliative.	Lancet, London, 1886, 788.	Constipation a prominent symptom.
7	Harrison, R.	64	2 yrs.	Enlarged.	No autopsy.	Cystotomy, mass size of filbert, removal.	Lancet, London, 1884, ii, 483.	Death after 14 ms., incontinence of urine after operation.
8	Stonham, C.	57	1¼ yrs.	Growth backward.	Bulb of urethra nodule in liver.	Prostatectomy by C. Heath, partial removal.	Tr. Path. Soc., Lond., xxxix, 194, 1887-8.	Death from anuria in 30 days.
9	Hill, B.	64	1 yr.	Right lobe enlarged, scirrhus.	....	....	Ibid, 1888-9, xi, 181.	Frequent hæmaturia, incontinence, anuria for 10 days, death.
10	Spanton.	57	2 yrs.	Sarcoma, size fœtal head.	....	Operation, mass size of fist removed.	Lancet, 1882, 1032.	Death.
11	Fenwick, E. H.	56		Scirrhus, right lobe enlarged.	....	....	....	....
12	Fenwick, E. H.	53	6 wks.	Right lobe encephaloid, size orange.	....	Operation refused.	British Med. and Sur. Jour., 1887, 873	Of very rapid growth.
13	Fenwick, E. H.	62	?	Large, irregular mass.	....	Colotomy.	Ibid.	Considerable relief, alive at report.
14	Fenwick, E. H.	74	....	Carcinoma	....	....	Ibid.	Painful defecation chief symptom.
15	Maylard, A. E.	62	1½ yrs.	Encephaloid, cyst-like outgrowth in bladder.	Lymphatic glands and seminal vesicle involved.	....	Glasgow Med. Jour., 1887, 374.	....
16	Belfield, W. T.	48	3 ms.	Slight enlargement.	....	Supra-pubic cystotomy, removal of villous growths in bladder.	Chicago Med. Jour., 1887, iv, 435.	Complete relief of symptoms for 8 weeks, recurrence, death in 4 mos.
17	Spanton.	5	13 wks.	Size man's fist, sarcoma.	Destruction of prostatic urethra.	Supra-pubic aspiration.	Tr. Path. Soc., Lond., 1890-1, xlii, 218.	....
18	Morris, H.	72	....	Size orange.	Extension to bladder.	Supra pubic.	Med. Press and Circ., Lond., 1890, N. S., xlix, 529.	Considerable relief, alive at time of report.
19	Eaton, J. K.	61	....	Extended above pubis, size cricket-ball.	Extension to neck of bladder.	Palliative.	Dublin Jour. Med. Sc., 1881, 3 s, lxxi, 553.	....
20	Bubb.	69	1 yr.	Scirrhus.	Abscess left kidney, cystic r. kidney, abscess supra-renal capsule, nodule in bladder.	Palliative.	Brit. Med. Jour., Lon., 1881, 849.	Incontinence of urine was the chief symptom.
21	Billroth.	30	5 yrs.	Size egg.	....	....	Reported by Stein, Arch. f. Klin. Chir., Bd., 39, 545.	....
22	Billroth.	56	1 yr.	Hard enlargement.	Bladder infected.	Operation, total extirpation, with sharp spoon	Ibid.	Death in 4 days.
23	Demarquay	52	....		Rectum and fundus bladder.	Operation, total extirpation.	Ibid.	Death in 7 days.
24	Barth	9 ms.	4 ms.	Sarcoma	Tumor pressed on rectum and produced obstruction.	Supra-pubic operation.	Ibid., 1891, xlii, 758.	Death
25	Barth.	17	5½ ms	Sarcoma.	....	Operation, kind not stated.	Ibid.	Death in six weeks.
26	Barth.	27	5 ms.	Sarcoma.	....	Palliative.	Ibid.	Death in a few weeks.
27	Lisrink.	64	1½ yrs.	Cancerous.	....	Operation. Partial removal of growth.	Ibid., xxxix, 545.	Passage of large amt. of blood by stool the chief symptom before operation.
28	Kuster.	53	....	Cancerous.	Bladder and glands involved.	Operation. Total extirpation of prostate and bladder walls.	Ibid., xlii, 385.	....
29	Stein.	79	3 yrs.	Cancer.	Rectum perforated.	....	Ibid., 1889, xxxix, 544.	....
30	Stein.	27	9 wks.	Sarcoma.	....	Supra-pubic, partial removal.	Ibid., 545.	Death in a few days.
31	Stein.	42	5 yrs.	Sarcoma?	....	Median section, partial removal by sharp spoon.	Ibid., 545.	Relief for four weeks. Death.
32	Stein.	47	....	Sarcoma?	Left testis involved.	....	Ibid., 547.	Death in nine months.
33	Stein.	64	9 ms.	....	....	Total extirpation.	Ibid., 549.	Death in twelve days.
34	Wesseler, F. W.	50	1 yr.	Scirrhus, size of hen's egg.		....	St. Louis Med. and Sur. Jour., 1882, xlii, 178.	....
35	Gray, G. H.	36	2 yrs.	Sarcoma?		....	Ibid., 1877, n. s., xiv.	Reported as **cancer**, but more closely resembles sarcoma.
36	Fenwick, E. H.	59	1 yr.	Left lobe.	Extends to left seminal vesicle.	Autopsy. Specimen.	Tr. Path. Soc., Lond., 1886-7, 199.	....
37	Hughes.	35	1 yr.	Weighed 5 pounds, 2 ounces. Sarcoma. Round cell.	Extends to posterior bladder walls. Nodule in liver.	Perineal section.	Med. and Sur. Reporter, Phila., xlvii, 688.	Death from uræmia.
38	Parker.	...	...	Cancer.	....	....	Brit. Med. Jour., 1884, i, 48.	No clinical history. In response to a request growths sent to F. T. Paul for the purpose of classification.
39	Parker.	..	....	....		....	Ibid.	Ibid.
40	Parker.	..	...	....	....	....	Ibid.	Ibid.
41	Craigmiler.	....	....	....	....	....	Ibid.	Ibid.
42	Paul, F. T.	...	....	....	....	....	Ibid.	Ibid
43	Williams.			....	....	....	Ibid.	Ibid.
44	Turner, F. C.	....	....	....	....	....	Ibid.	Ibid.
45	Paul	....	....	Sarcoma.	....	....	Ibid.	Ibid.
46	Hartshorn and Tyson.	64	4 yrs.	Cancer, size of orange.	Bladder ulcerated.	....	Amer. Jour. Med. Sci., Phila., n. s., lviii, 440.	Severe hæmorrhages from bladder. Death from this cause.
47	Casper.	54	3 ms.	Large tumor, extending to coccyx.			Le Bull. Méd., Paris, 1888, ii, 560.	....
48	Casper.	69	....		....	....	Ibid.	Bladder pushed up to umbilicus.
49	Casper.	34	...	....	....	....		....
50	Whitney.	58	1½ yrs.	Size of orange.	As quoted.	....	Ibid.	Urinary incontinence.

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[13] Etude sur le cancer de la prostate, N. Dict. de Med. et Chir. 78 p., 4, No. 50. Berger, P. Cancer des vesicules seminales et de la prostate

In regard to the age at which this affection is most frequent, it may be said, in general, that sarcoma in this region is a disease of infancy and early boyhood, and that carcinoma is one of later adult years, usually occurring in men over fifty. Carcinoma does, however, frequently occur in children, and is of very rapid growth. Thompson states that only three cases of carcinoma have been observed between the ages of eight and forty. That this is not the experience of other good observers is shown by the statistics of Jolly as quoted by Jullien.[13] He tabulates the cases as follows:

[illegible] years	[illegible] cases
10 to 20 "	0 "
30 to 40 "	3 "
40 to 50 "	3 "
[illegible]	1 [illegible]
60 to 70 "	10 "
[illegible]	[illegible]

Wyss[14] has collected 24 cases, with the following results:

[illegible] years	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

My own cases investigated with regard to the question give a somewhat similar result:

	Carcinoma.	Sarcoma.
0 to 10 years	0 cases	2 cases
10 to 20 "	0 "	1 "
[illegible] "	1 "	[illegible] "
30 to 50 "	3 "	3 "
[illegible] "	14 "	1 "
[illegible]	11 "	0 "
70 to 80 "	4 "	0 "

The symptoms of malignant disease are usually extremely obscure in the early stage. Pain is usually an early and constant symptom, and occurring in connection with any enlargement of the organ should give rise to a suspicion of the existence of this affection. As the growth extends, symptoms referable to the bladder and rectum are noticed; frequent and often painful micturition, with occasional attacks of hæmaturia, especially after instrumental manipulation. Occasionally incontinence is present. Constipation and rectal tenesmus are noticed, especially when the direction of the growth is toward the rectum.

Reflex disturbances of the sacral plexus are not infrequent, shooting pains down the thigh, vaso-motor changes in circulation in the extremities, cold feet and legs, and spasmodic muscular contractions. The urinary examination is not of much diagnostic value.

The rectal examination usually shows a tumor of varying size, firm in consistency, often nodular and irregular in outline, in the region of the prostate.

Tenderness is not usually present. The diagnosis between this condition and hypertrophy of the prostate is not easy and can only be made after several observations of the patient. Severe pain, emaciation, and a steady growth of the tumor would aid in distinguishing between these conditions. In younger patients tuberculosis, chronic inflammation and certain forms of rectal growth, may frequently simulate this condition.

The duration of this affection varies with the age: in children it is exceedingly short, averaging from three to seven months, while in adults it is from one to two years, rarely four or five. In sarcoma, the course is rapid at all ages, averaging seven months, very rarely lasting a year.

The treatment of these growths can often be merely palliative, directed to the relief of pain, and to the obstruction caused by pressure on the bladder and rectum. The bladder should be regularly emptied by catheter in cases of complete or partial retention; the rectum should be unloaded by enemata, and the stools kept soft by laxatives by the mouth.

Several different operative measures have been of late recommended for the complete or partial removal of these growths. Total extirpation has been done three times; once by Billroth, who was the first to attempt it, and twice by Stein. In two cases, death occurred in twenty-four hours; in one, life was prolonged nine months, with partial relief. Perineal cystotomy and partial removal by curetting has been done several times. Colotomy has been recommended by Fenwick, who has performed it several times as a method of relief for the obstruction to the action of the bowels. Other methods which have been done with varying success, are suprapubic exploratory incision, and combined with a perineal incision. This method has been found to give the best results as regards the removal of the largest amounts of the growths.

Any operation to be of value must be early and radical; but when it is remembered that in eighty or ninety per cent. of cases confirmed by an autopsy other important organs or glands were involved, and that the diagnosis of this affection in its early stage is a matter of the greatest difficulty, the ultimate success of any operation is a matter of grave doubt.

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LACERATIONS OF THE VAGINA BY COITUS.[1]

BY [illegible] M. [illegible], M.D., BOSTON.

Most text-books have little or nothing to say on this subject, and the recently published "American System of Gynecology" makes no mention of it. Holmes in his "System of Surgery," Vol. II, page 749, says that the vagina has been torn, with the hymen, in the attempts at coitus for the first time, sometimes with alarming hæmorrhage.

In the "Real-Encyclopädie der Gesammten Heilkunde," No. 14, page 570, the author says: "Whether the vagina can be torn by coitus appears questionable, although some old observations exist according to which, through roughly practised coitus, laceration of the vagina and death from hæmorrhage have occurred. The rupture is either limited to the vagina, or it involves the cervix and vaginal vaults. The lower part of the vagina may be the seat of rupture, with rupture of the perinæum. In the vaginal vaults occurs not seldom transverse separation of the vagina from the uterus. In rare cases the vagina may be entirely torn from the uterus."

Barnes, in his "Diseases of Women," page 870, describes a specimen in the museum of St. George's Hospital of laceration of the vagina from coitus in an old woman: "There is a rent passing along the upper two inches of the vagina, dividing the mucous membrane and the adjoining fibres of the muscular coat. The rent deepens as it ascends, and on a level with the os uteri has broken through into the peritoneal cavity. The hole in the peritoneum is not quite large enough to admit the little finger."

It may be said, then, that laceration of the vagina does occur occasionally from undue violence in the act of coitus, and gives rise to symptoms of sufficient gravity to require medical advice. Minor lacerations of the hymen, involving to some slight extent perhaps the vaginal wall, but insufficient to cause alarming hæmorrhage, are probably not infrequent. Cases of the graver kind, requiring immediate treatment for the arrest of hæmorrhage or later plastic repair, are occasionally reported in periodical literature; but I have made no attempt to collate these cases. I recall one case reported within a year by Mann, of Buffalo, in which the patient entered the hospital with a recto-vaginal fistula which was attributable to violent coitus.

My own experience with this lesion is limited to two cases, which are briefly as follows:

Case I. Several years ago I was called to one of the leading Boston hotels to see in consultation a young woman on her wedding journey. The physician first called to the case, in the night preceding my visit, had found the patient with a profuse vaginal hæmorrhage, which proceeded from a rent in the wall of that passage. He employed pressure by means of a tampon, and at the time of my visit with him some hours later the bleeding had practically ceased. On examination I found a longitudinal tear extending from just within the introitus about two inches along the left-latero-posterior vaginal wall. The rent was of sufficient depth to receive the index finger, and on manipulation still bled moderately. As the couple wished to resume their journey as soon as possible, it was thought best to continue the simple tampon pressure; but were the patient to have remained for a few days in town, it would have been more satisfactory treatment to have closed the rent with sutures. There was a definite history in this case of the laceration having occurred the night previous to my visit, in the act of coitus.

Case II. In September, 1892, a young married woman consulted me at the Boston City Hospital, on account of hæmorrhage from the vagina which had lasted for four or five weeks. She had consulted two physicians, both of whom had treated the case as one of metrorrhagia without success. The last physician had inserted a soft-rubber doughnut pessary for the relief of a supposed uterine displacement. On the removal of this pessary a foul discharge of retained and decomposed blood followed. After thorough disinfection of the vagina the source of the hæmorrhage was discovered. Starting from the cervico-vaginal junction on either side was a rent extending laterally for three-quarters of an inch: the sound entered these rents about a quarter of an inch, and there was a continuous oozing of blood from them. The cervix had apparently been pushed forcibly upward and backward, and the transverse lacerations of the vaginal vaults thus occasioned. The parts were cleansed with a two per cent. solution of creolin, iodoform powder was blown into the rents, and the vagina was packed with cotton tampons wrung out of a ten per cent. mixture of iodoform and glycerine. Three days later all bleeding was found to have ceased, and in a fortnight the parts had entirely healed.

I have recently seen in a private patient another case of injury by coitus, in all probability, although there is no history to that effect, and the existence of the lesion is unknown to the patient. In this case the hymen was rather thick, and of the so-called annular type; that is, there was a small central aperture. This hymen I found attached to the right side of the introitus vaginæ only, it having been entirely stripped away from the left side; it had retracted somewhat, and was attached, as by a hinge, on the right side. As the woman had never borne children, and in the absence of any history of known injury or operation, it is probable that at the first complete coitus, the thick annular hymen, instead of incurring the usual radial lacerations, was entirely torn away from its attachment on one side.

The treatment of lacerations of the vagina consists primarily in the arrest of hæmorrhage, which is sometimes profuse. In small tears, with only moderate venous oozing, pressure with firmly applied tampons is sufficient to arrest the bleeding. But in large rents involving arteries or large venous plexuses, it is best to expose the parts with speculum and retractors, and close the laceration with sutures; by this method the hæmorrhage is more promptly controlled, and the integrity of the parts restored. Extensive lacerations followed by sloughing and fistulæ require secondary plastic operation.

Cholera in France. — It is reported that two-hundred cases of cholera, with seventy deaths, occurred during the last half of March at Lorient, near Brest. The health of the town has been bad for a long time.

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[1] Read before the Obstetrical Society of Boston, February 11, 1893.

SOME OBSERVATIONS BEARING ON THE TREATMENT OF NASAL AND MIDDLE-EAR AFFECTIONS.

BY ALBERT H. TUTTLE, M.D., CAMBRIDGE, MASS.

It is possible to voluntarily open the Eustachian tube without the act of swallowing. This usually occurs in the act of gaping and yawning. When the tube is open a trembling sensation is produced, which is probably due to the vibrations of the drum instead of the contraction of muscles. This sensation is mixed, consisting partly of sound and pressure, and indicates a patent Eustachian tube with entrance of air into the tympanum. When the cheeks are inflated in the act of blowing, it is possible to voluntarily open the Eustachian tube and produce this sensation. It can also be produced when the mouth and nostrils are both open, but apparently there is an exaggerated inspiration or expiration at the same time. The simple act of blowing with the mouth and nostrils closed, does not open the tube, or produce the sensation in the ear.

By attempting forced expiration or inspiration with the mouth and nostrils closed the middle-ear can be inflated or aspirated, the membrana tympani expressed or retracted, and the reflex light made to appear or disappear. This is easily produced voluntarily by the patient while the physician is inspecting the drum by the usual means.

When there is a patent Eustachian tube and a perforation in the drum-head, air may be blown through the middle-ear and external meatus by a forced expiration if the mouth is kept shut and the nostrils closed with the fingers. This is apparently facilitated by the simultaneous act of swallowing. If there are any fluid secretions in the tympanum, a series of rapidly forming and bursting bubbles will be formed, which are visible through a speculum and distinctly audible. If under the above circumstances an oily substance, like benzoinol, is inserted into the meatus, it will be blown out in great bubbles so as to spatter on the cheek of the patient. (A simple test for perforation of the meatus.) If oil is inserted into the meatus of an ear with a perforated drum and patent Eustachian tube, aspiration of the tympanum by a forced inspiration while the mouth and nostrils are closed will not suck the oil rapidly into the throat, but it will be detected in minute quantities by the taste.

If a spray of oil is directed into the mouth or nostrils, during a forced expiration, and the mouth and nostrils maintained closed at the same time, the spray will pass into the middle-ear; and if there is a perforation of the drum-head, it may be seen emerging from the opening; this is facilitated by the simultaneous act of swallowing. The amount of vapor that passes through the ear is slight, and not what might be expected by the freedom with which air passes through the same route.

By holding the head on one side, inflammatory products gravitate over the perforation, and their removal is facilitated by the act of blowing through the Eustachian tube, at the volition of the patient.

A Joke from "Punch." — *Mrs. Sharpley (to the doctor, who has looked in, having heard that her "good man" is ailing):* "No, I thank ye, sir. You see I've heered of you, sir, as you've been 'practising' here for the last three years, and so I'd rather you went 'practising' elsewhere, as I don't want no 'speriments on my old man."

REMARKS ON TWO CASES OF EXCISION OF THE STAPES.[1]

BY FREDERICK L. JACK, M.D., [illegible]

The two following cases illustrate some of the advantages of a recent surgical procedure, removal of the stapes. This operation is a new departure, a step forward, I believe. It has been now proved, beyond question, that an open fenestra ovalis, with a normal sound-perceiving apparatus in the inner ear, will furnish good hearing for the voice in some cases. Yet, in one of the most recent works on the ear, the author states that "expulsion of the stapes must invariably produce total deafness," but he immediately follows with a description of a case, the only exception to the rule of which he has ever heard.

The operation is not a panacea, and has never been claimed to be, a point which I am afraid some observers lose sight of. In very few cases has there been any appreciable change for high tones, the improvement is almost entirely for the voice. There are difficulties, both in the application of the operation and in its execution, and new features are demonstrated in nearly every case operated upon.

The first essential for success, as emphasized in a recent paper,[2] is a differential diagnosis. It is not reasonable to look for successful results in cases of disease of the labyrinth or atrophy of the auditory nerve. The condition of this part of the ear, however, cannot always be determined beforehand. As to the obstacles in the operation, in addition to a high position of the oval niche there are pathological changes, such as bony ankylosis of the foot-plate and atrophy of the crura and head which interfere with the removal of the bone.

Success is greatest in those cases where the stapes has become fixed within the oval window by plastic inflammation, thereby causing a mechanical obstruction to sound-waves and possibly making undue pressure on the endolymph.

There are many interesting details in connection with the whole subject which cannot be spoken of now.

The first patient was operated on eight months ago. The ear was discharging at the time, and had refused to heal in spite of continuous treatment. The stapes was removed on account of its carious condition, without thoughts of improving the hearing. The ear ceased discharging one week after the operation, and the patient, as you see, can now hear very well.

The second patient was operated on eight months ago; first the left, and two months afterward, the right ear. The perforation in the drum-membrane rapidly healed, as in all cases almost without exception. I bring this case before you to show the remarkable hearing of this patient without the stapes in either ear. I think you will agree with me that I am warranted in my confidence in this operation for some cases.

International Congress of Hygiene and Demography. — The Emperor of Austria (King of Hungary) has consented to be Protector of the Congress of Hygiene and Demography, to be held at Budapest in the first half of September, 1894.

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[1] Shown before the Surgical Section of the Suffolk District Medical Society, February 1, 1893.

[2] [illegible] removal of the stapes, Boston Medical and Surgical Journal, January 5, 1893.

Clinical Department.

A CASE OF CÆSARIAN SECTION.[1]

BY A. WORCESTER, M.D., WALTHAM, MASS.

HOWEVER valuable may be the study of separate obstetric cases, still more valuable is the study of a series of the labors and deliveries of the same patient. Besides the information to be gained by most careful observation and measurements of any given patient in labor, there is, in her previous obstetric history, a large element that most properly may affect the accoucheur's choice of procedure. But it is not easy to relate this history. It is not enough to have at hand the details usually given, the duration of the different stages, the method of delivery, the weight of the child, etc., what is of even more value at such a time is a vivid remembrance of the patient's behavior, of her pluck and of her endurance, both mental and physical.

The instinct of womankind to employ the same accoucheur in their successive labors, has most substantial foundation in the fact of its advantage as in the properly cherished domain of the feelings.

In the case I am now to report, I had the advantage of having delivered the patient in her three previous labors. Here is the report of the first two of these three, which I read to this Society in April, 1891:[2]

On February, 1, 1889, I was called in consultation to deliver Mrs. C., a stout woman, twenty-six years old. This was her third pregnancy. The first resulted in a craniotomy; the second in a still-birth by podalic version. She had been in the second stage of labor for many hours, and forceps had been several times tried. I found the head presenting in right posterior position, not engaged. After rotating the occiput to the front, I applied forceps and the Reynolds traction-rods. The extraction was difficult. The boy baby weighed eight pounds. There was no heart-beat and all efforts to resuscitate failed. The mother made a good recovery, and the next year applied to me to take charge of her in her fourth confinement.

I made these measurements: Distance between the anterior superior spinous processes, 7 in.; between the iliac crests, 9½ in.; between the tuberosities of the ischiums, 3½ in.; the external conjugate, 7 in.; the diagonal conjugate, 4½ in.

She was taken in labor August 8, 1890, being her fourth pregnancy. After twelve hours, the os being nearly dilated and the pains amounting to nothing, I completed the dilatation, rotated the occiput from the right posterior to front position, applied forceps and traction-rods. On vigorous pulling I broke the left frontal bone, just above the zygomatic arch. I then performed craniotomy, and with difficulty delivered a female child which, minus brains and blood, weighed eight pounds. There was a severe post-partum hæmorrhage, finally controlled by hot intrauterine douches of one per cent. acetic acid. The patient made a good recovery.

When reporting these labors I stated that the patient was again pregnant and my determination never again to attempt her delivery at term, *per vias naturales*. In the discussion of the case my plan of inducing labor in the eighth month, met with approval. The patient herself was delighted with the plan. She had given up every ray of hope of ever having a living child born, and had adopted another's child. She desired only that her delivery might be effected with the least possible danger to herself. And she could not be persuaded to provide a stitch of baby clothing. She was unwilling, as she said, to aggravate her inevitable disappointment.

On June 17, 1891, her pregnancy having reached the thirty-fourth week, I induced labor by inserting a catheter into the uterus. Labor began after twenty hours. For five hours her pains were quite regular, but then became worthless. The os uteri was half dilated. The head presented. Having determined the position to be O. S. P., I decided to complete the dilatation manually and to deliver her by performing podalic version. This was done without especial difficulty; but owing to the hardships of his birth the boy baby was barely resuscitated, and died the next day. The baby was well developed and weighed five and one-half pounds.

I then plainly told the parents that never again would I attempt her delivery except by the Cæsarian section. Owing to this threat, they carefully avoided my hearing of her following pregnancy, her sixth, until it was more than eight months advanced. The woman was then in a most miserable condition. She was very anæmic, her feet and hands swollen. She had been coughing continuously for many weeks. Fortunately her urine was normal. Her pulse was small and always over 100. Her husband and sister were most anxious to have the former procedure repeated, thinking to save her alone. And as they would not consent to my strong urging that she should be sent to the hospital for Cæsarian section, I retired from the case.

Some weeks afterwards, at daybreak of June 8, 1892, I was summoned by Drs. Webber and McCollester, of Waltham, to help them in delivering her. She had then been in labor thirty hours. The liquor amnii had been escaping during all of this time. The os uteri was half dilated. The head presented in first position. All hands were then willing to have her moved to the hospital, where hurried preparations were made for operating. She was put under ether at 8 A. M., by Dr. Greenwood. I was further assisted by Drs. Cutler, McCormick and Wood. Fortunately, I had recently read Dr. Kelley's admirable article upon what to do and what not to do in such cases.[3]

The thin belly wall was laid open for eight inches, half above and half below the umbilicus. The uterus was then incised six inches. The hæmorrhage was terrific, the blood spurting from several large vessels on each side. The placenta was in the way, and was not at once recognized, owing to the impossibility of sponging the wound clear even for a glance into its depths. On pushing past it, detaching one side of it, the arms were found presenting, but the feet were easily found and the nine and one-half pound boy delivered. He soon began crying. The uterus was immediately pulled outside the abdomen and the hæmorrhage controlled by my assistant's grasp of the neck. The placenta was easily removed. The wound in the uterus was closed by about twenty deep silk sutures, and then this deep row was partially buried by a row of sero-serous fine silk sutures. This was a most difficult procedure, owing to the vigorous contraction of the uterus. And I would never again try, nor would

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[1] Read before the Obstetrical Society of Boston, February 11, 1893.

[2] Reported in the Boston Medical and Surgical Journal, vol. cxxv, [illegible].

[3] American Journal of Obstetrics, vol. xxiv, p. 532.

I advise any one to try, this second row of sutures. I persisted in it only because so apprehensive that the interior of the uterus had been infected by the previous treatment of her labor, and in the hope thereby to seal the uterine wound more surely.

No shock followed the operation. The patient recovered well from the anæsthesia. She was somewhat nauseated through the day; she suffered pain enough to require one-sixth of a grain of morphia hypodermically: and she had to be catheterized only once. Owing largely, no doubt, to the fact that there had been no time for the proper preparation of her alimentary canal for the operation, she suffered almost from the first from great distension of the bowel. The evening after the operation she was given, by mouth, one drachm of sulphate of magnesia, four times; by rectum, two ounces of sulphate of magnesia, one ounce of glycerine, half an ounce of spirits of turpentine. Several liquid dejections followed. There was considerable gulping that night, and the prospect was far from favorable. But she rallied, and was able the next day to retain champagne, and afterwards meat-juice and milk with lime-water. Her temperature ranged from 100° to 101.6° for the following week, and her pulse kept above 120 for most of that time. But she was able to nurse her baby after the second day, and, in spite of her fever and wretched anæmia, the baby throve finely.

There was never much pain in the abdominal wound, which healed quickly, and, after the distension disappeared, seemed to have lost half its length. Fortunately her appetite soon became ravenous; she did not mind the excessive heat of the season; and, owing to her happy, contented disposition, and her pathetic gratitude for her living child, she made light of many discomforts which in other patients would have been discomforts as well for the attendants.

She was up and about at the end of a fortnight, and on the seventeenth day after the operation she was discharged from the hospital.

After a few weeks she went to her parents' home in New Hampshire, where she regained her old-time strength, soon being able to walk several miles. She came back to her home well and strong and with a splendid baby, still breast-fed.

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Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY J. T. BOWEN, M.D., BOSTON.

(Concluded from No. 14, p. 339.)

PAGET'S DISEASE OF THE PERINEUM AND SCROTUM.

At the same meeting of the society MM. Darier and Couillaud reported a case of Paget's disease affecting the perineum and scrotum in a man of seventy-two years, which had existed for fifteen years. The speakers observed that this was in reality the second reported case of Paget's disease in this situation, the first, that of Radcliffe Crocker, having been diagnosticated by Wickham from the histological examination.

The patient had been for some time under treatment in the hospital at Épernay, but as the lesion presented peculiar appearances and proved intractable, a piece was excised for examination and sent to Darier, who recognized its true nature. The patient was then sent to the St. Louis Hospital in the service of M. Fournier, who recognized the affection, without knowledge of the histological examination, as a case of Paget's disease The patient was in a marked state of cachexia, with pulmonary and cardiac symptoms, and the ulcer was the cause of much pain. It occupied the whole perineal and anal region, extending to the buttocks and the scrotum. The borders were sharply defined and crenated; the lesion was covered with fluid exudation at the centre, which differed greatly in appearance from the peripheral zone. The centre was dotted with irregular, whitish islands of macerated or newly-formed epidermis, while the peripheral zone was in places elevated and indurated. During a treatment of two and one-half months, the lesion was scarcely if at all improved. No trace of cancerous appearances had as yet been observed.

Histological Examination. — A piece excised from the edges of the lesion, hardened, cut, and stained in various ways showed the presence in the epidermis of a large number of the round and oval bodies, previously described by Darier as parasites of the order sporozoa. They were found only in the epidermis, often in the first row of cylindrical cells, but there were many others scattered throughout the epidermis. They were usually larger than an epidermic cell, some of them three or four times as large, and contained a large nucleus deeply stained. Some contained as many as four or five nuclei. There *seemed* to be a highly refractive unstained membrane surrounding some of them. It was not possible to tell from the sections whether or not these bodies were enclosed in epidermic cells. No transitional forms between the epidermic cells and these bodies could be detected. Brown pigment was observed in some of these cells as well as in the ordinary epidermic cells; but Darier concludes that it arises from small hæmorrhages. In the region of the horny layer these bodies have diminished in volume, their nucleus has disappeared, and they here present a close analogy with molluscum corpuscles and with the "grains" of psorospermose folliculaire [keratosis follicularis. — Rep.]. The pieces hardened in Flemming's solution reveal karyokinetic figures in the epithelial cells, but never in the bodies in question.

Darier concludes that the presence of these peculiar cells is characteristic, and renders the diagnosis of Paget's disease easy. As to their nature he speaks with more reserve than formerly. He admits that all attempts to obtain an elective staining have failed, and that no forms like those seen in the developmental stages of the known coccidiæ, have been observed.

He regards it, however as incontestable, that Paget's disease has clinical and histological characters sufficiently precise to render the diagnosis an easy matter, even when it appears on other parts than the nipple, its seat of predilection.

[It will be generally admitted that M. Darier has rendered a great service by calling attention to the peculiar bodies found in Paget's disease and in keratosis follicularis (psorospermose folliculaire végétante). It was in great measure owing to his observations and studies of these two diseases, and to his announcement that similar bodies were often present in cancer, that the scientific medical world was led to investigate the psorosperm theory of the origin of cancer. The result has been the publication of a large number of papers and essays, and the literature upon this subject alone has attained most respectable dimensions. Unfortunately, no agreement has as yet been reached, and the matter is still *sub judice.* With regard to the constancy of the presence of these bodies in keratosis follicularis and in Paget's disease, there can be now no question, as they have been found in all the cases reported since M. Darier's first communication. No new evidence pointing to their parasitic character has been advanced, however; and a large number of the best observers have ranged themselves strongly in opposition. The subject was discussed at the Second International Dermatological Congress in Vienna last summer, when almost all the speakers declared their scepticism with regard to the parasitic nature of these bodies. Their detection in a doubtful case of Paget's disease, is surely of diagnostic value; but inasmuch as these or similar bodies are found in keratosis follicularis, in some forms of cancer, in pemphigus vegetans (Ehrmann) and occasionally, as the reporter has found, in other conditions of hyperkeratosis, we cannot regard their presence as pathognomonic of Paget's disease. — Rep.]

SUBCUTANEOUS INJECTION OF THIOSINAMIN.

At the Second International Dermatological Congress,[4] H. von Hebra described the result of his experimentation with thiosinamin, especially in the treatment of lupus.

Thiosinamin is prepared by heating two parts of allyl-mustard oil with one part absolute alcohol and seven parts aqua ammoniæ, at a temperature of 40°. A fifteen per cent. alcoholic solution of this drug was used for hypodermic injection, the back being chosen as the site. The result is a local reaction without constitutional disturbance. In the case of lupus, the diseased parts begin to appear red and swollen about two hours after the injection, sometimes later. The swelling may be so acute that the epidermis is broken through and superficial fissures are formed. This reaction continues from four to six hours. No fever nor constitutional disturbances were noted. A desquamation of the lupus patches occurs after the reaction has passed off.

As to the therapeutic effect, a change in the lupus is seen after a few injections. If it were an elevated lupus tumidus, it is found to be very much less prominent, the protuberances are smaller and the whole lesion is flatter. In an ulcerated lupus the ulcers are quickly cleaned off and begin to heal.

The effects of thiosinamin were also important in the case of scar tissue, both that following an ulcerated lupus, and that caused by burns, etc. Where the contractions of the cicatricial tissue have given rise to stiff joints and other deformities, a complete softening may be produced by thiosinamin.

Chronic glandular tumors are also favorably affected. Often they are perceptibly diminished after one injection; this effect is seen in tuberculous, but not in syphilitic glandular swellings. An increased diuresis is observed, which is followed, however, by no serious symptoms on the part of the kidneys; and after continued use, this effect is not produced. There is a well-defined absorbent action, in which the lymphatic system seems to bear a prominent part. This may also have its disadvantages, as Hebra has noticed that many patients with tuberculosis of the lungs, whose fever has disappeared, begin to suffer a rise of temperature again after several injections. In one case very severe night-sweats were essentially lessened by the injections. The procedure has a very marked effect on the general condition, stimulating the appetite and increasing the weight. No unpleasant effects were observed, and there were no abscesses at the site of the injections. Experiments upon animals showed that large doses produced no effect upon the heart.

Hebra's experience has been limited thus far to cases of lupus, and trachoma, and caries and necrosis of bones; but he thinks that many other inflammatory processess will be found to exhibit the local reaction. He lays great stress upon this eclectic action upon diseased tissue, as it offers great similarity to the action of tuberculin, *without, however, limiting itself to tuberculous tissues.*

BROMIDE ERUPTION IN INFANTS.

The following three cases of bromide eruption in infants are reported by T. Calcott Fox in the *British Journal of Dermatology* for September, 1892. They present no features that have not been described before: but as just such cases are occasionally seen by dermatologists, they are cited on account of the importance of their recognition by the general practitioner.

The first case is that of an *eruption in an infant attributed to vaccination, but due to potassium bromide ingested with the mother's milk.*

An infant, six months old, had been vaccinated in five places about six weeks previous to the first visit. The vaccination was successful; but on the ninth day, according to the mother's statement, a general eruption of "watery or mattery" spots began to appear. When seen, the cheeks, arms and legs were thickly covered by an eruption, which on the face consisted of a few miliary pustules on a solid base, and many patches of confluent pustules, seated on an infiltrated raised base, and often crusted. A similar condition existed on other parts, with the exception of the legs, where the eruption was more confluent and elevated. In some of the lesions a papillary hypertrophy, like that of condylomata was seen, and several areas were sharply raised so as to form tumors, much like those of mycosis fungoides. On the left buttock was a large ulcer, and near it a solid subcutaneous mass. There was no fever nor marked general disturbance, but the baby was pale and fretful. The eruption immediately suggested that caused by bromide of potash; but the mother declared that the baby had had no medicine. It was found, however, that the mother, who was nursing the child, had been taking twenty-five grains of bromide of potash for a long time. The eruption rapidly disappeared after the medicine was stopped. The parents and friends had become much excited under the belief that the child had been poisoned by vaccination.

The second case is one of *conglomerate patches of potassium bromide eruption margined by pustules.*

A male infant of nine months had been well until five weeks previously, when it had had diphtheria. Three weeks previously the eruption had begun upon the face, and then affected the lower extremities. The child was suffering, on entrance, from a diphtheritic paralysis of the soft palate, and an eruption limited on the face to the cheeks and chin, and on the extremities mostly to the backs and inner aspects. The spots were red papules at the outset, which became vesicular, and then grouped, forming patches the size of finger-nails, with infiltrated, raised base, on which numerous pustular points were to be seen. The lesions finally became covered with crusts. The borders of the crusted patches were encircled with a ring of small pustules. It was learned that five weeks previously the baby had had a convulsion, for which small doses of bromide of potash were given. The eruption began about a fortnight after the drug was stopped.

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[4] Ref. Viertel. f. Derm. u. Syph., 1892, 6 Hft.

The third case is one of *tuberose eruption.*

A child, aged ten months, had been under treatment for "fits" for six months. Two weeks previous to visit, a pustular eruption had begun. When seen, it was found that "the smallest lesions were varicelliform pustules, which increased peripherally to the size of a cherry, and then resembled dome-shaped pemphigus bullæ, but the contents were thick and cheesy. It was found, however, when these lesions ruptured, that they were solid papillomatous growths. Some of those upon the legs were the size of a walnut, and represented fungous, tumor-like masses, some of which might be called anthracoid. The lesions were scattered over the lower extremities, trunk, arms and head. There was a typical varicelliform pustule on the side of the nose. It was found that half an ounce of bromide of potash had been taken in eleven days. A few days after the medicine was omitted the eruption began to disappear.

MULTIPLE MYOMA OF THE SKIN.

This rare affection was first described by Besnier. It resembles several other affections of the skin so closely, that much difficulty with respect to diagnosis is offered. Lukasiewicz[5] reports the following case, which was encountered in the Vienna clinic for dermatology.

The patient was a male, twenty-three years of age; and the affection dated from four and one-half years previously, when he had observed on the right lower leg a bluish-red bullous lesion, the size of half a pea. This was broken by scratching. Soon afterward pea-to-bean-sized, light-red, elastic nodules developed on the extensor surfaces of the legs, which were of firm consistency. These nodules had been gradually increasing in number up to the time of entrance, although a few had disappeared or grown smaller under the application of tincture of iodine. A variation in their size from day to day was sometimes observed. For the last one and one-half years they had been at times moderately painful, especially during the day-time. Of late the pain had increased, occurring in paroxysms of from five to ten minutes' duration, and accompanied by sweating, palpitation and a feeling of anxiety. A stiffness in the affected parts was felt in walking.

On entrance, about thirty bluish-red nodules, some as large as a pea, were to be seen on the lower half of the left thigh, seated in, and movable with, the skin, slightly projecting above the level of the sound integument. The overlying epidermis was intact and glistening. The nodules were sharply bounded, hard to the touch, and became paler on pressure, which was painful. On the extensor surface of the right thigh a zone composed of more than fifty tumors was found, somewhat larger than those already described. Their arrangement was irregular, partly grouped, partly scattered. When lightly touched, there occurred a twitching of the extremity; when firmly pressed, a series of interrupted concussions of the whole body, as if from an electric shock.

Histological examination of an excised nodule revealed a new growth of smooth muscular fibres, extending through the upper and middle layers of the corium. No excess of nerve elements to account for the extreme sensitiveness could be detected. The condition of the patient did not change materially during his four weeks' residence in the hospital, with the exception that the pain was somewhat less. Injections of arsenic and local applications were given. The patient was seen five months later, when it was found that the nodules had diminished noticeably in number, and that the pain was much less. During this period he had been taking arsenic internally (Asiatic pills).

This affection is not to be confounded with the neoplasms that appear in skin rich in muscular tissue, partly solitary, partly multiple, but yet much less numerous than in this case, and which have as their seats of predilection the breast, penis, scrotum and labia. Also the "painful tubercles" of the surgeon are mostly subcutaneous, and a distinct affection.

The symptomatology of this case accords with that first described by Besnier. Small light-red nodules develop in the skin without known cause; multiply and become larger with time, without degenerating. They may undergo involution, are at the start painless, but become sensitive to pressure as they increase in size, until finally real paroxysms of pain are experienced. This is the first recorded case of the affection in a man. The localization is not constant, three of the recorded cases affecting the upper extremities. The histological examination in this case, pointed to the conclusion that the new growth had its starting-point in the muscular elements of the hair, blood-vessels and sweat-glands. Besnier's view, that the process arises in the deeper layers of the skin, is not borne out by this case. The pain may have been caused by pressure of the tumors on the nerve fibres lying below and about them. It was greatly diminished by excision of the larger tumors. The prognosis would not seem to be unfavorable, in view of the involution of the tumors in this and in other cases, and Lukasiewicz would recommend the further employment of arsenic.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, January 4, 1893, Dr. A. Post in the chair.

Dr. C. M. Whitney read a paper on

CARCINOMA OF THE PROSTATE: REPORT OF A CASE.[1]

Dr. A. T. Cabot reported cases of

TUMOR OF THE BLADDER AND PROSTATE,

which will be reported later in full.

Dr. F. S. Watson: Dr. Cabot's experience certainly has been unfortunate as far as finding cancer more frequently than papilloma. Two-thirds of all bladder tumors are benign. Of all bladder tumors two-thirds are papillomatous. Cancer comes the next in frequency. After fifty, however, as he says, if you have a case of bladder tumor, you may be fairly sure it is cancer.

Dr. Cabot's experience differs from mine in not finding the papillomatous masses in the urine in most of his cases but agrees with that of some others who have not found them very frequently. In almost every case I have had, I have been able to make the diagnosis in the first two or three urinary examinations by finding perfectly characteristic papillomatous masses in the urine. Of course, the diagnosis is not sure as to the *nature* of the tumor from finding the characteristic fimbriated masses in the urine, for the surfaces of cancerous growths often present that character. The cutting off of the stream, as Dr. Cabot says, I do not believe occurs except with a growth near the neck of the bladder. This symptom occurred in one of my cases when I first saw the case, and was present again when there was a recurrence of the growth afterwards. The patient used to have his stream cut off suddenly just as happens with stone sometimes, and a few drops of blood came at the end of micturition.

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[5] Archiv. f. Derm. u. Syph., 1892, Heft. I.

[1] See page 354 of the Journal.

Dr. Cabot mentions drawing out of bladder tumor in one case, and cutting off a piece. Sir Henry Thompson pointed out the danger of doing that (which would not occur in the hands of Dr. Cabot but might with others) namely, that you are liable to draw out the bladder wall so far and make it so prominent as to be liable to cut the bladder wall itself, when attempting to divide the base of the tumor from it.

The quantity and appearance of the hæmorrhage in connection with these growths, I think, is characteristic, whether they be cancerous or benign though it is not by any means pathognomonic. In the first case which I ever saw, which was ten years ago, there was nothing to be seen in the urine but microscopic blood, and the patient died of long-continued hæmorrhages of small quantities daily: there were found post-mortem, two small bladder tumors about the mouths of the ureters. But, as a rule, bright blood and plenty of it is characteristic of bladder tumors. The occurrence and quantity of the hæmorrhage is not affected by exercise, some of the most profuse hæmorrhages occurring during sleep.

An interesting point in regard to the dissemination, both local and metastatic, of cancerous growths in the bladder is its slowness. Guyon mentions a case in which fifteen or seventeen years elapsed from the time of the first attack of hæmaturia until death occurred. This tardy extension is explained by the peculiar arrangement of the lymphatic system of the bladder which does not favor rapid dissemination. In the first case of cancer of the bladder that I operated upon the spread of the growth was very serious, involving the acetabulum and allowing the head of the femur to lie within the pelvis. This patient showed the first symptoms of his disease seven years before he died; and they were not serious until the last six months of his life.

In regard to treatment, I should not think of referring to the let-alone treatment in benign cases except for the fact that one or two physicians have said to me: "Do you think there is any necessity of operating on one of these cases? Is not the thing likely to be expelled by itself?" etc. Spontaneous expulsion has occurred but very rarely. It occurred in one of the very early classical cases in which a large myxomatous growth was expelled through the urethra of a young girl spontaneously. It is too rare to place any reliance upon. I saw an example of the spontaneous expulsion of a very large piece of a bladder tumor the other day in a patient who presented himself at my office with a recurrence of a benign tumor about two years after I had operated on him. He passed in my office a piece of bladder-growth larger than the end of my thumb to the first joint; such an occurrence, however, does not justify a belief that a "natural" cure is to take place.

As palliative treatment there is one thing which I think is valuable, and that is prolonged irrigations of the bladder with very hot water if the patient is bleeding a great deal to check the hæmorrhage and to get him into a state to allow of operation. With very few exceptions all cases of benign growths should, I think, be operated upon. In regard to operating upon malignant cases, I agree with Dr. Cabot. Let them alone, unless pain, retention of urine, or blood, or foul cystitis are causing great distress to the patient, and then operate for the purpose of drainage and an attempt at palliation of the symptoms.

As to the use of the cystoscope, I am pretty much in accord with Dr. Cabot.

For the removal of a bladder tumor I think the suprapubic operation is the best one nine times out of ten. There are a few cases in which a small pedunculated growth has been seen with the cystoscope which can be readily reached through the perineum.

Dr. M. H. Richardson: My experience in operations upon tumors of the bladder is very limited. Some years ago, at the Massachusetts General Hospital, Dr. Newell demonstrated with the endoscope the presence of a papilloma attached to the face of the bladder. This, I believe, was the first time a bladder-tumor was diagnosticated in this way in Boston. I removed the tumor by the suprapubic method. The patient died at the end of a few days with extensive urinary extravasation and general peritonitis. The cellular tissue as far as the left kidney was gangrenous. I have seen many cases of malignant disease of the bladder in which no operation was justifiable. It is not always easy to make a correct diagnosis in suspected bladder tumors. Recoveries are at times recorded where the disease seemed hopelessly extensive. Some years ago I removed a stone weighing 900 grains from the bladder. A good recovery followed; but a year later there was a hard, symmetrical mass above the pubes, which seemed to me probably malignant. Much to my surprise, this condition disappeared, and the man is now in perfect health. A short time ago I operated, in Waltham, upon a man whose history pointed clearly to malignant disease of the bladder, which condition was confirmed by digital examination through the rectum. There was a small soft spot in the centre of an extensive induration, which I decided to explore. There was a considerable discharge of pus with subsequent improvement of his general and local symptoms. In this case I dare say the disease was purely inflammatory, although at first it seemed undoubtedly malignant.

Dr. Watson: It is interesting to note the attempts which have been made to radically remove cancerous disease of the bladder. There are two methods, the intra- and extra-peritoneal; and there have been some almost total excisions of the bladder. One case of Pawlik's is most extraordinary. He removed a bladder from a woman, and eighteen months after the operation she was reported as well. Minor resections have seemed to offer a certain amount of hope in the early stages of the disease, that is, resections of cancers of the bladder which are small in extent and situated near the fundus, by removing the entire portion of the bladder, including its peritoneal covering and sewing up the peritoneal rent and wall of the bladder afterward. A certain number of cases have been reported which seem to offer a fair amount of hope for success in such operations.

Dr. Post: It seems to me the matter of sudden stoppage should be considered as one of the symptoms of tumor of the bladder. It is a symptom I have seen twice, once within two months. The man has had this symptom, occasionally attended with great pain, a number of years. He has been examined by competent surgeons for stone and none found. At the time I saw him he had had the first thing in the morning a sudden copious hæmorrhage. With the subsidence of that hæmorrhage the symptoms all subsided and as the blood cleared from the urine he got out of bed without symptoms of any sort. The only explanation, it seems to me, is a tumor which was caught at the mouth of the urethra; and it is possible that with the sudden hæmorrhage the tumor itself had escaped.

I want to speak of one other case which presents that same symptom. It was a case which I operated on during the last year in a man with a whole series of papillomatous growths which studded the bladder. The man was sixty years of age. The case was said by the pathologist to be simple papillomata; and certainly clinically it had all the characteristics of simple papillomata. The base of the tumor was soft and friable, but the peculiarity is that the symptoms date back some fifteen years. The first hæmorrhage took place a long while ago. That man is also interesting in this connection because the first time I saw him he became so violent that it was necessary to etherize him in order to escape personal violence either to himself or family. After the operation he was himself for a long while; but within a few days I have been consulted by his wife to know if I could not assist her in getting him committed to an insane asylum.

Dr. Cabot: I am afraid I did not make myself clear, from what Dr. Watson said. I did not mean to say that the majority of cases were malignant. I have happened to have patients over fifty, and I merely meant to call attention to the fact that after that age the symptoms of tumor of the bladder were almost always caused by cancerous tumors.

In regard to the removal of these tumors radically, I believe the pathologists state, and it has been my experience, that a very large proportion of the malignant tumors start from the prostate even where they appear as bladder tumors. In my cases there were several operated on as tumors of the bladder and were tumors projecting into the bladder but had started from the prostate. In those cases radical removal would be impossible. I saw one case in which I think possibly a radical operation of the sort Dr. Watson speaks of, that is removal of the top of the bladder, might have been done with sewing up of the peritoneum. Even in that case, however, by autopsy it was shown that the tumor involved the prostate, and the pathologists thought it had started from the prostate. It appeared however as a tumor on the top of the bladder projecting above the pubes.

In regard to the cystoscope, I used the cystoscope in two of these cases. One I mentioned, and in one other I saw an indefinite dark mass in a similar way, and that shadow was cast on the cystoscope by the tumor, that is, the tumor existed where that dark mass was seen; but in neither case was I successful in defining the tumor.

Dr. **Richardson** read a paper on

FOUR SUCCESSFUL NEPHRECTOMIES.

Dr. H. O. Marcy: I have brought this specimen of tumor of the kidney, which I take pleasure in showing to the Society. I have two cases briefly to report, one unfortunately a fatal one. In this case the patient died three or four days after the operation, but apparently from complications of the lung rather than from the operation direct. This specimen is from a young man of eighteen. The case I first reported to the Society last spring. At that time I reported it as removal of calculi from the kidney. These are the stones removed at that time. Then Dr. Clarke and I thought it was impossible to remove the kidney. We made a large lumbar incision, removed the calculi, and the patient did well for a time, gained five or six pounds; and it was thought he was going to make a satisfactory recovery. The wound did not close, and after his return from the summer vacation my attention was called to him when there was a sore and serious complication, — an abscess had opened into the right lung at the base. At that time it was clear something must be done. It seemed from our previous experience that it was hardly probable we should be able to free the kidney. We opened the wound, found several other calculi in the various pockets, and the kidney was with a good deal of difficulty enucleated. The recovery has been very satisfactory. The urine immediately after the first operation was clear for a time, again became milky and cloudy; and since the operation the renal secretion is normal in amount. The amount of solids is abundant and the patient is practically a well boy. He came to my house a few days ago, and reported that he had been gaining a pound a day for a part of the time. This operation was the last of October.

I quite agree with Dr. Richardson in reference to the difficulties of the lumbar incision; and I believe, if I am to do these operations more, that I shall be greatly in favor of the abdominal incision. There are many reasons why this gives a special advantage in operation — the cramped field, the difficulty of manipulation of the pedicle deep down in the lumbar region, with the narrow limit of retraction of the walls of the incision, make it an extremely difficult and troublesome operation. In reference to the closing off of the pedicle, I have adopted that which you know I have done in a good many other operations — sewing with the double suture quite like that of the shoemaker's stitch. The needle is curved as desired and the eye is near the point. After the introduction of the needle, it is rethreaded with the opposite end of the suture and withdrawn. This is continued until the base is sewn across. In this instance we were enabled not only to sew off the pedicle, but to close layer by layer the lumbar incision which had been made just as large as possible. The specimen was sent to Dr. Whitney, and proved an interesting one for preservation.

Dr. A. P. Clarke remarked that the first patient whose case Dr. Marcy has just reported was naturally of a feeble constitution; he had suffered from disease of the lungs. He had a weak heart and a manifestly deficient circulation. After the kidney had been removed, the patient rallied, and for a while appeared better; he took considerable nourishment, though in

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See page 5 of the Journal.

small quantities. The passing of the urine was easier than before; and, considering what he had taken into the stomach, the quantity of urine voided was not small. There was but little albumen, and the specific gravity was not far from normal. The death of the patient was, without doubt, owing to the disease of the lungs and to the general exhaustion from which he had long been suffering.

The other case which Dr. Marcy has reported was an unusually severe one. There had been in the renal tissue extensive suppuration; the patient had thereby become much enfeebled. He had suffered severely. For some weeks after the operation for the removal of the pus and the renal calculi he appeared greatly relieved. I also saw the patient for some time while Dr. Marcy was absent; and for a few weeks I entertained a hope that the progress of the recovery would be uninterrupted. When, however, the severity of the symptoms returned again, we were both agreed that an operation for the entire removal of the affected kidney offered the only chance for his recovery. The operation was accomplished without serious loss of blood; it effected an entire relief.

Dr. Cabot: Dr. Richardson spoke of one case which I saw twice, in which the diagnosis between enlarged gall-bladder and the kidney was difficult to make. I should certainly entirely agree with Dr. Richardson as to the advantages of the lateral abdominal incision; and in a proper case it seems to me it is a very good plan to close the peritoneal cavity behind as well as in front. It is very easily and quickly done by continuous catgut suture, and it leaves the peritoneal cavity uninvaded by the operation, drainage being introduced through the loin if necessary.

Dr. Irish, of Lowell: I agree with Dr. Richardson's choice of the anterior incision in nephrectomy, instead of the lumbar. In all cases the operation is more easily done by way of the abdominal cavity.

Two years ago I reported a case of nephrectomy, and presented to this Society the specimen, a sarcomatous kidney. The report was made three days after the operation. The patient was then passing twenty ounces of urine daily; but at the end of the following month the amount had increased to forty. The patient entirely recovered, but died two months since from cancer of the liver. In this case and a preceding nephrectomy for pyonephrosis the abdominal incision was chosen. Before making these operations I had anticipated great difficulty in securing the pedicle. This, however, did not prove to be at all a difficult matter. The pedicle became long and accessible by the stretching of the vessels. The "Staffordshire knot" was used in each case.

Dr. Richardson: I forgot to mention that in the first case, at the suggestion of Dr. Cabot, I shut off the abdominal cavity by sewing the peritoneum which covered the kidney to the peritoneal margin of the wound. The result was very satisfactory.

Dr. Allen showed

AN IRRIGATOR FOR THE FEMALE URETHRA.

The fact that gonorrhœa in women is essentially a urethritis, as it is in men, seems not yet to be recognized by all. I think it is agreed by most authorities now that the vaginal mucous membrane does not furnish a favorable breeding-ground for the gonococcus except in children, and that gonorrhœal vaginitis practically does not exist. Gonorrhœa gets into the cervix in quite a large proportion of cases, and into the vulvo-vaginal glands in a small number of cases; but the real seat of the disease is the urethra. There are certain difficulties in the treatment of urethritis in women. In the first place, after the acute symptoms have subsided, it is impossible for a woman to recognize that there is anything the matter with the urethra, the treatment is almost always neglected, and it persists for a long time; in the second place, whereas in men the urĕthra can easily be injected or irrigated at frequent intervals, in the woman it is not so, because she cannot see the physician often enough. Therefore it occurred to me that a woman might be taught to irrigate her own urethra; and I succeeded in teaching one woman to do so with the small nozzle of a Davidson syringe. I then had this irrigator made, which is a hard rubber nozzle one and a quarter inches long, having about the curve of the urethra, with a bulbous end and perforations pointing backward, and a flange, to prevent it slipping in too far. I have used it in a number of cases, and it serves the purpose very well. I have not yet had the patient use it herself, but I think it is practicable.

A CASE OF HYSTERECTOMY.

Dr. Bradford showed a patient, a girl aged eleven, upon whom a hysterectomy was performed a year before. The child at that time presented a large abdominal tumor reaching nearly to the umbilicus. The tumor had increased in size within the preceding three months. The tumor was apparently connected with the uterus, and at the time of operation it was found to consist of a large vascular mass. The operation of hysterectomy was performed, the stump being left and treated outside of the abdomen. The patient made a good recovery, and there has been no return of the tumor; the patient being entirely well. The pathological examination of the tumor showed it to be a papillary cystoma of the ovary, which had extended and involved the whole of the uterus, so that the mass could not be distinguished from that of the uterus. A hysterectomy was therefore necessary.

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THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular Meeting, February 11, 1893, the president, **Dr. Charles M. Green**, in the chair.

Dr. Charles M. Green read a paper on

LACERATIONS OF THE VAGINA DUE TO COITUS.[1]

Dr. A. D. Sinclair was called to one case presumably of this nature where there was a very free hæmorrhage following the first coitus, so that the mattress was soaked. The hæmorrhage had ceased on his arrival and he was unable to find its source.

Dr. J. C. Munro spoke of a case where there was a tear three-quarters of an inch long at the right introitus. There was much bleeding and he had to put in several sutures.

Dr. G. H. Washburn had never seen a case of severe hæmorrhage from coitus, but he was reminded of a case where severe hæmorrhage resulted from a slight tear caused by the introduction of a soft rubber pessary.

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[1] See page 364 of the Journal.

DR. A. WORCESTER reported

A CASE OF CÆSARIAN SECTION.[1]

DR. EDW. REYNOLDS spoke of the difficulty of estimating the true conjugate from the diagonal conjugate. The rule, of course, is to subtract one-half to three-quarters of an inch, depending on the height of the symphysis. In one case, however, which Dr. Green saw with him, the height and inclination of the symphysis was such that he had to subtract one and one-quarter inches from the diagonal in order to obtain the true conjugate.

He congratulated the reader on such a completely successful operation under such unfavorable circumstances, the patient having been in labor so long. He believed, however, that the proper operation in any case where intra-uterine instrumentation had made sepsis probable was total extirpation of the uterus. He was present last week at a medical meeting in Albany where the consensus of opinion was against craniotomy and in favor of Cæsarian section at the time of election; in late cases Porro or total extirpation was favored. If the contraction of the pelvis was of moderate extent symphyseotomy was indicated.

DR. G. HAVEN asked why the reader had not ligatured the uterus before incising.

DR. WORCESTER replied he did not expect so much hæmorrhage and would not have got it had it not been for the placenta being implanted in front.

DR. HAVEN believed it was the only case ever reported where both mother and baby lived after such a long period of labor and intra-uterine interference.

DR. SINCLAIR remarked that the patient certainly showed much endurance during this and her previous labors.

DR. WORCESTER in reply to a question said that he was personally opposed to symphyseotomy. He had tried it with Dr. Green and others on the cadaver and from the cracking that occurred at the sacro-iliac synchondroses he should be very much afraid to do it in life. He thought it was a very bungling operation.

DR. REYNOLDS said that experiments on the cadaver of a woman who did not die at or near full term were very misleading. During pregnancy synovial joints formed at the sacro-iliac synchondroses and this it was that made the operation possible. The statistics on this operation were also sufficient to offset any theoretical views on the subject, for the operation had now been performed 69 times with 66 recoveries. The three fatal cases were caused by post-partum hæmorrhage, sepsis and renal disease, and were not due to the operation. None of those who recovered had any difficulty in locomotion. The operation has been done nine times in America.

His own personal feeling is, that he would rather do the Cæsarian operation in pelves under three inches, and in Dr. Worcester's case with a nine-pound child the operation of symphyseotomy is ruled out.

Dr. Reynolds then described the latest method of performing the operation of symphyseotomy.

DR. J. C. MUNRO had in the course of his anatomical work performed symphyseotomy a great many times on the cadaver; and he was surprised that Dr. Worcester and Dr. Green should have had so much trouble with the sacro-iliac synchondroses, for even in the non-pregnant condition there is a synovial membrane in these places. The prevesical fascia can be peeled off with great ease by the finger which would obviate any danger of vesico-vaginal fistula.

DR. F. C. COBB referred to a case of Cæsarian section he had seen performed in Vienna by Carl Braun. The chief points of interest here were that the uterus was tilted forward outside of the abdomen before the uterus was opened. A ligature was put around it and tightened by an assistant when the uterus was incised.

DR. WORCESTER spoke of the difficulty of getting a tube around the uterus while it was still in the abdominal cavity and the danger to the baby from the delay caused by this as well as from the compression of the vessels of the uterus. He also dwelt on the difficulty, described in his paper, in making the row of sero-serous sutures, which in another case he would omit.

DR. REYNOLDS thought that his difficulty in this case was exceptional and not likely to happen again. He suggested a longer incision so as to permit an assistant to get his hands around the neck of the uterus to control hæmorrhage if necessary. A few more inches of incision would do no harm.

DR. F. B. HARRINGTON approved in general of long incisions as they allow more satisfactory operations, heal as quickly as short ones, and there is no danger of hernia now as formerly.

DR. CHARLES M. GREEN: It is exceptional that the placenta is seated on the anterior uterine wall; but as the placenta may be thus seated, it is important that the operator should have a ready means of restricting hæmorrhage, if it is found, on making the uterine incision, that the placenta is under the knife. Two measures have been suggested to control hæmorrhage when the placenta is thus attached, — the passage of a piece of stout rubber tubing around the lower uterine segment, which can be tightened, if necessary, the moment the uterine incision is made, or the grasping of the lower segment by the two hands of an assistant, whereby an efficient compression can be exerted. To render the lower segment accessible, however, for either of these two procedures, a long abdominal incision must be made. Some operators believe that all abdominal incisions should be made as short as possible; but others question whether a long incision prejudices success. It would certainly seem wise in the Cæsarean operation to make a sufficiently long incision to afford ready access to the lower uterine segment.

Some surgeons have thought that the lower uterine segment is liable to be injured by tight compression with rubber tubing; but it is doubtful if the risk of such injury is commensurate with the risk of serious hæmorrhage when the placenta is seated on the anterior wall. It certainly seems to me wiser to place the tubing *in situ* in every case before making the uterine incision; then if the placenta is encountered, the tubing can be quickly tightened and the otherwise (as in Dr. Worcester's case) enormous hæmorrhage can thereby be largely controlled.

I am reminded of one matter of detail, which seems to me of importance, in regard to the extraction of the child. The uterus contracts very speedily usually, after the child has been only partially removed from the uterus; and, if the child is seized by the feet for extraction, there is always more or less risk that the quickly contracting uterus will grasp the head, or the child's neck, rather, and delay extraction until perhaps the child is fatally asphyxiated: cases of this mishap have been recorded. It would therefore seem prudent to avoid this misfortune by seizing the child by the head or by the neck: the grasp of the uterine incision on the child's body or legs would hardly cause any serious delay.

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[1] See page [illegible] of the Journal.

I am surprised at the experience of Dr. Worcester in the difficulty of folding in the uterine peritoneum and inserting the sero-serous sutures. Sänger originally taught that in order to secure sufficient peritoneum to turn into the incision, it was necessary to resect a V-shaped piece of the uterine muscle on each side; but he subsequently found that after the uterus had contracted, the peritoneal covering was sufficiently loose to enable him to turn it into the incision without difficulty, and for some years muscular resection has been abandoned. The importance of bringing into apposition the peritoneal surfaces is very great; for if these surfaces are well sutured in apposition, primary union probably takes place within thirty-six hours.

Dr. Worcester certainly encountered many difficulties in his case; and he deserves to be congratulated on his success.

Dr. G. Haven in regard to sutures used for this operation, believes that silk is by far the best, and that a double set of deep and sero-serous sutures should always be inserted.

Dr. Worcester, in closing, said that he would in future endeavor to seize and extract the child by the nape of the neck, in order to avoid the danger of the after-coming head catching and being held by the contractions of the uterus. His difficulty with the sero-serous sutures was undoubtedly owing to the violent contractions of the uterus. Kelley advises giving up these sutures. He had found by taking one deep suture at the corner of a wound and drawing on to it by holding it up, it was easier to place the other sutures and help stop any hæmorrhage.

A Prize Essay on Demography. — Dr. Josef Körösi, Director of the Statistical Bureau of Buda-Pesth, offers a prize of 1,500 francs for the best essay on "The Knowledge and Progress of Demography." The essay must be confined to a critical review of the principal events in demography during the last fifty years in the principal towns of Europe and of the United States. The prize is open to the German, English, French, and Italian languages, and must be sent in before March 1, 1894.

Erroneous Ideas on Ptomaines. — The *British Medical Journal* points out, that not only the community at large, but also many physicians, seem to have wrong ideas about the chemical products of bacteria. The principal error consists in supposing that the toxic properties of these substances can be destroyed by heat, such as is sufficient to destroy the bacteria themselves. Many of these toxines are very stable against heat; and although the bacteria which produced them may be entirely destroyed, the poisonous properties of the substance may remain. Canned foods, if they contained these products when they were put up, may be poisonous, even though sterile. Another mistake is to suppose that the ptomaines are necessarily dissolved or distilled by boiling, but they may remain hidden in the centre of a piece of meat. It is perfectly possible to suppose that one sardine only out of a box may be poisonous.

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LEPROSY IN BRITTANY AND MORVAN'S DISEASE.[1]

Morvan's disease consists, as is well known, in the loss of one or of several phalanges, insensibility of the fingers, hands and arms, and disturbance of the capillary circulation. Dr. Zambaco-Pacha, who has had considerable experience with leprosy in the East, was struck by the resemblance of some of his patients to those affected with the so-called Morvan's disease.

In a letter written to Dr. Thibierge in 1891, Dr. Zambaco took the ground that Morvan's disease, which had of late been considered either as a form of syringo-myelia or as an independent entity, was nothing else than lepra mutilans: and that a great many, at least, of the cases described as syringo-myelia, that presented claw-like hands with atrophy of the interosseous muscles, were undoubtedly cases of leprosy of the anæsthetic type.

This view was received with much incredulity, and Zambaco determined, therefore, to make an expedition to Brittany, and to see Dr. Morvan's patients. A careful investigation of the various hospitals and asylums was instituted, and inquiries were made in the various small villages about Brest, as to the existence of people suffering from deformity or mutilation of the extremities. The result was the discovery of a remarkably large number of persons, chiefly belonging to the lowest class, who were affected by mutilation of the hands. Many of these persons were without doubt, in the opinion of Zambaco, afflicted with leprosy. The mutilations of the hands were identical with those seen in leprosy, and in many of the patients cicatrices consecutive to ulcerating tubercles were present. Several of Dr. Morvan's patients were seen and pronounced to have leprosy of the mutilating type. In the course of Zambaco's investigations several people were encountered who possessed, in addition to the deformed hands, large ulcerated and anæsthetic areas upon the legs.

Many of these cases are admitted to have presented some difficulty of diagnosis to those unfamiliar with the appearances of leprosy. But it was possible to find a certain number of classical cases of leprosy in Brittany. These were cases of tubercular leprosy of the face with leonine aspect, tubercular lesions upon other parts of the body, pigmentary and atrophic changes, etc. Several of these cases are represented by photographs, and leave no doubt that more cases of leprosy exist in Brittany than has been hitherto supposed.

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[1] Annales de Derm. et de Syph., December, 1892.

Zambaco emphasizes the fact that leprosy was, in former times, very prevalent in Brittany, as is shown by the remains of leper asylums, and other signs of its presence. Its existence at the present day had not been suspected, and many doubtful types of disease have been honored with new names, as Morvan's disease and syringo-myelia, most of which cases belong, according to Zambaco, under leprosy. Letters written to the various practitioners in Brittany brought a number of replies accompanied by photographs, that left no doubt of the very considerable numbers of lepers existing in Brittany. Zambaco believes that the greater part of all the cases described as syringomyelia and Morvan's are in reality leprosy of the anæsthetic form, sometimes in an attenuated or slightly modified form.

In the discussion following this paper in the Société de Dermatologie et de Syphiligraphic, MM. Vidal and Besnier demanded a demonstration of the bacillus lepræ or of the characteristic nodes of the nerve-trunks in these cases from Brittany. Zambaco, while claiming that the clinical appearances in many if not all instances sufficed for a diagnosis, promised to procure all the material possible for bacteriological examination.

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THE UNITED STATES AS A FIELD FOR PRACTICE.

A CORRESPONDENT hailing from Yale College, writes to the *Lancet*, asking what are the chances of obtaining a practice in the United States. Thereupon a "British practitioner, twenty years resident in the States," replies that America is the quack's El Dorado, and that competing with quacks is neither dignified nor remunerative. As a rule, the quack will get the better of the struggle, for he will descend to methods that an honorable and conscientious member of the profession can neither countenance nor practice.

Doubtless the new comer will be dubbed "doctor" whatever his diploma, but the title "doctor" is a very cheap one in this country, and is applied to common farriers, patent-medicine pedlers and a host of druggists. The ratio of legitimate practitioners to the population of the States is one to five hundred, and this does not include the great number of humbugs that flood the country.

Counter prescribing by druggists is very extensively practised and there is a great deal of "self-doctoring" carried on by the average American. The patient will generally administer a variety of medicines to himself before sending for his physician. To give an idea of the enormous sale of patent medicines in the United States, it may be stated that from one-third to one-half of the space of the average apothecary's shop is allotted to these remedies, and that they are on sale at every grocery store. It might be added that a considerable proportion of the space supposed to be devoted to reading-matter in the daily newspaper, and even in the religious family journal, is given over to cunning advertisements setting forth the praises of some kidney cure, nerve medicine, or other panacea; these advertisements are generally ushered in by some thrilling account of a steamboat explosion in which the party participated, and whose shattered nerves were miraculously restored by the remedy under consideration. Sometimes the reader is switched off from a paragraph detailing the benefits of Hawaiian annexation to the marvellous recovery of one of those islanders after taking a bottle of the advertiser's Liver Tonic.

The *Lancet* writer affirms that there is comparatively little dispensing done by doctors in this country; but undoubtedly, for self-protection, the doctor will have to do more of it and the feeling among practitioners is growing rapidly in favor of reviving this old custom. The fees are fair, and generally speaking, the doctor's charges are made upon the principle of getting as much as he can; but it must be remembered that a doctor in this country considers that he does extraordinarily well if he collects two-thirds of his accounts. If patients do not wish to pay, it is seldom that they can be compelled to do so. Poverty is very much on the increase in the large cities of the United States and charitable institutions likewise.

"British Practitioner" counsels the Yale University inquirer to betake himself to a British Colony, "where things are fashioned after the mother country." The last man in his estimation desiring to emigrate to the United States ought to be a medical practitioner.

The medical practitioner desiring to emigrate from the British Islands should also remember, however, that the United States covers a considerable part of a large continent, and has a population of about seventy million people. Conditions naturally vary somewhat in different parts of this extended area, and among different elements of this population.

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INTERSTATE QUARANTINE AND STATE SANITATION.

THE recent Conference of State Boards of Health held in New York has happily adjourned. As the most graceful and desirable thing about the *vaut rien's* life was his leaving it, so it may be said of this Conference, that the best and most useful thing it did was to adjourn. It is a self-constituted body without representative powers or privileges, composed of officials connected in some capacity with various State Boards of Health. The personal action or opinion of these individual officials in no way binds the health boards with which they are connected, and may not even correctly represent the course which will be adopted by those boards in regard to a given question. The power and jurisdiction of the boards themselves is limited by legislative appropriations and enactments. If measured by the appropriations, the power in many instances must be very small. If these officials would devote themselves — their time, their energies, and such powers and means as their respective States grant them — to encouraging, developing and applying measures of internal sanitation, to making sure that water-supplies were pure and uncontaminated when brought to the consumer and properly disposed of when rejected as effluents, they would be doing a work at once of the greatest benefit to the people at large, and one needing no less than all the time and thought of all these boards. When, however, the officials of these boards undertake to regulate interstate commerce and lay down rules for the great interstate transportation companies at epidemic periods, they are transcending their proper sphere of action, and in so far as they are not wasting their time, such a course will tend to make confusion worse confounded, especially if the independent action of each State is advocated.

The regulation of interstate traffic and travel — whether from the commercial or the sanitary point of view — must be and can only be effected by the Federal Government. Congress has failed to supply suitable or sufficient machinery to effect this object, and the country must accept the consequences in having precautions neglected in times of tranquillity and ridiculously exaggerated in periods of excitement and panic. The recent Act to increase the powers and duties of the Marine-Hospital Service may be made efficient and effective for the protection of the coast-line and possibly of the Canada line, especially with the cordial co-operation of the local quarantine officials, but its unfortunate limitations are made plain in the light of this Conference in New York.

A good deal of attention is being given to water-supplies. This in itself is reassuring; but where the chief result is to prove that a supply is contaminated, which before was only suspected, and this without correcting the evil or only attempting to correct it in a manner at once temporary, costly, unscientific and grotesque, then this talk about water-supplies and drainage is quite the reverse of reassuring. The water-supplies of several of our largest cities (it is entirely unnecessary to name names), to say nothing of smaller cities and towns, are very far from being protected as they should be. This is so generally understood that there will probably be no "unsuspecting" stranger to be warned against them. All the strangers will be ***suspicious*** strangers. The warnings had better be reserved for the natives, who have grown callous to these conditions.

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MEDICAL NOTES.

Pubic Symphyseotomy. — On Friday, March 24th, says the *New York Medical Journal*, at midnight, in a tenement house, Dr. J. Clifton Edgar, of the Lying-in Hospital in Broome Street, performed this operation in the presence of the staff of that institution. The patient was a primipara with a flattened pelvis. She had been in labor for two days, and her family demanded the sacrifice of the child. This Dr. Edgar refused to accede to; and by means of symphyseotomy he was able to deliver her of a living child. On the third day after the operation both mother and child were reported to be doing well.

Cholera in Russia during the Winter. — The consul-general at St. Petersburg, in a letter to the State Department in Washington, says that at no time during the present century, as shown by the statistics of the Observatory of the Imperial Academy of Sciences has the average temperature of the Russian Empire been so low as in the present season, registering an average of 13.5° F. colder than the average for the last 138 years. While this abnormal cold brought incredible distress and suffering, especially to the poorer classes, it has been patiently endured in the hope that the germs of cholera might thereby be effectually destroyed. Such hopes, however, have been in vain, as the disease has been present during the entire winter; and even at a time when the temperature was at the lowest it has not only been more or less general in the empire, but has shown a very high rate of mortality. It is therefore reasonable to suppose that immediately after the breaking up of winter this epidemic will show itself in nearly every portion of the empire.

BOSTON.

The Water-supply of Boston. — Mr. Desmond Fitzgerald, the engineer of the Water Board, will describe the water-supply of the city before the Section for Clinical Medicine, Pathology and Hygiene, at 19 Boylston Place, Wednesday evening April 19th at eight o'clock. The subject, which will be illustrated by lantern slides, will be "The Water-supply of Boston; Its Impurities, and the Measures Taken to Prevent Them."

Back Bay Alleys. — The alleys on the Back Bay district in Boston, have received the attention of the City Board of Health, who have issued a circular, calling the attention of owners and agents of property abutting on private courts, lanes and passageways to the necessity of greater care in maintaining the cleanliness of these places. The fact that they are in many cases below the grade of surrounding property and unpaved, makes them both unsightly, uncleanly, and a menace to the health and comfort of those living near them. In many cases they are made the dumping ground of all sorts of refuse material. It is neither the right nor the duty of the city to keep these places clean. This is the duty of the owners of these ways, who are generally the owners of the abutting property, and who are as much bound to keep these private passageways in a cleanly condition as they are to care for their back-yards. In view of the divided responsibility for the condition of these places, it is suggested that the parties directly interested employ some person or persons to care for the alleyway throughout, and divide the expense among themselves. If such an arrangement can be made, the Board of Health will undertake to recommend responsible parties to perform the work. If there be objectors to this plan who not only will not share the expense in this manner, but who will also refuse to adopt the order of the board to clean up that part of the alley for which they are individually responsible, they will be summoned into court without delay. This has been positively decided upon.

NEW YORK.

The Quarantine Conference. — From April 5th to April 8th a conference of nearly fifty health and quarantine officers, representing a large number of States, as well as Mexico and Canada, was in session at the Fifth Avenue Hotel. The principal topic of discussion was the enforcement of quarantine laws, with special reference to the possibility of the approach of cholera during the coming season. Rules were also adopted for transportation companies in case of an epidemic. On April 6th the delegates paid a visit to the hospital for contagious diseases on North Brother Island, by invitation of Drs. Edson and Roberts, of the Board of Health, and expressed themselves as much pleased with the excellence of the arrangements there. On April 7th the conference visited the quarantine stations in the harbor, and found much to criticise. On their return a formal expression of opinion was adopted which was in part as follows: "The conference recognizes the fact that the present quarantine administration has labored under the disadvantage of having to operate a system burdened with grave inherited defects, and full credit is accorded for such good work as has been done by the present active quarantine officer. The conference is informed that several important improvements are contemplated, and that as soon as possible these will be instituted. . . . The facilities for the disinfection of baggage and bedding are deemed entirely inadequate. The conference is informed that an extension of the same to about nine times its present capacity is contemplated, but, in view of the constant menace from cholera, the conference urgently recommends that these facilities be increased immediately. If practicable, it is also recommended that a wharf in deep water be built for the better accommodation of vessels under treatment at Hoffman Island. The supply of drinking-water in cisterns is such as to render its contamination at the stations possible, and the necessity for a better arrangement is imperative. It appears that no disinfection of immigrants' baggage other than on vessels has been practised at the port of New York since last October, and this conference formally protests against the continuance of this neglect. The conference also deems it its duty to report that the certificates at present issued by the United States officials, as represented by Dr. Wheeler of that service, have no value whatever in guaranteeing any previous inspection or disinfection of immigrants' baggage, as this station is not designed for quarantine work. The hospital at Swinburne Island is well equipped, and the crematory attached to same is one of approved construction."

The Croton Water-shed. — At a meeting of the Academy of Medicine held April 6th, the report of the special committee appointed to investigate the sources of pollution in the Croton water-shed and recommend adequate legislation at Albany was received. It gave in detail the efforts of the committee to secure amendments to the Webster bill, and, failing in this, to have introduced and passed an additional bill providing for the appointment of a commission composed, in addition to the Commissioner of Public Works, of a member of the City Board of Health, a member of the State Board of Health, a member nominated by the Board of Commerce, and a sanitary engineer approved by the American Society of Civil Engineers. Concerning the Webster bill, which is now in operation, the report said: "It will be seen that this act gives enormous power to a single man — a part of which power is legislative; that it does not give power to make and enforce sanitary regulations; that it does not require the adoption of a plan for sewage-disposal devised or approved by sanitary experts and engineers; and that, although it gives authority to abate nuisances, it does not forbid the creation of nuisances, except the city buys the land upon which they may be established." The following resolution was unanimously adopted by the Academy: "*Resolved*, that in the opinion of the New York Academy of Medicine the preservation of the purity of the water-supply is of vital importance for the protection of the city from a very serious phase of the visitation of cholera. The subject can be dealt with only by sanitary experts and engineers, who can bring to bear upon all measures adopted for the purpose knowledge derived from the experience of other countries and cities which have had to deal with the prevention of water-pollution. The Academy of Medicine regards any measure, which, like the Webster act, looks principally to real estate contiguous to or contributing to the sources of water-supply as demonstrated to be both insufficient and needlessly expensive. Therefore, the Academy of Medicine cannot sanction the procedure of the Commissioner of Public Works, which looks principally to the purchase of land, but believes that the sanitary care of the water-shed should be intrusted to a properly constituted commission, so composed as to inspire public confidence that the steps taken will be in accord with the principles and practises of sanitary science."

University of the City of New York. The fifty-second annual commencement of the Medical Department of this University was held at the Carnegie Music Hall on April 4th. There were 125 graduates, and the valedictory address was given by William H. Hicks, of Tennessee.

Inspector of Contagious Diseases. — Dr. Chas. F. Roberts has been promoted from the position of Chief Inspector of Contagious Diseases to that of Sanitary Superintendent, vacated by Dr. Cyrus Edson. Dr. F. H. Dillingham has been appointed Assistant

Sanitary Superintendent, made vacant by the death of Dr. E. H. Janes, and Dr. Alvah H. Doty promoted to the head of the Bureau of Contagious Diseases. Both these physicians have served as regular sanitary inspectors of the Board of Health for several years.

The Seney Hospital. — Mr. George I. Seney, the founder of the Seney Hospital, in Brooklyn, died April 7th. For this institution he gave fourteen lots of ground, valued at $40,000, and $200,000 in cash. He also gave away many thousands more during his life to various benevolent and literary institutions.

The Death-rate still continues to be extremely high. The number of deaths reported during the week ending April 8th was 1,183, an increase of 34 over the previous week. This abnormally large mortality is unquestionably due to a great extent to the effect of epidemic influenza, which has been increasingly prevalent for over a month past. During the week 22 deaths were attributed to influenza alone, while there were 65 from bronchitis, and 304 from pneumonia, as against 273 during the week ending April 1st. The almost unprecedented fatality from pneumonia can only be explained by the presence of *la grippe*. It is noted also that cerebro-spinal meningitis and other nervous disorders have shown a material increase, and this is no doubt due to the same cause.

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Miscellany.

THE CARLYLE HARRIS CASE.

The sentence of Carlyle Harris in New York for the murder of his wife two years ago has been through all possible courts of law, and depends only on the governor; but there is a strong feeling in the community at large that the evidence was insufficient. Harris was a medical student, secretly married to Helen Potts. In order to conceal the marriage he had previously procured an abortion, and as a motive for the crime was the supposition that he repented of the marriage. The victim was eighteen years old, and a pupil in a girl's boarding-school. On the night of January 31st she took a capsule given her by Harris for headache, and soon afterwards presented symptoms of opium poisoning. The physicians present sent for Harris and asked what the capsule contained, and were told that it contained four grains of quinine and one-sixth of a grain of morphine. He pretended to see the apothecary who prepared the capsules; and after the death of the patient, he told her mother that it was the druggist's mistake. It would appear that if Harris had kept his mouth shut, the whole matter might have blown over; but he talked, and was suspected and arrested. A post-mortem fifty-five days after death proved the presence of morphine in the stomach. The apothecary, by a check system, which he always used when dispensing poisons, proved that a mistake on his part was practically impossible. Harris had in his possession some more capsules which appeared to be undoubtedly from the same lot, and said to be by the prisoner, which contained quinine and only one-sixth of a grain of morphine. One of these he gave to the coroner at the time of the girl's death; and at the same time her mother, in order to get possession of the body, testified that her daughter had heart-disease.

Some empty capsules were found in Harris's room; and the prosecution claimed that the fatal one had been emptied, and filled with morphine only, collected from capsules of small doses. Harris was proven to be of dissolute character; and it was also shown that he had just listened to lectures on opium at the medical school. How much weight this latter evidence carried in the minds of the jury it would be hard to judge. Subsequent offer of evidence tending to show that Helen Potts took morphine habitually was not admitted.

This case adds another to the list of celebrated criminal cases argued on circumstantial evidence, containing interesting medico-legal questions. To the public at large the evidence seemed insufficient, to the jury and the legal authorities the crime appeared established beyond reasonable doubt.

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OMNIS CELLULA E CELLULA.

Professor Virchow gave this year the annual Croonian lecture before the Royal Society in London. The lecture was a *résumé*, and was not intended to contain any thing new; but a general discourse on cellular pathology from him, many years after his first studies of the cell, can hardly fail in interest. After a review of the history of modern pathology he closes by saying[1] that the begetting of a new cell from a previous cell supplements the reproduction of one individual from another, of the child from the mother. The law of the continuity of animal development is therefore identical with the law of heredity, and this applies to the whole field of pathological new formation. Even diseased life produces no cells for which types and ancestors are not forthcoming in normal life. These are the fundamental principles of cellular pathology. In proportion as they have become more certain, and lastly of more general value, they have also secured for themselves great importance in physiology.

The cell is not only the seat and vehicle of disease, but also the seat and carrier of individual life; in it resides the "vita propria." It possesses the property of irritability, and the changes in its substance, provided these do not destroy life, produce local disease. Disease presupposes life; should the cell die, its disease also comes to an end. Certainly, as a consequence, the neighboring and even far distant cells may become diseased, but, as regards the cell itself, the susceptibility to disease is extinguished with life.

Since the cellular constitution of plants and animals has been proved, and since cells have become recognised as the essentially living elements, the new science of biology has sprung up. It has not brought us the solution of the ultimate riddle of life, but it has provided concrete material, anatomical objects for investigation, the properties, the actions, and the passions of which we can analyse. It has put an end to wild confusion of fantastic and arbitrary notions, it has placed in a strong light the immeasurable importance of anatomy, even in the most delicate conditions of the body, and, lastly, it has made us aware of the close similarity of life in the highest and lowest organisms, and has thus afforded us invaluable means for comparative investigation.

Pathology has also its place, and one certainly not without honor, in this science of biology, for to pathology we are indebted for the knowledge that the opposition between healthy and diseased life is not to be sought in a fundamental difference of the two lives, not in an alteration of the essence, but only in an alteration of the conditions.

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[1] British Medical Journal.

Pathology has been released from the anomalous and isolated position which it had occupied for thousands of years. By applying its revelations not only to diseases of man, but also to those of animals, even the smallest and lowest, and to those of plants, it in the best manner helps to strengthen biological knowledge, and to narrow still more that region of the unknown which still surrounds the intimate structure of living matter. It is no longer merely applied physiology; it has become physiology itself.

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RESOLUTIONS OF THE BOSTON OBSTETRICAL SOCIETY ON THE DEATH OF DR. CHARLES P. STRONG.

Resolved: That in the death of our late associate, Dr. Charles Pratt Strong, the Obstetrical Society of Boston has met with an irreparable loss.

Resolved: That to Dr. Strong's active and faithful efforts this Society owes much of its success and influence; that he has increased our knowledge of the diseases of women, and has by his invention of new and skilful operative procedures, enabled us to treat them more successfully.

Resolved: That his active, faithful and laborious professional life has relieved many a sufferer, and is an example and incentive to us all. He was cut off in his prime, and will be sadly missed, not only by this Society, but by the whole community in which he was doing so much good. Falling in the line of duty, he adds another to the list of those surgeons who have sacrificed their lives that another might live.

Resolved: That we tender to his family our most heartfelt sympathy.

(Signed) John Homans.
F. H. Davenport.
Francis B. Harrington.

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Correspondence.

PHOTO-MICROGRAPHS.

Newton Lower Falls, April 3, 1893.

Mr. Editor: — A criticism upon the illustrations of a medical work reviewed in a recent number of a medical monthly closed with the statement that drawings by the observer were to be preferred to photographs.

The great wealth of illustration in the medical literature of to-day, teaching in many cases as much as the accompanying text, renders the best method of making such illustrations worthy of consideration.

There are two distinct methods available for the purpose. The first, or subjective method, is that by which the observer with his hand records his impressions of what he thinks he sees in a drawing. The other, or objective method, is the photographic reproduction of the microscopic field, which gives, subject to photographic limitations, an impartial view of the object, made by *itself*.

To consider the first more fully: The observer records with his pencil what he sees or thinks he sees, or (perhaps) what he wishes to see. But just here, what is called by astronomers his "personal equation" comes into play. It is well known in astronomical work that some men can observe with greater accuracy than others; and hence his personal liability to error is measured and the mean of its limit is applied in correction of each man's work. Now this personal equation comes into play in microscopic work: first, in a purely optical sense; second, in the broad field of imagination with preconceived notions and expected appearances; and, third, in the technical skill as a draughtsman which the observer may possess.[1]

Upon the other hand, in the use of the photographic process, the error due to personal equation, although not eliminated, is restricted within comparatively narrow limits, with orthochromatic plates and intelligent manipulation, the lights, shades and colors of the microscopic field ought to be reproduced measurably in their true value. The great drawback is that it is difficult to reproduce more than one plane whereas the draughtsman can continually alter his focus and bring different layers into view. In long exposures, however, this can be done with the photograph by careful manipulation. A certain lack of definiteness of outline is likely also to characterize the photograph, while on the other hand, the personal equation of the observer is likely to emphasize the definition of the particular elements he is studying.

Probably the most satisfactory result now attainable would be to give a photographic view, one drawn by the observer, and one by some independent observer. A comparison of the three would give as good an idea of the subject as can be attained. I have not alluded to the camera lucida, which assists correct drawing, as it is so generally used; and few drawings being made without it, it is a constant factor serving to correct to some extent the error of personal equation. Very truly yours, C. F. Crehore, M.D.

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[1] Let an artist and a photographer attempt to picture a distant [illegible] standing. The former represents it, [illegible] the image of the appearance, which, when magnified, proves to be an ornamental hitching post.

RECORD OF MORTALITY

For the Week ending Saturday, April 1, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from. Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.77	1.80
Chicago	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.52	2.08
Philadelphia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.06	1.38
Brooklyn	[illegible]	[illegible]	[illegible]	11.73	33.58	[illegible]	[illegible]	3.22
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.76
Baltimore	[illegible]	—	—	—	—	—	—	—
Cincinnati	305,000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Cleveland	[illegible]	—	—	—	—	—	—	—
Pittsburg	255,000	[illegible]	[illegible]	[illegible]	21.84	[illegible]	[illegible]	[illegible]
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	9.45	[illegible]	[illegible]	[illegible]
Washington	230,360	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—
Nashville	87,754	[illegible]	[illegible]	[illegible]	20.58	—	[illegible]	—
Charleston	[illegible]	—	—	—	—	—	—	—
Portland	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Worcester	[illegible]	[illegible]	[illegible]	[illegible]	12.12	—	—	—
Lowell	[illegible]	[illegible]	[illegible]	[illegible]	21.56	[illegible]	[illegible]	—
Fall River	[illegible]	[illegible]	[illegible]	[illegible]	17.85	[illegible]	—	7.14
Cambridge	[illegible]	[illegible]	[illegible]	[illegible]	26.30	[illegible]	—	—
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	10.00	—	[illegible]	—
Springfield	[illegible]	[illegible]	[illegible]	—	36.36	—	—	—
Lawrence	45,910	[illegible]	—	[illegible]	—	—	—	[illegible]
New Bedford	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Holyoke	40,099	[illegible]	[illegible]	[illegible]	[illegible]	—	7.14	—
[illegible]	[illegible]	14	[illegible]	[illegible]	[illegible]	—	[illegible]	—
Salem	31,495	[illegible]	[illegible]	[illegible]	15.78	[illegible]	—	—
Haverhill	[illegible]	[illegible]	[illegible]	[illegible]	29.40	[illegible]	—	—
Chelsea	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Malden	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Newton	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Taunton	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Gloucester	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Fitchburg	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Waltham	[illegible]	[illegible]	[illegible]	[illegible]	12.50	—	[illegible]	—
Quincy	[illegible]	[illegible]	[illegible]	11.11	22.22	—	11.11	—
Pittsfield	18,294	[illegible]	[illegible]	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Everett	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Newburyport	14,031	[illegible]	[illegible]	—	—	—	—	—
Amesbury	13,561	[illegible]	[illegible]	—	—	—	—	—

Deaths reported 3,760: under five years of age 1,318; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 490, acute lung diseases [illegible], consumption 295, diphtheria and croup 138, diarrhœal diseases 110, scarlet fever 70, cerebro-spinal meningitis 34, whooping-cough 42, typhoid fever 30, measles 29, erysipelas 17, malarial fever 3, small-pox 3, typhus fever 2.

From cerebro-spinal meningitis New York 15, Chicago 14, Washington [illegible], Worcester [illegible], Philadelphia, Brooklyn and Lynn 2 each, Holyoke and Everett 1 each. From whooping-cough New York 16, Brooklyn 12, Chicago 7, Philadelphia 4, Cincinnati, Pittsburgh and Nashville 1 each. From typhoid fever New York and Chicago 8 each, Pittsburgh 7, Philadelphia 3, Brooklyn 2, Boston and Lawrence 1 each. From measles Chicago 9, New York 6, Pittsburgh 5, Cincinnati 4, Brooklyn 2, Philadelphia, Washington and Somerville 1 each. From erysipelas New York and Chicago 4 each, Boston 3, Brooklyn and Washington 2 each, Cambridge and Lynn 1 each. From small-pox New York 2, Brooklyn 1. From typhus fever New York 2.

METEOROLOGICAL RECORD.

For the week ending April 1, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76	[illegible]	N.E.	N.E.	14	4	O.	C.	
M...27	[illegible]	[illegible]	[illegible]	29	[illegible]	[illegible]	[illegible]	N.W.	E.	8	4	C.	C.	
T...28	30.36	[illegible]	33	[illegible]	50	[illegible]	[illegible]	N.	N.	18	15	C.	O.	
W...29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.W.	4	16	C.	C.	
T...30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	71	S.W.	S.W.	15	12	F.	O.	
F...31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	W.	18	12	C.	C.	
S...1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	W.	12	15	O.	O.	.01
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 1, 1893, TO APRIL 7, 1893.

By direction of the Secretary of War, **Major Augustus A. DeLoffre**, surgeon, will be relieved from duty at Columbus Barracks, Ohio, upon receipt of this order, and will report in person to the commanding officer, Fort Logan, Col., for duty as post surgeon at that station.

The leave of absence granted **Captain Edwin F. Gardner**, assistant surgeon, U. S. A., for seven days, is extended twenty-three days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 8, 1893.

Oliver Diehl, passed assistant surgeon, detached from U. S. S. "Essex."

E. M. Shipp, assistant surgeon, ordered to Naval Hospital, Boston, Mass.

SOCIETY NOTICES.

Massachusetts Medical Society, Suffolk District. The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, April 19th, at 8 o'clock, P. M.

Paper: "The Boston Water-Supply from a Sanitary Standpoint," Desmond Fitzgerald, Esq. The discussion will be opened by Prof. T. M. Drown and Dr. C. F. Folsom.

Henry Jackson, M.D., *Secretary*.

American Medical Association, Section of Neurology and Medical Jurisprudence. — The American Medical Association will meet at Milwaukee, Wisconsin, June 6, 7, 8 and 9, 1893. A preliminary programme of the Section of Neurology and Medical Jurisprudence has been prepared and the meeting promises to be one of great interest. The first session will be held on the afternoon of June 6th. Papers will be accepted for the final programme until May 1st, but not later, as all titles must be sent to the chairman or secretary by this date in order to allow sufficient time for the preparation of the programme for the meeting of the entire Association. It is desired by many of the members of the Section to have a dinner on one of the evenings of the meeting, the subscription to which will be three dollars, if a sufficient number send word of their willingness to subscribe.

Charles K. Mills, M.D., *Chairman*,
1909 Chestnut Street, Philadelphia, Pa.
James G. Kiernan, M.D., *Secretary*,
834 Opera House Block, Chicago, Ill.

THE PAN-AMERICAN MEDICAL CONGRESS.

Section on Diseases of Children.

The organization of this Section is complete and the work of arranging a programme is well advanced. Numerous valuable papers have been promised and the success of the meeting is assured. Physicians interested in diseases of children are cordially invited to attend these meetings which give promise of great interest, both to the specialist and general practitioner. Any American physician desiring to read a paper will please communicate at once with the secretary, who will be pleased to furnish all needed information.

Dr. John M. Keating, *Executive President*,
Colorado Springs, Colorado.
Dr. F. M. Crandall, *English Speaking Secretary*,
No. 113 W. 95th Street, New York, N. Y.
Dr. Damaso Laine, *Spanish Speaking Secretary*,
Media, Pa.

RECENT DEATHS.

Henry M. Harlow, M.D., of Augusta, Me., died April 5th, aged seventy-two years. He was a graduate of the Berkshire Medical School, and for thirty-two years superintendent of the Maine Insane Hospital. He retired in 1883.

Peter Paul Gilmartin, M.D. (Harv., 1865,) of Detroit, died April 1st, aged fifty-four years. He left the Harvard Medical School in 1862, and went to the war, serving as surgeon of the monitor *Osage*. Since 1866 he has been at Detroit, and was at one time professor of pathology in the Detroit Medical College and surgeon to St. Mary's Hospital, and city physician.

John C. G. Happersett, M.D., major and surgeon in the United States Army, retired, died April 7th. He entered the army as assistant surgeon in 1861. He was brevetted major in 1865, for faithful and meritorious service during the war, and captain assistant surgeon in 1866. His appointment as major and surgeon was made in 1876.

William Seymour, M.D., of Troy, N. Y., died April 7th, aged sixty-eight years.

Albert P. Weeks, M.D., M.M.S.S., of Chelsea, died April 7th, aged fifty-four years. He graduated from the Bellevue Medical College in 1868, and since 1872 has practised in Chelsea.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Sixtieth Year of the Boston Lying-in Hospital, 1892.

The Medical Lore of Shakespeare. By R. Newton Hawley, M.D. Reprint. 1892.

Seventy-ninth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Hospital, 1892.

Scab Healing and its Application in General Surgery. By J. Delpratt Harris, M.R.C.S. London: H. K. Lewis. 1893.

Transactions of the Medical Association of the State of Missouri, at its Thirty-fifth Annual Session, held at Pertle Springs, Mo., May 17, 1892.

Ventilation and Heating. By John S. Billings, A.M., M.D., LL.D., D.C.L., Surgeon United States Army, etc. New York: The Engineering Record. 1893.

The Value of Javal's Ophthalmometer for the Correction of Astigmatism where Marked Amblyopia is Present. By A. Britton Deynard, M.D. Reprint. 1892.

Personal Recollections of the Late Dr. Benjamin W. Dudley, of Lexington, Ky., and of his Surgical Methods and Work. By Bedford Brown, M.D., Alexandria, Va. 1892.

Tumor of the Hard Palate; Acute Appendicites; Perinephritic Abscess; Clinical Lecture delivered at the Jefferson Medical College Hospital. By W. W. Keen, M.D., LL.D. Reprint.

Practical Experiments in the Treatment of Cholera in St. Petersburg, Russia, and Hamburg, Germany, in the Epidemic of 1892. By Elmer Lee, A.M., M.D., Ph.B., Chicago, Ill. Reprint. 1892.

Atlas of Clinical Medicine. By Byron Bramwell, M.D., F.R.C.P., F.R.S., assistant physician to the Edinburgh Royal Infirmary, etc. Vol. II. Part II. Edinburgh: T. & A. Constable. 1893.

Original Articles.

CASES OF HEAT-STROKE OBSERVED IN THE SUMMER OF 1892.[1]

BY WM. W. GANNETT, M.D.,
Visiting Physician, Massachusetts General Hospital.

The unusual heat at three periods in June, July and August of last summer led to a number of cases of heat-stroke. Those here reported occurred in the services of Dr. Whittier, Dr. Cutler and the writer, at the Massachusetts General Hospital.

Through the kindness of Drs. Whittier and Cutler their cases are given with those of the writer.

Two of the cases have been admirably reported in detail by Dr. E. C. Stowell in the *Boston Medical and Surgical Journal* for November 10, 1892. A brief *résumé* of these cases is included in this series.

Extreme heat may act upon man in one of two ways, either in producing what is known as heat-exhaustion, or causing what, for the lack of a better name, has been called heat-stroke.

The contrast between the two conditions, when typical, is very striking. In heat-exhaustion the patient is feeble, pale; the skin is cold and clammy; the pulse scarcely perceptible; respiration shallow and quickened. Occasionally there is fainting, more commonly the mind is clear. The temperature is at or below the normal. The picture is that of marked depression of the vital powers. It may well be due, as suggested by H. C. Wood, to a vaso-motor paresis, with determination of blood to the abdominal organs.

In heat-stroke, on the contrary, the symptoms are far more active. The onset may be very sudden without prodromal symptoms, the patient being struck down as in apoplexy. More commonly there are earlier symptoms of pain or discomfort in the head, or dizziness; oppression in breathing; nausea; sinking sensation in the epigastrium; disturbances in the color sense, objects appearing colored red, blue or otherwise. Seen at the time of the stroke, the patient will be found, in most cases, to be wholly unconscious; though occasionally he can be partially aroused. The skin is very hot, and usually dry, though it may be moist. The pupils are in most cases contracted and do not react. The respiration is noisy, especially the expiration, which is sighing or groaning or stertorous. The pulse varies, sometimes full and regular; again, barely perceptible. There is often muscular twitching and not infrequently muscular spasm, the arms being flexed and crossed over the chest without resting upon it, the legs being drawn up. A maculo-papular eruption is now and then seen.

Death may result almost immediately in the severe forms, or it may be delayed and occur later from respiratory paralysis or circulatory disturbance, usually with convulsions. If recovery occurs, the temperature falls, the pupils relax, and the patient regains consciousness. After the temperature has returned to normal there is often a relapse with rise in temperature. If recovery occurs, the individual often has cerebral distress or pain when the weather is only moderately warm. In some cases persistent headache is present. Recurrence of heat-stroke is likely.

In the study of heat-stroke the questions which naturally suggest themselves are:

What is the nature of the process?

What are the conditions under which it occurs?

Why are some affected while others in the same environment escape?

The literature of the subject has kept pace with the evolution of physiology and pathology.

The older ideas are too crude for consideration.

At the present time it seems fair to assume that too great heat in the body is the cause of the symptoms. But what is the cause of the too great heat? The fact of the greatly increased temperature of the body, as indicated by the thermometer, shows that there is either a greater heat-production with a normal loss by radiation; or that the dissipation of heat is less than normal, the production remaining the same; or that there is a combination of the two conditions. By either of the three alternatives the bodily temperature will rise. Farther than this it is hardly possible to go at present, while the subject of heat-production, heat-dissipation and the heat-regulating power is so imperfectly understood.

The theory of Tscheschichin of a heat-centre in or above the pons, which H. C. Wood considers he has proven, while probable, is not universally accepted; the question also of a heat-producing or heat-regulating mechanism in the medulla or below, is also not determined; and until this matter is better understood it seems to the writer that one should be content with the idea that too great accumulation of heat is the condition, resulting from some disturbance in the heat-regulating mechanism and leading in turn to circulatory and respiratory disturbances.

The post-mortem appearances give practically no help in deciding as to the nature of the affection; for beyond general engorgement with blood and occasionally minute hæmorrhages the organs show nothing.

As to predisposing causes, there are several to be considered. Foreigners from cool climates are more likely to be affected. In the writer's series all but one were foreigners. This fact, often noted, has been decried by some on the ground that foreigners do the work likely to expose them; but natives are as much exposed, and are not so frequently affected.

Again, the fatigue consequent upon prolonged exertion of the muscular or nervous symptoms is undoubtedly a factor; especially is this apparent in soldiers after long marches.

The depression due to several days of continued heat also comes under this heading.

The question of the previous abuse of alcohol is one about which there is a wide difference of opinion. Many think it an important predisposing cause; but the English physicians in India, whose experience in heat-stroke is considerable, think it unimportant. In the writer's series, so far as the habits could be learned, it was unimportant.

The abuse of ice-water, while undoubtedly tending to disturb the gastro-intestinal tract and so interfere with the nutrition of the individual, has not been shown, so far as the writer is aware, to favor heat-stroke.

As to the cause of the stroke, it will appear self-evident to say that it is due to exposure to excessive heat.

Exposure to the direct rays of the sun is not necessary, nor does it always occur in the day-time. Many cases have been reported, especially in India, as occurring in the night.

High temperature with much moisture in the air is far more likely to lead to heat-stroke than an even higher temperature with a dry air.

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[1] Read before the Boston Society for Medical Improvement, January 9, 1893.

Those working in confined moist air, as in laundries and in certain rooms in sugar-refineries, are more likely to be affected than are those exposed to dry heat. In the case of sugar-refineries, men working in what are known as bag-rooms, where filtering bags are washed in a steaming atmosphere of about 90°, suffer far more from heat than do those working in wagon-rooms where, although the temperature is never allowed to fall below 120°, the air is very dry.

In connection with the cases to be reported, the writer had the previous histories taken where it was possible, in the hope that something as to causative relation might be learned.

During the afternoon the temperature rose to 102.8°; but a bath at 70° for thirty minutes reduced it to 100.6°. At 11 p. m., eleven hours after the seizure, he became clear in his mind; went to sleep; slept well; and on the second day after entrance, left the hospital well. A month later he wrote that he was perfectly well.

The case is remarkable in having recovered after so high a temperature — 110° at the police-station, 107.8° on entrance to hospital.

Case II. T. C., laborer, age twenty-four. Native of Ireland; living in East Cambridge. Previous habits good. Said by the police-officer who brought him, to have been working in a sewer. He was seen staggering on the railroad track, and fell before being reached.

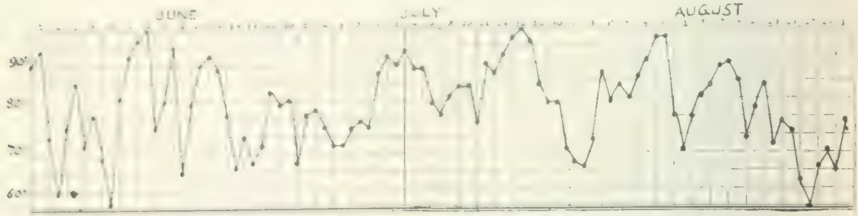

Chart showing the maximum daily temperatures during June, July and August, 1892. From figures in the official records of the United States Weather Bureau in Boston.

Date.	Temp.	Cases.	Recoveries.	Mean Humid.	Date.	Temp.	Cases.	Recoveries.	Mean Humid.
June 12.	[illegible]	0	0	62	July 24.	90	0	..	60 5
13.	94	0	0	59	25.	94	0	..	72.5
14.	[illegible]	1	1	65.5	26.	96	4	3	61
15.	74	1	1	54.5	27.	93	3	1	47
16.	[illegible]	0	..	62.5	Aug. 10.	94	2	1	65.5
17.	[illegible]	1	1	70.87	11.	94	0	..	81

Table showing the maximum temperature, mean humidity, number of cases of heat-stroke and recoveries during the three hot periods in the summer of 1892. Temperature and humidity from the records of the United States Weather Bureau in Boston.

Case I. A. P. G., age thirty-two, cook's assistant. Native of Scotland; lives in Boston. Previous habits excellent. Had been in Boston four months, working in a basement restaurant in Court Street.

For two days previous to entrance to hospital he had been dizzy. On the morning of June 14, 1892, dizziness again came over him and he tried to fight it off. At noon he left the hot kitchen to get a breath of air. He remembered walking on Tremont Street, but nothing more. He fell unconscious in front of the Tremont House, two blocks from where he worked. He was taken to the station-house by the police where it was found that his temperature was 110°. Ice was applied to his head, and he was taken at once to the hospital, reaching there at 1 o'clock. He was completely unconscious; skin hot and dry. Pupils moderately contracted, reacted to light. Rectal temperature 107.8°, pulse 110, respiration easy. After rubbing with ice for fifteen minutes the pulse went up to 160, weak, and the expiration groaning; temperature 105.5°. Head spasmodically turned to right. Atropia was given (one-sixtieth). Half an hour later, during which the rubbing with ice was continued, the temperature fell to 99°. Muscular spasm increased; the arms bent and rigidly held across the chest; the legs drawn up and flexed on abdomen. Pulse became very weak. Respiration moaning. A sixtieth of strychnia given subcutaneously. For a few moments he was quiet, and then followed a severe spasm of muscles and of respiration. Twenty minutes later he became quiet again.

Patient was received at the hospital at 4.15 p. m., June 15, 1892, in a wholly unconscious condition. Skin hot and dry. Pupils contracted, not reacting. Temperature 115°, highest thermometer would register; pulse irregular in force and rhythm; heart-beat 146. Rubbed all over with ice by three, and at times four, men for twenty-five minutes. Temperature then 104.6°; pulse irregular and much weaker. One-sixtieth of a grain of atropia was given. Ten minutes later temperature was 100°, pulse 132; not improved in strength. One-sixtieth of strychnia was now given. Arms in spasm, folded across chest. The rubbing with ice was stopped after an hour, the temperature having fallen to 90.3°, the pulse remaining the same. One-sixtieth of strychnia was given. As he was quite dusky, oxygen was given for ten minutes, followed by improvement in respiration. The legs now became partially drawn upon abdomen. Three hours after entrance he became delirious, and fought violently. The head being hot and the temperature 100.2°, he was put into a bath at 70° for fifteen minutes. At 11 p. m., seven hours after entrance, he became rational, and soon went to sleep. Recovery was complete, patient leaving the hospital on the second day after entrance.

Case III. M. C., laborer, age twenty-one, single. Born in Ireland; living in Boston. Not a drinking man. Had been working only one day in gravel-pits at Cottage Farm. Brought to hospital in ambulance at 2.30 P. M., June 17th. Stupid, but could be aroused. Skin hot. Rectal temperature 103.8° ; pulse 104 ; respiration 24. Pupils react. Head rubbed with ice for half an hour, and then a bath of 70° given for five minutes. Temperature then 103.6° ; pulse 80 ; respiration 14. For an hour the head was rubbed with ice. Temperature then was 103.8° ; pulse 80 ; respiration 20. The whole body was then rubbed with ice two or three times. Temperature then was 98.3° ; pulse 80 ; respiration 20. The pulse was of good strength throughout. Urine, normal color ; acid ; 1,015 ; no albumen ; no sugar. At 3.40 he was in condition to be sent to the ward. The next day he was clear in his mind, with normal temperature, good appetite, no headache.

He was discharged on the 20th, well.

Case IV. F. M., ice-man, age twenty-seven. Born in Ireland ; living in Boston. Patient brought to hospital at 2 P. M., July 26th, having been picked up unconscious in the street.

Well developed and well nourished. Skin very hot and dry. Face flushed. Pupils contracted. Respiration short and jerky. Slight twitching of muscles of arms and face. Temperature 115° ; pulse regular and of good strength.

Ice was applied to the head and body, reducing the temperature at 3 P. M. (one hour after entrance) to 101°. Pulse became poor ; ice was discontinued, and brandy given subcutaneously. At 3.30 P. M. the convulsive movements became more marked, clonic in character, and involving the whole body. Also several involuntary dejections. Ice-bag applied to head. Brandy given subcutaneously every fifteen minutes. The convulsions became so extreme that he was given a few whiffs of chloroform every half-hour, which controlled them wholly.

Patient did not regain consciousness. Pulse failed rapidly. Respiration became stertorous. Temperature rose to 105°, and patient died at 12.40 A. M. on Wednesday, eleven hours after entrance. Urine pale ; acid ; specific gravity 1,020 ; trace of albumen ; no sugar. The sediment contained a few free blood-corpuscles ; hyaline and fine-granular casts ; a few casts with blood-corpuscles adherent ; uric-acid crystals.

Case V. Coal-heaver, age thirty-five. Born in Austria. Patient was brought to hospital at 4 P. M., July 26th, having been picked up unconscious.

At entrance he was partially conscious. Skin hot and moist. Pupils contracted. Twitching of arms and legs. Respiration quiet and slow. Temperature by rectum 102.5°

Application of ice to head and body reduced the temperature to 99°. Patient then began to shiver, and goose-flesh appeared ; so was given an ounce of brandy. Pulse became full and strong. Slept till midnight, when he became restless and got out of bed, but was quieted by one-eighth of a grain of morphia.

Next day he was comfortable, and was discharged well. Urine acid ; specific gravity 1,017 ; slight trace of albumen ; no sugar. Sediment contained fresh blood, hyaline and granular casts, with fresh blood adherent.

Case VI. J. S., laborer, age forty-four. Native of Ireland ; living in Boston. Brought to the hospital at 5.30 P. M., July 26th, having been found in an unconscious condition in a stable where he had been mixing mortar.

At entrance, patient was stupid, but could answer questions. He had been faint during the afternoon, and had drank large quantities of water. About 5 o'clock he had a feeling as if struck on the back of the head with a brick, and remembered nothing after that.

Patient was well developed and nourished. Pupils contracted. Skin very hot and moist. Maculo-papular eruption over whole of body. Temperature, by rectum, 107° ; respiration quiet. No twitching.

Application of ice reduced the temperature in an hour to 100°. After this ice-bags to the head alone were used. The pulse was good. He became fully conscious. Slept all that night ; and the next day was practically well, there being no headache or dizziness

The following history of his antecedents was obtained. Family history negative. Had been in the habit of taking two or three glasses of whiskey daily. Eleven years ago he had a sunstroke, and was laid up for two weeks, and did not regain strength for three months. Five years ago he had a sunstroke, and was laid up three weeks. Ever since then he has been easily affected by the heat, and more or less prostrated during hot weather.

Two days before present attack, the intense heat caused *malaise*, anorexia and headache. On day before attack, he felt too weak to work. The day of the attack, though not feeling better, he went to work. He felt very hot, but did not sweat. He worked indoors, and drank a large quantity of ice-water during the morning. He ate a moderate dinner and drank one glass of brandy.

He became constantly weaker and more miserable, with headache and blurring of the vision. At 5 P. M. he became dizzy and fell unconscious. Urine very pale ; acid ; specific gravity, 1,005 ; slight trace of albumen ; nothing abnormal found in the sediment.

Case VII. J. N., stableman, age thirty-four. Native of Ireland ; living in Boston.

Sent to hospital by Dr. G. G. Sears, July 26th. He had been working in a stable, and had drank during the day a large amount of ice-water. In the afternoon he felt dizzy and faint, and at 5 o'clock became suddenly unconscious. Temperature at the time of attack not known.

He was treated with the ice-pack by Dr. Sears, and consciousness returned in about an hour. He was then taken to the hospital. At entrance the skin was hot and moist. Maculo-papular eruption on the body. No twitching of the muscles. Pupils moderately dilated. Ice was applied, and the temperature soon fell to normal. He soon fell asleep, and slept quietly. The next day, although weak, he was practically well ; wholly free from headache.

The history of the patient, previous to the attack, is as follows: He had always been well, and had not abused alcohol. The day before the attack, as well as on the early morning of the attack, he had felt well, though sweating a great deal. At 7 A. M. he drank a glass of milk, and immediately vomited. After this he felt weak and miserable, but kept at work in the stable, not exposed to the sun. He sweat but little on the day of the attack, though he drank a large amount of ice-water during the morning, and ate a good dinner. At two o'clock he took two glasses of whiskey to "brace him up." Later in the afternoon he became dizzy, and fell, unconscious, at 5 P. M. Bowels had moved freely in the morning. Urine acid ; 1,020 ; slight trace of albumen ; no sugar. Sediment showed uric-acid crystals and an occasional hyaline cast.

Case VIII. H. P., teamster, age thirty-three. Born in Maine; living in Boston.

Patient brought to the hospital at 9 a. m., July 27th, unconscious, having lost consciousness half an hour previous to entrance.

He was well-developed and nourished. Skin cool and dry. Pupils moderately dilated, not reacting. Respiration shallow and jerky. Temperature, by rectum, 100.2°. He was put to bed, with ice at the head. In half an hour breathing became quieter, and he partially regained consciousness. Temperature 99°, by axilla, though the skin felt hot and dry. At 11 a. m. he could talk coherently. There was headache for two days, when he left the hospital well.

The past history of this case is unimportant. His habits were good. The day before the attack he worked, although much debilitated by the heat. He had eaten but little for two or three days. In his work he is much exposed to the sun. On the morning of the attack, after going to work, he became very hot and weak, but did not sweat. He drank much ice-water and one glass of whiskey. He became dizzy, blind; and lost consciousness at 8.30 a. m. Urine alkaline; specific gravity 1,028; trace of albumen; no sugar. In the sediment were blood corpuscles and a few hyaline and granular casts; uric-acid crystals; oxalate of lime and triple-phosphate crystals.

Case IX. P. D., harness-cleaner in a stable, doing night-work; fifty years old; Irish.

Brought to the hospital at 7 a. m., Wednesday, July 27th. Said to have been feeling mean all night, and to have drank large quantities of ice-water. Fell unconscious in the stable at 6.30 a. m.

At entrance he was unconscious. Skin dry. Pupils contracted, do not react. Respiration labored; pulse of fair strength; temperature 109°. Rubbed with ice all over, except cardiac area. At 8 o'clock, half an hour later, the temperature was still high, 108°; pulse weaker. One-sixtieth of strychnia, subcutaneously, stimulated circulation for a short time; then the strychnia was repeated, and one-sixtieth atropia given for the pulse before 9.30. The rubbing with ice was kept up continuously until temperature had fallen to 101°. Then put on a dry bed. Circulation poor, lips cyanosed; groaning expiration. Pupils somewhat dilated, but do not react. Answers to name when loudly called. In about fifteen minutes, although the skin was cool and the head was again rubbed with ice, slight convulsions came on which increased in severity; he could be aroused; the cyanosis became marked; and he died at 10 a. m., three and a half hours after the seizure.

Case X. J. C., age forty-five, freight-handler. Native of Ireland; living in South Boston.

Brought to hospital in police ambulance at 7 p. m., July 27th. Said to have fallen on Albany pier in South Boston at 6 p. m. Nothing could be learned of his earlier history or habits. A large, well-developed man; absolutely unconscious; labored respiration; tracheal râles; eyes open and glazed; rectal temperature 110°; pulseless. He was given at once one-sixtieth of a grain of strychnia subcutaneously, and was rubbed with ice all over. Pulse soon reacted, but was thready and weak. Twenty minutes later, temperature, by rectum, 109°; pulse somewhat fuller. The head was packed in ice, and a sixtieth of atropia given. At 9.30, temperature 99.4°; pulse weak, requiring another sixtieth of atropia; respiration labored. At 10, temperature 96°, by rectum; pulse very weak. Convulsions came on; and he died at 11 p. m., without having regained consciousness, five hours after siezure.

Case XI. P. D., laborer, age thirty. Born in Ireland; living in Boston. Patient was brought to the hospital by the police, August 10th, having fallen unconscious while stoking boilers in a large slaughtering establishment.

At entrance he was unconscious, cyanosed. Pupils small, not reacting. Skin hot and dry. Pulse rapid, but full; difficult expiratory respiration; temperature, by rectum, 110.1°. Patient was at once stripped, and the whole body, except over the heart, rubbed with ice. After half an hour the temperature fell to 108°. The pulse was smaller and weaker. One sixtieth of a grain of strychnia was given subcutaneously. In another half-hour the temperature was 105°. The pupils dilated; respiration became slower and more noisy; goose-flesh; occasional motion of the arms; vomiting and involuntary dejections.

A half-hour later temperature was 100.2°; pulse of fair strength, expiration very noisy; cyanosis increasing: occasional contractions of arms and legs. The ice was removed, and patient put in a dry bed, and oxygen, in a steady stream, given, which relieved the dyspnœa and cyanosis.

Temperature again arose to 102.8°, and the skin became hot and dry. Ice-bags were applied to the head; the forehead was rubbed with ice; and oxygen was given constantly. At 8 p. m., respiration was normal, though consciousness had not returned. At 11 p. m., nine hours after entrance, consciousness returned, though he was somewhat dazed. Urine acid; slight trace of albumen; no sugar; in the sediment were hyaline and granular casts; no blood.

The patient made a good convalescence, with a temperature of 101° the next morning; 100° the next evening; and then a gradual fall to normal. It was afterward learned that the patient had, four weeks previously, been discharged from the Worcester Insane Asylum, having been cured of what is stated in the record to have been alcoholic insanity. He had formerly been a hard drinker.

Case XII. An unknown man, a coal-shoveller, aged about forty-eight, was brought to the hospital by the police at 4 p. m., August 10th. Said to have fallen on the street. He was unconscious. Skin hot and dry. Temperature 109.1°. Pulse not to be felt at the wrist. Heart-sounds very feeble. Respiration gasping, with rattling expiration. One-sixtieth of strychnia, and oxygen in a constant stream were given.

He was rubbed with ice, the head being rubbed with care; and ice was packed about the neck. The respiration improved, and the pulse could be felt at the wrist, though weak. One-sixtieth of atropia was now given. Temperature fell to 101°, and the general condition improved; so the rubbing with ice, except of the head, was discontinued, and the oxygen kept up. Soon after, the expiratory dyspnœa increased. At 7 p. m. he had a slight convulsion, which was followed by severer ones; the pulse failed, and he died at 8 p. m., without having regained consciousness, four hours after entrance to hospital.

In this series of twelve cases there were four deaths; a mortality of one-third or thirty-three and a third per cent.

In the fatal cases death resulted in three and one-half hours; four hours; five hours; eleven hours.

Eleven were foreign-born; one was a native of Maine. Two worked where there was artificial heat; one in a basement restaurant-kitchen, the other in a boiler-room.

Only two are known to have been exposed to the sun's rays.

Two were coal-heavers; but whether working in the hold of a vessel or on a staging is not known. The temperatures in the fatal cases were 115°, 110°, 109.1°, 109°; in the recoveries, 115°, 110.1°, 110°, 107°, 103.8°, 103° (in axilla), 102.5°, 100.2°.

In the fatal cases the lowest temperatures were: in the case of 115°, 101°, rising to 105° before death; in the case of 110°, lowest 96°, but ice stopped before it had reached 99.4°; in the case of 109.1°, lowest 101°; in the case of 109°, lowest was 101°.

In the fatal cases there was no return to consciousness. In the recoveries consciousness returned in about an hour in four cases (the term "about" is used because the transition was so gradual); in three hours; in seven hours; in nine hours; and in eleven hours.

In four cases there was a secondary rise of temperature, one of the cases ending fatally.

In the four fatal cases there were severe convulsions.

In the eight cases with recovery, two showed spasmodic contractions of muscles, and two muscular twitching.

In six of the cases the skin was very dry at the time of entrance; in three cases it was moist; and in the remaining three cases no record was made. The dry condition of the skin is of interest, as it shows that one important means of heat-dissipation, through sweating and evaporation, was absent.

In the three cases in which a detailed history of the patient's condition previous to the stroke was obtained, it was found that in all those there had been no sweating for a day previous to the attack, although earlier there had been sweating.

The urine was obtained in five of the cases. In one it was normal. In four it contained a trace of albumen; and in three of these four cases the sediment contained hyaline and granular casts and a few blood-corpuscles. One of the fatal cases was among these. In the other three fatal cases no urine was obtained. In the writer's opinion, this condition of the urine was the result of the congestion of the kidney, with a certain amount of granular degeneration.

In regard to prognosis, it may be said that the deeper the coma, the higher the temperature, the greater the respiratory and circulatory disturbance the greater the nervous symptoms of twitching, spasm or convulsions, the worse is the outlook. *Per contra*, the lesser the intensity of the symptoms, the better the chance of recovery. Partial return to consciousness, relaxation of the pupil, lowering of the temperature and quieting of the respiration, are encouraging signs. Fall in the temperature, with persistent deep coma, is an unfavorable sign.

Treatment: as the symptoms are directly or indirectly the result of the increased heat in the body, the first and foremost indication is the reduction of the temperature.

No time should be lost. The patient should be stripped, laid upon a table, if one is at hand, and rubbed with ice over the entire body. If ice is not to be obtained, he should be placed in a bath as low as 70°, and the water cooled still more, if cooler water can be obtained. Goose-flesh, shivering, or fall in the temperature to nearly normal, are the indications for stopping the ice. The patient should then be put on a dry bed; and if there are signs of circulatory disturbance, a sixtieth or fiftieth of strychnia should be given subcutaneously, and repeated if necessary. If there is much respiratory disturbance, as manifested by expiratory dyspnœa, and oxygen can be obtained, it should be given.

Twitching or spasms or slight convulsive movements are often controlled by a subcutaneous injection of morphia; but if there are severe convulsions, a few whiffs of chloroform will be found most satisfactory.

The temperature should be carefully watched for some hours, so that, in case of a secondary rise, a bath may be given or the ice applied. In general, it is desirable to keep ice-bags to the patient's head for several hours after he has been put to bed.

After recovery the patient should be warned of the danger of future exposure to high temperature.

Cases have been reported in which for a long period after heat-stroke, headache and epileptic convulsions have occurred. These symptoms may, of course, be due to a meningitis or some other cerebral disturbance caused by the heat-stroke; but inasmuch as the reported cases have done well under iodide of potash, and not improved under other means, the writer cannot but feel that there may have been a syphilitic element in the cases.

In the use of antipyretics, other than cold, the writer has had no experience. Antipyrine is recommended by so high an authority as H. C. Wood; but when one considers the depressing effect upon the heart of this drug, it would seem desirable to be cautious in its administration. If cold bathing or ice were inaccessible, of course it should be used.

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EXPLORATORY OPENING OF THE TYMPANUM AND SUBSEQUENT OPERATIONS IN THE MIDDLE EAR, WITHOUT GENERAL ANÆSTHESIA.

BY CLARENCE J. BLAKE, M.D., BOSTON.

In view of recent advances in the surgery of the middle ear[1] and especially in those cases of chronic, non-suppurative middle-ear disease where operation is undertaken for the improvement of hearing and in which the exact determination of the character and location in the sound-transmitting apparatus of the obstacles to the passage of the sound-wave is a matter of difficulty, the question of some method of exploratory operation which shall avail of the intelligent participation of the patient, has become a matter of considerable importance.

In a series of experiments on the progressive growth of the dermoid coat of the membrana tympani made several years since,[2] it was found that the movement outward from the centre of the membrane at the tip of the malleus toward the superior and posterior periphery was slowest in the inferior third of the posterior

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[1] [illegible]

[2] [illegible]

segment (A), more rapid in the middle third (B), and most rapid in the upper third (C) and that the rate of movement, as shown by small pieces of paper pasted upon the membrane, bore a proportionate relation to the corresponding degree of vascularity of the three sections mentioned, while a recent series of tactile examinations shows that the sensitiveness of the sections of the posterior segment of the membrana tympani have the same relative correspondence, and therefore, that an incision, begun opposite the round window, causes increasing pain, as it is extended upward and forward along the periphery.

A part of this progressive increase in pain can, of course, be accounted for psychologically; but it is evident that the edges of a small and comparatively painless cut can, by affording access to the mucous membrane forming the inner coat of the membrana tympani, be availed of for purposes of anæsthetization by cocaine, and that the cut can be successfully continued under the same influence and with comparatively little discomfort.

Tactile investigations as to the comparative sensitiveness of the different portions of the tympanic cavity also show its lining membrane and intrinsic structures, with exception of the superior and posterior portions — fornix tympani and aditus ad antrum mastoidum — to be comparatively insensitive, especially in the line of the sound-transmitting apparatus of the middle ear.

Operations within the middle ear, therefore, except such as include interference with the membrana tympani and invasion of the upper portion of the tympanic cavity may, in the great majority of cases, with proper care, be conducted not only without general, but also without local, anæsthesia, and in the cases therefore of chronic non-suppurative disease of the middle ear with intact membrana tympani, for which this operation of exploratory tympanotomy is proposed, when the sensitive membrana tympani has once been passed, there is opened to the observer an aseptic and comparatively insensitive cavity.

A review of the following cases will perhaps best explain the purpose and procedure in a method of operation, which it is to be hoped will prove of value, not only for diagnostic, but also for operative, purposes. In all of them the operation was preceded by the thorough cleansing of the external auditory canal and of the instruments appropriate to the opening of an aseptic cavity, and the same precautions as those already mentioned in papers on the operation of stapedectomy, were observed.

Miss C. J., forty-three years of age, was first seen March 14th. Both membranæ tympani were much thickened and indrawn as the result of a chronic, progressive, catarrhal inflammation of the middle ear. The hearing in both ears was so far impaired that a conversation-tube was used; and in the right ear there was no hearing aerially for the Politzer's accumeter, for the tuning-fork aerially (512 v. s., 65 seconds' duration), and but slight perception by bone conduction. The Galton whistle was not heard in the right ear, except in the lower fifth of its register, and then only indistinctly, and there was annoying circulatory tinnitus. In view of the uncertainty of success in any radical operation on account of the long continuance of the disease and the changes which had evidently taken place in the middle ear, it was decided to do an exploratory tympanotomy in the right ear.

A preliminary incision two millimetres in length was made close to the posterior periphery, opposite the round window, and to this cut a two-per-cent. solution of cocaine was applied on a cotton tampon. One minute later the cut was continued into the second region of sensitiveness and the cocaine again applied, and after another interval of waiting the incision was continued upward and forward to a point opposite the centre of the posterior ligament of the prosessus brevis, where it was met with a cut made from below upward along the posterior border of the manubrium mallei, the flap thus formed falling outward and affording a clear view of the parts beneath.

Tests of the hearing which were now made showed a slight improvement, and gave evidence of an unexpected degree of mobility of the stapes, while gentle traction on the malleus by means of a blunt hook showed a fixation of that bone in which a firm contraction of the musculus tensor tympani apparently played an important part.

A partial tenotomy of this tendon was therefore done, with comparatively little discomfort to the patient and with the effect of permitting the mobilization of the malleus, which was accompanied by a slight further improvement in hearing and an entire cessation of the tinnitus aurium. As the operation had effected its purpose so far as the demands of the patient were concerned, and as it had caused so little discomfort comparatively, that there was no dread of its repetition at a later day, the next step was to provide for the speedy healing of the membrana tympani, and this was accomplished by the application of a paper dressing similar to that used for closure of perforations of the membrana tympani. A paper disc moistened in corrosive solution was carried into the ear, under good illumination, on the point of a cotton-tipped probe, and brought in contact with the outer surface of the dependent flap already mentioned; a few seconds' contact was sufficient to insure its firm adhesion, when it was pushed upward, carrying the flap with it, into contact with the superior periphery of the membrane and inner end of the canal. This dressing remained in position three days, at the end of which time the cut edges of the membrana tympani had firmly united.

The tinnitus returned in a slight degree on the day following the operation, but gave no inconvenience, and the hearing by means of the conversation-tube very nearly equalled that in the better ear.

In the second case, Mrs. J. F., sixty years of age, an exploratory operation only was proposed because of the long continuance of a chronic catarrhal inflammation and the possibility, as had been shown in many cases of stapedectomy undertaken under similar conditions, of bony anchylosis of the stapes.

The cut in the membrana tympani was made under the same conditions and with even less discomfort than in the previous case.

At its conclusion tactile examination by means of the blunt hook and probe showed a moderate degree of fixation of the stapes, which was, however, easily overcome by lateral mobilization of the incus and stapes and by gentle traction upon the latter, all of which manipulations were carried out without discomfort to the patient and with no other anæsthesia than that of the application of a two-per-cent. solution of cocaine made to the cut edges of the membrana before the completion of the incision; care was, of course, taken, however, that the shaft of the hook and probe did not, in their manipulations of the middle ear. touch the edges in the opening of the membrana tympani. The improvement in hearing at this stage was sufficient to warrant a conclusion of the operation and the application of the paper dressing, after which the hearing (which before operation had been for the Politzer's acoumeter four inches, and for the tuning-fork aerially fifteen sixty-fifths) had more than doubled. A week later the opening in the membrana tympani had closed, and the gain in hearing remained.

Mr. D. V. D., forty-three years of age, had in addition to a gradual decrease in hearing in the right ear to an extent which made it practically useless, severe attacks of vertigo occurring at irregular intervals, especially during the six months preceding his first visit and slight circulatory tinnitus. The vertiginous attacks had gradually become more protracted until at the time of the first examination, February 22d, there was persistent dizziness; the right membrana tympani was transparent and not retracted. He was able to hear a watch, which should have been heard at the distance of 180 inches, on contact with the ear only; the voice in a low tone was heard at two twenty-fifths of the normal distance only, the tuning fork aerially was heard 65 seconds, and by bone conduction 30 seconds. Following the injection of a two-per-cent. solution of cocaine through the catheter the usual incision was made with additional applications of cocaine to the cut edges, and the hearing when tested was found to be the same for the watch and the voice as before the opening through the membrana tympani, but changed for the tuning-fork, being 45 seconds both by aerial and bone conduction.

The incudo-stapedial joint, which was freely exposed, was thoroughly mobilized, not only without pain or discomfort to the patient, but with a certain sense of relief and with some improvement in hearing for the voice and tuning-fork, which latter was now heard aerially 65 seconds and by bone conduction 45 seconds. The edges of the membrana tympani were then approximated and held in place by the paper dressing; anæsthesia was perfect during the operation, and no pain was felt after the first incision of the membrana tympani to which the cocaine was applied in the same manner as in other similar cases. At the close of the operation the patient heard the watch at the distance of one inch from the ear, four days later at a distance of four inches, the dressing remaining undisturbed, there being no evidence of inflammatory process other than that incident to the healing of the membrana tympani, and there having been no vertigo since the operation.

The two following cases are selected as evidence of the feasibility of an exploratory operation under the anæsthetic conditions above mentioned in unfavorable subjects as both of the patients were nervously apprehensive women.

In the first case, Mrs. F. K., forty years of age, the operation was preceded by an injection of a two-per-cent. solution of cocaine through the catheter. The usual incision in the membrana tympani was made with the additional application of cocaine solution of the same strength to the cut edges, and at its completion the patient had an hysterical attack, followed by vomiting. The stapes was seen plainly through the opening, and on tactile examination was apparently firmly fixed; the descending process of the incus was also fixed by adhesions, but was movable. After these adhesions had been cut and the articulation of the stapes severed, the stapedius muscle was cut, the blunt hook engaged in the stapes and firm traction made; but the bone was found to be immovable, and traction was not carried to the point of fracture of the crura. There was no improvement in the hearing from the operation, but the vertigo and tinnitus were found to be decreased. All of the manipulations within the middle ear were well borne notwithstanding the generally unfavorable condition of the patient.

In the case of Miss E. T., fifty years of age, no cocaine was injected through the Eustachian tube, and the two-per-cent. solution was used only as a local application after the first part of the incision. The anæsthesia was apparently good and the manipulations within the middle ear (which included division of the incudo-stapedial articulation and of the stapedius muscle, and traction upon a firmly anchylosed stapes) were conducted without pain. The paper dressing was applied and the wound in the membrana tympani was apparently healed at the end of three days. At the end of two weeks there was no evidence in the appearance of the membrana tympani that it had been incised.

Experience in these and similar cases would seem to prove —

(1) That general anæsthesia is not necessary in all cases to the successful performance of operations upon the membrana tympani or within the middle ear, where these are undertaken in chronic non-suppurative disease for the purpose of improving the hearing.

(2) That local anæsthesia by means of cocaine in very small quantity is sufficient.

(3) That the exploratory opening of the tympanic cavity, and if deemed necessary, subsequent operations within the middle ear in the line of the sound-transmitting apparatus, when done under conditions of local anæsthesia which permit of the conscious and undisturbed co-operation of the patient, afford decided advantages, both for purposes of diagnosis and treatment.

(4) That when preceded and accompanied by proper antiseptic precautions and concluded by closure of the opening in the membrana tympani with similar care, the danger of subsequent suppurative inflammation is very slight.

A long train of clinical investigations by many observers has shown that the non-suppurative tympanic cavity may, under proper antiseptic precautions be safely invaded; but, until very recently, the extreme sensitiveness of the parts and the great importance of steadiness on the part of the patient during the progress of a minute operation within so small a space as that afforded by the external auditory canal and middle ear have led to the belief that complete anæsthesia was absolutely necessary to the successful performance of any operation more extensive than a paracentesis, a plicotomy or an excision of a portion of the membrana tympani. Complete anæsthesia, however, entirely abolishes that most important aid to the success of intra-tympanic operations undertaken in chronic non-suppurative cases for the improvement of the hearing, the relief of tinnitus or of secondary auditory vertigo, namely, that consciousness on the part of the patient which enables him to follow the different steps of the operation; to appreciate and to describe the auditory sensations and to respond to the hearing-tests which may be made from time to time during its progress. Under these conditions, in other words, the operative interference may terminate with the opening made in the membrana tympani if that seems advisable, or it may be intelligently continued to meet the ascertainable demands of the individual case.

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RUPTURE OF THE PLANTARIS TENDON.

BY WALTER B. PLATT, F.R.C.S. ENG., BALTIMORE, MD.,
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On account of its unusual appearance and doubtful use the plantaris muscle has always been an object of interest to anatomists, who have named it "elegant"[1] or "singular,"[2] according as its appearance or possible function made the stronger impression upon their minds. Of recent years, when the subject of muscle and tendon rupture has been better known, it has acquired a surgical importance, in that supposed ruptures of the gastrocnemius muscle proper, are now more often attributed to those of the plantaris tendon. Of this we shall have a word further on.

The plantaris has received various names, such as soleus parvus, plantaris gracilis, and extensor tarsi minor: it has, moreover, an historical interest in that Cardinal Richelieu[3] is said to have suffered from its rupture. On first viewing this tiny structure imbedded between great masses of muscle having similar attachments, one is at a loss to give it a *raison d'être.* In spite of efforts to ascribe to it a useful function, such as withdrawing the posterior capsule of the knee-joint from between the femur and tibia in flexion, rotating the foot, etc., it seems more probable, especially in view of the fact that the rupture of the tendon is followed by no permanent ill effects, that it is of no use whatever, and that its sole effect upon the individual, for good or evil, like the vermiform appendix, is to create disability on occasion.

It is a remnant of a structure useful to certain animals, which Nature has left over and forgotten in ascending to a higher type. It corresponds to the palmaris longus of the upper extremity, and in some animals is actually a tensor of the plantar fascia. In man, the projecting os calcis effectually prevents it from having any such function.

Says an old anatomy of 1805: "This muscle has gotten its name of plantaris, from its being supposed to furnish the aponeurosis that comes from the sole of the foot, but it does not in the least contribute to the formation of that tendinous expansion." Again, "One of its uses is said to be to pull the knee capsule from between the bones and assist in rotating the foot outward."[4] Maygrier[5] calls it the tibialis parvus.

"This muscle may be altogether absent, as in the wombat. It may, however, be present as a large belly, and arise from the outer condyle of the femur, as in the pig and rabbit. It may, also, in the same animals, end in an expansion which runs along the sole and becomes the perforated tendons of the digits. This muscle may even be connected with the pelvis by the intervention of the rectus femoris, the tendon of which is continued on into it, not only in birds, but in the aligator. It may be intimately connected with the outer head of the gastrocnemius, and fleshy bellies may replace the perforated tendons, as in the iguana."[6]

"Both origin and insertion may vary considerably. Arising from the outer part of the linea aspera and the posterior ligament of the knee-joint or from the outer condyle, it unites with the tendo-Achillis on the inner side, or with the calcaneous below, or it may end in the deep fascia of the leg."[7] Speaking of varieties, Henle says further: "The plantaris is more often absent than its analogue, the palmaris longus." Other anatomists assert the contrary, Henle quoting Hallett, who found it present in all of 105 cadavers examined in regard to this point.

The muscle itself is described by different writers as two to four inches in length, is sometimes double, and sometimes, though rarely, wanting.

CASES OF PLANTARIS TENDON RUPTURE.

My own cases of this lesion are as follows:

Case I. In August, 1884, a healthy married woman, about twenty-eight years old, was running in her bathing-suit along the beach at Fisher's Island, near New London, Conn., when she suddenly felt a severe pain in the calf, with loss of power in the left leg, and pain on flexion or extension. She was carried home; remained in bed five days, suffering some pain at first. There was tenderness on pressure over the middle of the calf, but no ecchymosis. Patient was out and limping about in a week; the lameness continuing a few days longer.

Case II. B. L., a healthy athletic man, twenty-five years of age, while playing foot-ball and running diagonally across the field toward the left, dodged quickly to the right, using the left leg to stop and turn, when he felt acute pain in calf of left leg. The whole calf was painful; but there was a spot of tenderness on deep pressure just below the largest part of the calf. General stiffness and aching of the limb followed, with slight ecchymosis. Patient was able to walk without limping in about three weeks.

Case III. J. P. S., manager of a large summer hotel, is fifty years of age, and weighs over two hundred pounds. Pale and stout. While stepping down and backward from the porch (about eight inches) to the tennis-court, in August, 1890, he felt a severe pain in the calf of the left leg; at the same time he thought he heard something snap. He limped into the house, suffering considerable pain. He was confined to his room for three days, and limped about for a week. There was ecchymosis and tenderness on the inner side of the calf.

Case IV. H. C., a gentleman farmer, sixty-two years of age, stepped down from the curb to the gutter on Park Avenue, Baltimore, March 12, 1892, a distance of six to eight inches. At that instant he felt a severe pain in the middle of the calf of the left leg, as if he had been struck by a bullet. He involuntarily put his hand to see if there was much bleeding, and looked in vain for the ball, and then for a stick, which he thought might have struck him, end on. There was a good deal of aching and pain on motion. Patient kept his chair for four days, but was not free from pain or lameness for two weeks. There was in this case slight swelling of the calf, localized pain in about the middle and inner side of the same, and some ecchymosis visible when I saw him at the end of one week.

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[1] [illegible] Anatomy.
[2] H[illegible] Anatomy.
[3] Hyrtl: [illegible] Anatomy.
[4] [illegible] Wilson, 18[illegible].
[5] Maygrier's Anatomy, 1832.
[6] Mivart: Lessons, 1872.
[7] Henle: Anatomie.

TREATMENT.

In all four of these cases, rest was obtained and carried out for three to five days; the limb was snugly bandaged; and an evaporating lotion applied in the last two cases. The last three cases can walk perfectly; the first case has disappeared from observation. In none of these was there anything to be felt by the surgeon except a slight increase of tension in the calf of the affected leg as contrasted with the other. The ecchymosis appeared after several days, and was the only other physical sign. Apparently, the point of rupture in these cases was a little beyond the belly of the plantaris and in the tendon itself.

Sir Astley Cooper[8] speaks of total and *partial* rupture of the tendo-Achillis; in the latter case he attributes symptoms, which we at the present time ascribe to plantaris rupture, to rupture of the gastrocnemius muscle, where it joins the tendo-Achillis.

Concerning rupture of tendons, Treves[9] ascribes them to some sudden or involuntary action of the muscle. They are not uncommon in men after middle life, most frequent in the plantaris, tendo-Achillis and long biceps tendon. Often, he says, there is an audible snap in the case of the plantaris or Achillis-tendon rupture, with lameness or inability to walk. Sometimes also local extravasation.

When the long head of the biceps ruptures, the muscle contracts into a hard, dense lump, on putting it into action. Rupture of the inner head is said to soon follow that of the long one.

Bryant[10] mentions a case where the short ruptured four months after the long tendon of the biceps, in a man past middle life. Again, in a boy of eight years, where the tendon of the biceps femoris was ruptured in an accident in connection with a cart. Another case where the plantaris tendon ruptured in a man of twenty-seven years, who stepped up two and a half feet with a heavy load on his back. He says the accident causes dragging and eversion of the foot.

Clarke and Barker[11] claim that the tendons most often ruptured are the tendo-Achillis, triceps humeri, and rectus femoris; while Henry Morris makes the order the following: ligamentum-patellæ, plantaris, tendo-Achillis, rectus tendon, and tendon of biceps femoris. He mentions as symptoms, sudden loss of power, and violent pain as if shot or struck a forcible blow, sometimes a sensation of tearing or an audible snap; again, no pain may be felt. Also that the plantaris may rupture from trivial causes.

Gross[13] and Miller[14] both speak of a loud snap being heard when the plantaris tendon ruptures subcutaneously.

Before deciding that cases apparently similar are really due to plantaris rupture, we must exclude lesions of the other structures of the leg; first of all fracture of the fibula, and of all ways the best is pressure at a distance from the point of localized pain, when some abnormal mobility or crepitus will surely be felt in case of rupture. The local tenderness in the tendon rupture is near the middle of the calf, while if the fibula is fractured near this point, firm intermittent pressure below will develop the characteristic signs of fracture. The subsequent course will surely develop the diagnosis, if that were in doubt, since any patient can walk to some extent in a week, with plantaris tendon rupture, but not with fractured fibula. Serious injury of a nerve-trunk may easily be eliminated by absence of paralysis and shooting pains, anæsthesia, formication, etc. Rupture of any vessel sufficient to cause the temporary disability of plantaris tendon rupture, would be followed by swelling of the leg, and effusion of blood far beyond anything we know of in these cases.

The only lesions this accident might be confounded with are ruptures of other muscles or tendons in the leg, and if only seeing is believing (and autopsies are practically unknown after this injury) we can seldom make a positive, but only a probable diagnosis. In cases of rupture of muscle-fibres in other parts of the body, there is no snap heard or felt, but rather a dull tearing sensation followed by aching pain, and some tenderness aggravated by motion.

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VENTRAL FIXATION OF THE UTERUS.[1]

BY G. RYDER, M.D., MALDEN, MASS.

At a recent society meeting held in this city a discussion ensued on the merits of the Alexander operation, in which hysteropexy seemed to have almost been lost sight of.

I have no long series of cases to report (they being readily counted on one's fingers), nor any large experience from which I might abstract deductions of positive value, but the impressions gained from the above-mentioned meeting are so different from what I am led to believe are correct, that I venture to call your attention briefly to the subject of "Ventral Fixation of the Uterus."

As you are well aware, hysteropexy is no new procedure, but, like many another good thing in gynecology, has been formerly proposed, brought to the notice of the profession by prominent men, dropped into apparent obscurity, and again revived to attract the attention of the leaders in the surgical world.

Koeberlé, in 1869, sutured the uterus to the abdominal wall after having removed an ovary in a difficult case of retroflexion. Sims, Schroder, Tait, *et al.*, did similar operations in succeeding years; but Olshausen, a few years since, first proposed this method for retro-displacements *per se*, since which time many cases have been reported as being done, both for displacements alone and as an adjuvant to other measures.

On inquiry, I find the operation to be much in vogue in certain quarters of this continent and in Germany, while certain well-known men prefer it in *all* cases to the Alexander-Adams.

Fixation, as a complementary measure to the removal of a cyst, fibroma, ovary, etc., is, no doubt, frequently practised, and, I assume, has many supporters; but when done solely for retro-displacements or prolapse with distressing and disabling symptoms, is a matter to which I invite your discussion.

Practising in a community where the Alexander operation was being favorably commented on, as a young man I naturally selected this method in those cases demanding operative treatment which fell to my lot. Several difficulties were early experienced, but I consoled myself with the similar experience of able operators; for one finds gradually creeping into print and public utterance, the statement that an Alexander operation is at times anything but easy of accomplishment. I do not hesitate to say, therefore, that in one case where an Alexander was attempted, it was abandoned after searching in vain for a ligament on one side at the external ring, and finished by a ventral fixation. In another case the ligament was so tiny that I was unwilling to trust to it.

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[8] Lectures by Sir A. Cooper and [illegible], 1831.

[9] Treves' Surgery, [illegible].

[10] Bryant's Surgery, p. [illegible].

[11] Holmes' System of Surgery, vol. i, p. 17[illegible].

[12] Ibid., vol. i, p. [illegible].

[13] Gross's Surgery, vol. i, p. [illegible].

[14] Miller's Prin. Surgery, Phila., 18[illegible].

[1] Read before the Boston Gynecological Society, March [illegible].

The difficulty, and sometimes the uncertainty, of finding the ligament, the great amount of time often required, as well as the failure, at times, of the ligament to hold, the danger of rupturing vascular adhesions without the aid of sight and touch, have given rise to the question, Is there no other way of fixing the uterus in a strongly-anteverted, elevated position?

I do not wish to imply that the Alexander operation has not its field of usefulness; its chief utility being applicable, however, to those cases of retroflexion without adhesions which demand surgical interference.

The elevation and maintenance of the uterus in an anteflexed state may, as we have said, be accomplished by suturing that organ to the abdominal wall, to be there held by connective-tissue adhesions of broad surfaces. The anchorage of the uterus thus effected has, so far as I can ascertain, with but very few exceptions, been permanent. There have been no dragging, stinging pains on account of it and the subsequent position has been a little lower in the pelvis than at first produced, thus approaching a more nearly normal plane.

The position assumed by this method is one a little higher in the pelvis than that of the Alexander, but one of less abnormal anteflexion, offering, so far as my little experience goes, much less impediment to the full distention of the bladder. In several cases of the Alexander, patients have complained of a burning, stinging pain with frequent desire to micturate, with the necessity, in a reported case, of resort to a second operation, ventral fixation.

I believe this position, although abnormal, will prove to be better tolerated than one *also* abnormal, but so near the bladder that, when distended, the shortened ligaments are pulled on.

The great objection which Winckel made to the Alexander, before it had been done much, and which still holds good to-day, was the fact that the chief cause of retroflexion, that is, the *relaxation* of the *retractores* was ignored. Ventral fixation tightens and depletes the ligaments, accomplishing what massage and electricity are supposed to do by a slower process.

The possibility of a subsequent pregnancy in a uterus thus fixed has given rise to much discussion, and has been advanced as a special argument against hysteropexy. It was, at first, a just criticism, holding good against either operation; but the arbiter of all such queries, time, has now given us some absolute data. So many reported cases of successful full-term labors and subsequent good health following both methods have been made, that the question is no longer *sub judice*. Abortions have occurred, but are relatively *very few* and less in point of numbers following either method than when the retro-flexed uterus becomes pregnant.

The newly formed adhesion of ventral fixation is very tenacious and efficient in holding a non-pregnant heavy uterus, and, though less elastic than adhesions from inflammatory exudate, stretch sufficiently to allow of pregnancy: the small area of fixation does not apparently retard the development of the rest of the uterus in an upward direction and away from this area.

During the past year a number of reported cases of full-term deliveries following ventral fixation have been published in Germany.

Dr. Florian Krug, of New York, who is a strong advocate of this operation, and who, as you know, improved the old technique, writes me that he has done the operation nearly fifty times without the least untoward result, but with the happiest of effects. Three of his cases have become pregnant, two of whom were successfully delivered; the third, at last accounts progressing favorably to term. These bona fide cases coming from so accurate and reliable a source are of more value, in estimating the worth of an operation, in this particular, than all the ethical objections that have ever been raised.

It has been urged that ventral fixation carries with it added danger. The statement has just weight, especially when done by inexperienced hands.

The published cases of death, however, are very few, and those due to sepsis occurring several years ago. I find none of recent date. The mortality-rate of the Alexander gives no better showing, although comparison in this respect seems to me as yet, unjust, owing to the far greater number of times the latter has been done. Much less than three per cent. of all cases, including the early ones, have been fatal; and when the large number of cases now being done in Philadelphia, New York, etc., have been published, one has reason to believe the percentage will be very much lessened.

No one denies but that opening the abdominal cavity incurs an extra risk; so does the opening of the entire canal in the Alexander to find the ligaments; so does the forcible severing of vascular adhesions in the dark. Both operations have a mortality-rate; but I believe there is not much difference in the percentage.

The great class of cases in which ventral fixation seems to be especially indicated is that in which strong adhesions exist. These, we know, are to be broken or tied; and no method of blindly breaking them by brute force and allowing vessels to bleed in the pelvis, is so rational as one which deals with them by the conjoined sense of touch and sight.

Retro-displacements are often due to relaxed ligaments which are the result of inflammatory products, causing extra weight and swelling of the ligaments themselves and the uterine adnexa. It is due to this fact that many cases pull so heavily on and stretch the shortened round ligaments after an Alexander, causing vesical tenesmus, since the posterior surface of the saucer-shaped bladder is pulled on by its attachment to the anterior surface of the uterus. Fixation to the abdominal wall by a strong connective-tissue anchorage gives a surer and more permanent position, in such cases, than the shortening of the round ligaments.

Oftentimes a uterus can be replaced by one of the several methods and even kept in place by a proper pessary; but the moment the pessary or the finger is removed down falls the uterus; in other words, adhesions have been *stretched*, but not *broken*, and the subsequent history is, that the pessary soon irritates and causes further inflammatory exudate. Again, adhesions of an inflammatory type that have been stretched have, from their very contractility, a tendency to re-contract and eventually pull on a shortened ligament. For such cases, it occurs to one, a ventral fixation is preferable to an Alexander. Pulling on adhesions by any method re-lights an old inflammation and converts one pathological state into another.

It is a noteworthy fact, frequently stated of late, that adhesions which have resisted a long course of packing, massage and galvanism, and which, therefore, would seem to be very firm and thick, are found on opening the abdomen to be thin and slight, readily detached with the finger and causing little or no hæmorrhage.

It is a homely but sage remark that "the proof of the pudding is in the eating," which recalls the fact that the Alexander operation has benefited hundreds of suffering women. One great criticism, I ask you to discuss, is that it is solely and indiscriminately used by many who wish to correct the malposition and its causes, and that it might be replaced, in most cases, with more profit to the patient by ventral fixation.

The personal factor has something to do with the choice of methods and the dangers attending either. One who does a section of this sort with the success of Krug and others, I have no doubt would select ventral fixation in nearly all cases, while one who has always been served well by an Alexander, will find ready argument for its employment. With the intermediate operation of shortening the round ligaments in a loop intra-abdominally I have no experience.

As to the technique of the operation I have little to suggest different from what has long since been formulated. The buried kangaroo tendon, with a closed wound and a dry pelvis, is the shorter and prettier way to recovery than by the use of silk or silk-worm gut. Tendon remains good *in situ* a long time and can be safely trusted. It is to be carried through all the tissues, except the skin, through the upper anterior surface of the uterus sufficiently deep to secure a firm hold and including a part of the broad ligament. A similar suture is to be placed on the other side.

The area of fixation, which should be large enough to secure a firm anchorage, is to be slightly scraped, but not sufficiently so to cause hæmorrhage. The sutures are then drawn taut and tied under the skin and subcutaneous fat, and the wound closed by buried tendon sutures after the manner of one of our honored members. The uterus is thus fixed in a plane perpendicular to the horizontal one of the supine body and in anteflexion. Trendelenburg's position greatly facilitates a difficult case of adhesions.

As stated above, my own cases are but few in number (six) and very meagre upon which to form any just estimate of the operation, and were it not for my personal acquaintance with many cases from other sources, I should hesitate in presenting them.

In none was there a rise in temperature above 99°, except in one case of removal of both ovaries and tubes where the temperature registered 100° for a long time. In none has there been any inconvenience with the bladder or rectum.

The weight and dragging, with pelvic pain and disability previous to the operation, have been replaced by a sense of lightness and buoyancy.

No menstrual disorders have occurred. The primary shock was very slight, and the convalescence comfortable. In none of these cases, except the one which was complementary to an oöphorectomy, was there the ordinary intestinal disturbance and pain so common after most laparotomies.

A remarkable change to the examining finger, say three weeks after the operation, is the very noticeable diminution in the size of the uterus.

The five points I desire to make are as follows:

The operation is applicable to a much wider range of cases than the Alexander.

It is not difficult and comparatively without danger.

The anchorage is secure.

Pregnancy is possible, and delivery is generally at full term.

The rapidity and ease of the operation contrast favorably with an Alexander.

The causative lesions of the retro-flexions are better overcome and more safely treated than by other extra-abdominal methods.

The mortality-rate is no greater than that of the Alexander.

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Clinical Department.

A CASE OF AKROMEGALIA.[1]

BY FRANK L. DAY, M.D., PROVIDENCE, R. I.

The woman whose case is here recorded came to my clinic at the out-patient department of the Rhode Island Hospital, the middle of February, 1893. As akromegalia is a rather infrequent disease, I recommended her admission to the wards for observation and study; and she there came under the care of Dr. Wm. R. White, by whose courtesy I am enabled to make this report.

K. D. is an unmarried Irish domestic, twenty-four years old, who has been seven years in America. Her father is dead of heart-disease. Her only previous illness is a malarial attack three years ago, save that she has had for many years, and still has, a quite severe frontal headache — especially severe in the middle of the day. Menstruation began at seventeen, regular for two years; but for the last four years there has been amenorrhœa. About a year ago she began to have considerable pain in her hands, especially severe after having them in water or on using them actively; at night, sharp pains would run up the back of her hands, forearms and arms to the shoulders. At the same time she noticed her gloves were too small; the hands have steadily increased in size, so that while she formerly wore a six and a half or seven glove, she now cannot wear gloves, but has to use mittens. Her shoes were then too small, and she has had to keep buying larger. She has at times a little pain in the calves, none in the feet.

A year ago she wore twenty-two inch corsets; now wears twenty-four inch, but cannot nearly clasp them. She requires a collar much larger than before. Some pain in the eyeball is complained of, and her eyes tire easily and run, if she reads much.

She has gained twenty-three pounds in the past year — one hundred and thirty to one hundred and fifty-three pounds.

She is disinclined to work or exert herself much, feeling sleepy much of the time. Bowels constipated. No urinary symptoms. Appetite as good as, if not better, than formerly. She perspires freely on exertion. No cutaneous paræsthesia. She has been quite hoarse for several months.

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[1] [illegible] reported and [illegible] presented before the Rhode Island Medical Society, at its annual meeting, [illegible], March, [illegible].

The most obvious, striking appearance as she presents herself, is the size of the hands, which are much enlarged in thickness and breadth — though but little, if any, in length. While the increase involves both soft and hard parts, there is seen most prominently to be marked thickening of the bones, and especially at the joints. The nails show no especially noticeable changes, except that by comparison they seem to have been outgrown by the fingers. The thickening stops at the wrist, where the lower ends of the radius and ulna are but little, if any, enlarged. The skin is soft and flabby and generally moist. It is not pigmented. The feet are also enlarged in a like manner, as are also the malleoli to a less degree. Reflexes normal. Cutaneous sensation normal.

There is nothing remarkable about the shape of the face, as the maxillary bones have not taken on much hypertrophy as yet. The end of the nose, however, is very prominent, having the shape and size of a small English walnut. The lips, especially the lower, are beginning to thicken.

The tongue is very greatly enlarged in all its dimensions.

The neck is large and full, from a moderate symmetrical hypertrophy of the thyroid gland in front, and from a general thickening of the cervical vertebræ and overlying tissues, behind.

There is no deformity of the spinal column, but in front the ribs and their cartilages have taken on considerable thickening, especially at the junction of the two portions, suggesting the rachitic chest.

The breasts are flat and rather flabby — with ill-developed nipples.

Chest examination shows nothing remarkable, except for a somewhat enlarged area of cardiac dulness. The apex cannot be seen nor felt, but is found by the stethoscope to be in the fifth space, four and a half inches from mid-sternal line, and considerably without the nipple line. The heart-sounds are clear, but of deficient muscular quality. It is rather exceptional, at so early a stage, to find evidences of a dilated, rather than of an hypertrophied heart. The pulse is rather small but regular, and ranges from 90 to 96 per minute. There is no dulness over the sternum to suggest the presence of a thymus gland.

No increased size by percussion over liver or spleen. From twenty-four to thirty ounces of urine voided in twenty-four hours; normal color; acid; specific gravity 1,020; no albumen or sugar.

Dr. Horace G. Miller was kind enough to examine the eyes, but found nothing unusual.

Dr. F. B. Sprague reports, after examining the throat, a general hypertrophy of the fauces and pharyngeal walls, with excessive enlargement of base of tongue, glosso-epiglottidean folds and epiglottis; which latter, at rest, touches the posterior pharyngeal wall, and on phonation is raised only just enough to free itself, thus quite preventing a view of the larynx, which is doubtless equally hypertrophied.

So much has been written lately of this interesting and relatively uncommon disease, that general comment is unnecessary.

This case is interesting, from the rather early stage at which it comes under observation. Unfortunately for us (perhaps fortunately for the Irish clinicians), we shall be unable to follow it to completion, as she expects to return to Ireland soon.

Striking features are amenorrhœa; large and painful hands; large feet, nose, tongue, pharynx, thyroid, neck and ribs; hoarseness; general languor; increased appetite. The most unusual feature seems to be the evidence of a dilated rather than of an hypertrophied heart at so early a stage of the disease.

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Medical Progress.

THE PARASITIC ORIGIN OF CARCINOMA.

BY W. T. COUNCILMAN, M.D.,
Professor of Pathology, Harvard Medical School.

1. Schütz. Mikroscopische Carcinombefunde. Frankfort, 1890.
2. Schutz. Ueber die Protozoen und coccidienartigen micro-organismen in Krebszellen. Munch. Med. Woch., 1890, No. 35.
3. Verneuil. Proprietes pathogenes des microbes renfermes dans les tumeurs malignes. Revue de Chirurgie, ix, 1889.
4. Zahn. Beitrage zur Ætiologie des Epithelial Krebse. Virch. Arch., Bd. 117, 1889.
5. Hauser. Das Cylinderepithelcarcinom des Magens und des Dickdarms. Jena, 1890.
6. Ribbert. Deutsche Med. Woch., No. 1, 1891.
7. Kubasoff. Ueber die Mikro-organismen der Krebs bildungen. Wiener Med. Presse, 1890.
8. Hanau Erfolgreiche experimentelle Uebertragung von Carcinom. Fortschr. d. Med., Bd. 7, No. 9. 1889.
9. Heidenhein. Ueber die ursachen der localen Krebs recidive nach amputation mammæ. Arch. f. Klin. Chir., Bd. 39, 1889.
10. Schimmelbusch. Ueber multiples primäre Auftreten primäre Carcinome. Arch. f. Klin, Chir., 39, 1889.
11. Podwysozki. Coccidien in der menschlichen Leber. Centralbltt. f. Bakter, No. 22, 1889.
12. Pfeiffer. Die Protozoen als Krankheitserregern. Jena, 1890.
13. Neisser. Ueber das Epithelioma (Sive Molluscum) contagiosum. Vierteljahrschfr. f. Derm. u. Syph., 1888.
14. Darier. De la psorospermose folliculaire vegetante. Ann. de dermatologie et de Syph., x, 7.
15. Torök und Tommasole. Ueber das Wesen des Epitheliome contagiosum. Monatshefte f. prakt Dermat., No. 4, 1890.
16. Thoma. Ueber eigenartige parasitare Organismen in den Epithelzellen der carcinome. Fortschr. d. Med., Bd. 7, 1889.
17. Wyckham. Maladie de Paget du mamelon. Arch. de Med. exper., 11, 1890,
18. Borrel. Sur la signification des figures decrites commes coccidies dans les epitheliomes. Arch. de Med. exper., 1890.
19. Firket. Ueber eigenthümliche veränderungen der Epidermis. Centralbltt. f. Allg. Path. u. Path. Anat., 1890, No. 20.
20. Sjöbring. Ein parasitarer protozoaartiger Organismus in Carcinomen. Fortschr. de Med., 1890, No. 14.
21. Heukelom. Centralbltt. f. Allg. Path. u. path. anat., 1890, No. 22.
22. Klebs. Ueber das wesen und die Erkennung der Carcinombildung. Deutsche Med. Woch., 1890, No. 24.
24. Andrews. A study of the location of primary carcinomata as illustrating the probability of a cancerous microbe. Journal of the American Medical Association, Chicago, 1889.
25. Ramsey Wright. The pathogenic sporozoa. Opening of the University of Toronto, Toronto, 1890.
26. William Russel. An address on a characteristic organism of cancer. Brit. Med. Jour., 1890.
27. Eberth. Ueber Einschlüsse in Epithelzellen. Fortschr. d. Med., No. 17, 1890.
28. Stienhaus. Ueber Carcinomeinchlüsse. Virch. Arch., 126.
29. Steinhaus. Weitere Beobachtungen ueber Carcinomeinschlüsse. Virch. Arch., 127.
30. Virchow. Bemerkungen ueber die Carcinomzellen Einschlüsse. Virch. Arch., 127.
31. Fischel, F. Uebertragungsversuche mit Sarkom und Krebs gewebe des Menschen auf Thiere. Fortoch. d. Med., No. 1, 1892.
33. Stroebe. Zur kentniss verschiedene celluläre Vorgänge und Erscheinungen in Geschwulsten. Zeiglers Beitrage, vol. xi.
34. Malassez. Sur la psorospermose du foie chez le lapin domestique. Arch. f. Exper. Path., vol. iii, 1891.
34. Klebs. Allegemeine Pathologie, vol. ii, p. 524.

36. Rudolf Klein. Ueber die Beziehung der Russel'schen Fuchsinkörperchen zu den Altmann'schen Zellgranulis. Zeiglers Beitrage, vol. xi.
37. Steinhaus. Parasitäre Einschlüsse in den Pankreaszellen. Zeiglers Beitrage, Bd. vii.
38. Podwyssozki and Sawtschenko. Ueber Parasitismus bei Carcinomen nebst Beschreibung einiger in den Carcinomgeschwülsten schmarotzenden Sporozoen. Centralbltt. f. Bacteriologie, 1892.
39. Russel. Die Mikro-organismen des carcinoms. Wien. Med. Blatter., 1891, No. 1.
40. Metschnikoff, E. Note au sujet de la mémoire de M. Sawtchenko. Pasteur's Annales, 1892, No. [illegible].
41. Saudakewitch. Parasitisme intracellulaire des neoplasies carcinomateuses. Pasteur's Annales, No. [illegible], 1892.
42. Sawtschenko. Weitere Untersuchungen über schmarotzende Sporozoen in den Krebsgeschwülsten. Centralbltt. f. Bacteriologie, 1892, p. 17.
43. Foa, P. Ueber die Krebsparasiten. Centralbltt. f. Bacteriologie, No. [illegible], 1892.
44. Galloway. The parasitism of protozoa in carcinoma. Brit. Med. Jour., Feb., 1893.
45. Jackson Clark, J. Transactions of the London Pathological Society, 1893.
46. Coats. An address on certain considerations in regard to the infective nature of cancer. Brit. Med. Jour., Jan. 14, 1893.
48. Delapine. Pathological Transactions, xlv, 346.
48. Steinhaus. Karyophagus Salamandræ. Virch. Arch., 115.
49. Ruffer and Walker. Parasitic protozoa in cancerous tumors. Journal of Pathology, vol i.
50. Hansemen. Ueber asymetrische Zelltheilung in Epithelkrebsen. Virch. Arch., 119.
51. Ohlmacher. A peculiar nuclear safranine reaction and its relation to the carcinoma coccidia question. Journal of the American Medical Association, February 4, 1893.
52. Ströbe. Neuere Arbeiten über Hestogenese und Ætiologie des Carcinoms. Centralbltt. f. path., Bd. ii, 1881.

The above list gives some of the more important articles which have been published concerning the general nature and the cause of carcinoma within the past few years. It gives some idea of the general interest which the subject has of late excited. The general nature and cause of carcinoma is one of the most important questions to be solved by future investigators. As will be seen, most of these articles have reference to the parasitic theory of carcinoma, and are taken up with the description of objects supposed to be of a parasitic nature which have been found in various carcinomata.

THE PRESENCE OF BACTERIA IN CARCINOMATA AND OTHER TUMORS.

With the discovery that bacteria were the cause of many of the infectious diseases, and particularly the infectious tumors, such as tuberculosis, leprosy, actinomycosis, etc., the carcinomata began to be examined for the presence of bacteria, both by making sections and by the various methods of culture. Verneuil (3) describes certain bacteria which he found in the interior of carcinomata, especially in cases in which degenerative processes had taken place. He thinks that the organisms may stimulate the growth of tumors by exciting them to increased cell-production, and that they may also produce softening and the various degenerative processes found in rapidly growing tumors. The general septic infection which is frequently found associated with the malignant tumors, and which is shown by the cachexia, may also be produced by the bacteria. Zahn (4) obtained streptococci from a metastatic carcinoma in the frontal bone secondary to a primary carcinoma of the submaxillary gland. There were numerous foci of broncho-pneumonia in the lung, probably due to aspiration, in which the same bacteria were found; they were also found in the bone marrow and in the fibrino-purulent exudation on the pleura. He does not think that the organisms had any casual connection with the primary carcinoma. He thinks that the chief interest of the case lies in the discovery that micro-organisms can be carried into tumors by the blood, and can settle there and grow as in other tissues. Schütz (1) described various bacteria which he found in cancer of the lip. They were stained with the ordinary analine colors, and in form corresponded both to bacilli and micrococci. He does not think that the organisms stand in any etiological relation with the carcinoma, but are only accidentally present. Hauser (5) also shows that bacteria are frequently found in carcinoma. They are most frequent in the ulcerated carcinomata of the alimentary tract, and may be regarded simply as saprophites; these find a favorable place of development in the broken-down necrotic tissue of the tumor. They may also be found in the metastases in the liver, secondary to primary tumors of the alimentary canal. They do not appear to have any relation to the development of the tumor. Ribbert (6) has also frequently seen both staphilococci and streptococci in non-ulcerated and ulcerated carcinomata of the mamma, and in various other forms of carcinoma. He does not think that these organisms have any relation to the development of the tumor, but simply represent an accidental infection. On the other hand, Kubasoff (7) obtained from various carcinomata, especially from primary tumors of the stomach, a definite short, thick bacillus. This grew on various culture media, producing a scaly, superficial growth. The organisms were distinctly motile. Pure cultures of the organism were fed to guinea-pigs, rabbits, cats and dogs, and were also injected under the skin. The animals died at various intervals, and the autopsies revealed nodules in the internal organs, which from their general appearance he regarded as carcinomata. He does not appear to have made any careful microscopic examination of the nodules, and from the general description that he gives it does not appear at all evident that they were true tumors.

So far as can be seen from the recent investigations on the subject, it seems evident that we can have various forms of bacteria in carcinomata. The bacteria may grow there as in other portions of the body; they may produce inflammations and necroses in the tumor, and in some cases possibly have some connection with the cachexia; but no evidence has been adduced to make us believe that they have any casual connection whatever with the tumor.

THE PRESENCE OF OTHER ORGANISMS THAN BACTERIA IN CARCINOMATA AND OTHER TUMORS.

Much more interest, however, has been excited by the supposed discovery of parasites belonging to the protozoa in carcinoma. It has long been known that a species of protozoa, the coccidium, frequently exists as a parasite in the liver of the rabbit, and produces nodules in it. Apparently the same organism has been found in a few cases in the human liver. Podwyssozki (11) described the appearance and the pathogenesis of a disease of the human liver produced by the coccidia. He has found coccidia in the liver not only in the cystic tumors of the bile-ducts, but also in other parts of the organ in relation with the liver-cells. He says that the recognition of the coccidia in this condition presents great difficulties. He has found four cases in which coccidia were diffusely scattered throughout the liver and not contained in definite tumor formations. They were found as parasites both in the liver-cells and in the nuclei of these. They may reach a considerable size and appear as oval bodies containing one or several spores surrounded by a firm, refractive membrane. When found in a nucleus they may produce a marked hypertrophy of this, and finally destruction of the entire cell. The destruction of the cells caused by the parasites may lead to an interstitial growth in the liver, producing cirrhosis and jaundice. In the first stage of development of the parasite in which it appears as a homogeneous vesicle in the cell, it is frequently difficult to distinguish it from the nucleus.

The coccidial tumors of the liver of the rabbit have lately received a more thorough investigation at the hands of Delapine (48) and Malassez (34). They are found in the livers of rabbits in a large percentage of cases. Delapine found them in 92 per cent. of all rabbits examined, and Malassez, in Paris, says they are almost always present. According to Malassez, they form definite tumors in the livers of these animals. These tumors consist essentially in a dilatation of the bile-ducts with a new formation of glandular tissue often producing tumors of a perfect adenomatous type. The organisms invade the epithelial cells of the bile-ducts and cause them to proliferate. In some cases, the proliferation of the cells does not give rise to the production of single cells, but giant cells enclosing one or more of the parasites are produced. Sometimes the parasites are enclosed in large masses of tissue which seem to be formed of single cells fused together. With the proliferation of the epithelium of the bile-ducts there is also proliferation of the surrounding connective-tissue producing a granulation-tissue in which numerous leucocytes are found; this may extend for some distance into the surrounding tissue, and the newly-formed epithelial tissue from the bile-ducts may extend into this. Malassez distinguishes two stages of development in the parasites. In the earliest condition they are found in the epithelial cells of the bile-ducts and are not easily recognized. They consist simply of small protoplasmic masses with a very small nucleus. A cyst wall becomes formed around this mass by the hardening of the surrounding protoplasm, and the contents of the small cyst becomes contracted into a granular mass. He was not able to cultivate these organisms in any way and found them extraordinarily resistant to all forms of reagents.

Pfeiffer (12) gives the various stages of development of the coccidia which are found in various animals. The first stage is that of a germ or spore, in the form of a small crescentic or elongated corpuscle, which enters into the epithelial cells of the host. It there is converted into a cyst with a clear membrane and granular contents. At this stage the nucleus of the cell into which the parasite first entered disappears and the body of the cell becomes variously distorted. The granular protoplasm in the small cyst becomes differentiated into a number of round bodies, the so-called sporoblasts, or spores of the first order. In the interior of these sporoblasts, the crescentic spores, or spores of the second order develop. In the form of these secondary spores, which usually have a crescentic shape, the parasite first enters into the body of the cell. The number of spores of the second order which develop in the sporoblast is characteristic for the different species of coccidia. After the surrounding membrane of the original cyst and that of all of the sporoblasts has burst, the spores become free, and as they are themselves endowed with motion they enter into other cells of the tissue, and the circle of development begins again. Sometimes this course of development may be shortened in various ways. Many species only go through one phase of this development, the secondary spores not being formed. Podwysozki and Sawtschenko (38) compare the coccidial tumors of the rabbit's liver with the carcinomata. There is also another form of coccidium, the coccidium perforans, which produces an inflammatory infiltration, and even small inflammatory new formations in the mucous membrane of the intestinal canal of many animals. All attempts to study the various steps of development of these organisms outside of the body and to produce the disease by direct inoculation of the tissue with the parasites have failed.

Steinhaus (48) describes under the name of karyorphagus salamandræ, a parasite in the epithelial cells of the alimentary canal of the salamander. The organism lives as a parasite in the nucleus. When first seen it is in the form of a small protoplasmic mass with a small nucleus; this enlarges and first breaks up into a number of small bodies, and from these small bodies crescentic-shaped organisms are developed. These gradually fill up the nucleus of the invaded cell and destroy that and the cell. In another article (37) he describes as parasites the small bodies which are found in the cells of the pancreas of the salamander. These bodies were first seen by Nussbaum in 1882 and were considered by him to be auxiliary nuclei. O'Gata in 1883 further described the bodies and considered them to be portions of the nucleus which had become separated from the main nucleus and partly broken down in the cell and partly used up in the formation of new cells. Steinhaus figures them as small spindle or crescentic-shaped structures which may be found either in the cell protoplasm or in the nucleus.

Eberth (27) in an article on inclusions in epithelial cells again takes up the consideration of these supposed parasites in the pancreas. He says that they are not parasitic, but should be designated as pseudo nuclei. They are more numerous in the actively secreting gland, but may also be found in the inactive gland, although in very small numbers. When first seen they appear as slightly curved, refractive threads of greater or less length which stain in hematoxylin more intensely than the rest of the cell. The whole process appears to him to consist of a swelling of the cellular network in certain places. Similar structures may be found in the cartilage cells of the calf, and in the cartilage cells of the shoulder girdle of the shark. Such appearances in the cells may be artificial and due to the process of embedding.

The first article with reference to parasites in cancer not belonging to the bacteria, is that of Thoma (16). In a short article Thoma describes certain cell-like structures which he found in the nuclei of the epithelial cells of carcinoma. These structures were different from any other cell-forms, and the author regards them as parasites. They are small, unicellular structures 4μ to 15μ in diameter, and they consist of protoplasm, a nucleus, and sometimes a nucleosus. They are of irregular shape, round or oval and sometimes elongated. They are found either singly or in groups of from four to six, in the epithelial nuclei where they produce various changes. The nucleus becomes vesicular and granular. In connection with this appearance he calls attention to the discovery by Steinhaus of parasites in the epithelial cells of the alimentary tract of the salamander. This article of Thoma's excited a great deal of attention, and has been followed by numerous articles on the same subject.

In this connection the disease of the female breast, known as Paget's disease of the nipple, has excited much interest. This is a comparatively rare affection, characterized by a chronic inflammation of the nipple, the areola and the neighboring tissue, and is followed by the development of a carcinoma in the breast. It is habitually unilateral, of slow growth, and only leads to carcinoma in after years. The nipple becomes retracted in the early stage of the disease. Some of the dermatologists have believed that the affection in its early stage is an eczema of the skin which is followed by irritation and proliferation of the epithelial cells of the milk-ducts. Finally the ducts rupture, and epithelial outgrowth takes place into the surrounding tissues.

In 1889 Darier described the affection as due to parasites belonging to the species of psorosperms. If the epithelial cells are scraped from the surface and examined in iodine solution, small bodies with a refractive membrane and double contour may be seen. The diameter of these bodies is variable. They are generally larger than the normal epithelial cells, and are contained in greatly distended cells. Within the membrane there is a small amount of granular protoplasm which is sometimes strongly refractive. When it first appears the parasite consists of a small mass of protoplasm with a nucleus, and is difficult to distinguish from the epithelial cells.

Wyckham (17) carefully investigated four cases of this disease, and gives a description of its various stages. He divided it into two stages: The first, lesions of the superficial tissues; second, lesions of the deeper tissue. The first stage consists of thickening of the epidermis, with roughening and scaling of the surface. Later the skin becomes actively inflamed; the gland-ducts become dilated and active proliferation of their epithelium takes place. Numerous parasites are found in the epithelial cells of the skin and in the gland-ducts. In the second stage the changes in the epidermis are more pronounced. The papillæ become effaced, and the dilated vessels are surrounded by embryonic cells. The glands take a very active part in this change. Their calibre becomes dilated, and they are intensely inflamed. There is a marked proliferation of the epithelium which extends downwards into the surrounding tissue, producing a pure carcinoma. In the alveoli of the carcinoma, and in the newly formed epithelial tubules, numbers of parasites are found. Wyckham thinks that in this case we have the evidence of a pure epithelial carcinoma produced by a parasite, and considers it possible that other epithelial structures may have a similar origin.

Darier (14) describes, under the name of psorospermose folliculaire végétatante, a peculiar acne-like affection of the skin. The lesion consists in a growth of the hair-follicles and is produced by a parasitic coccidium. Neisser (13) also described coccidia in the molluscum contagiosum. Torök and Tommasole (15) have studied the bodies described by Neisser in the moluscum contagiosum, and do not regard them as parasites. They are chiefly led to this belief by the extraordinary resistance which they have to all sorts of chemical agents; and they consider them to be products of degeneration, related to the colloid substance. Pfeiffer (12) has studied the epithelial cells in herpes zoster; and he believes that they contain parasites.

Russel (26) has seen in carcinomata peculiar structures which he was able to differentiate by a special method of staining. They were intensely stained in solutions of fuschin and carbolic acid. He investigated all sorts of pathological structures with reference to the presence of the same bodies which he had found in carcinomata, but in nearly all cases with negative results. Apparently similar bodies, however, were found in a gumma of the dura mater, and in a syphilitic affection of the larynx. He found these bodies in forty-three out of forty-five carcinomata in different localities. The numbers found varied in the different tumors. Usually they were found in small groups of from three to twenty; they lay in various places in the tissue, sometimes between the epithelial cells, in the epithelial cells, in the stroma, and in the surrounding zone of inflammatory infiltration. Sometimes they were closely connected with the protoplasm of the cells; and at others they were enclosed in a clear space, and seemed to lie in a vacuole in the cell body. He regards these bodies as micro-organisms, and thinks they may play a great part in the development and extension of the cancer. Ramsey Wright (25) says that the same organisms described by Malassez, Pfeiffer and Thoma were found by Macullem and Caven, who were working in the same direction. These bodies were seen by him a number of years before, and their parasitic nature was even then suspected. Klein (36) found, in a multiple carcinoma, bodies with peculiar morphological and staining properties. He thinks that these are similar to the fuschin bodies described by Russel, and are best seen in preparations hardened in alcohol and stained with carbol fuschin. They lay inside of the tissue cells in various pathological conditions and also under normal circumstances. He thinks it probable that they are of the same nature as the elementary granules in the cells which were described by Altmann. They represent an increased size of these alimentary granules due to the assumption of fat.

Heukelom (21) investigated a large number of carcinomata, in all 200, from various regions of the body. He confirms the general description of the parasites which various authors have given. The parasites were present in all sorts of malignant tumors. He does not give a very extended description of the parasites, but simply divides them into larger and smaller bodies. The larger bodies are usually found in the cells or between them. Similar bodies are frequently found in the nucleus.

(To be continued.)

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

C. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, January 9, 1893, the President, Dr. Frederick I. Knight, in the chair.

Dr. W. W. Gannett read a paper on

CASES OF HEAT-STROKE OBSERVED IN THE SUMMER OF 1892.[1]

Dr. W. N. Bullard: I would like to ask what Dr. Gannett thinks of alcohol in these cases?

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[1] See page [illegible] of the Journal.

Dr. Gannett: I purposely omitted that point in the consideration of the treatment. The general opinion has been, I think, that the use of alcohol in these cases of heat-stroke is not advisable. In the so-called heat-exhaustion, the use of alcohol with atropia has been followed with good results. In the case of heat-stroke, the use of alcohol has not been followed with good results; and I certainly should not use it, but should rely upon strychnia.

Dr. Bullard: I meant in the etiology?

Dr. Gannett: So far as etiology is concerned, the feeling among the writers is about this: some think it is an important element in the case. The physicians who have had the greatest opportunity to study heat-stroke are in India; and they have compiled statistics, and are positive that the use or abuse of alcohol has not in any number of cases been a factor. It was not in this series of cases. There was but one case in which one could say the individual had abused alcohol. Some had drunk two or three glasses of whiskey a day; but in the majority of them there had been no abuse of alcohol at all, so that it seems that it was not to be considered as an important predisposing cause.

Dr. Bullard: I remember Dr. Wood is rather in favor of persons exposed to heat drinking a large quantity of water.

Dr. Gannett: He mentions that as being a desirable means of avoiding sunstroke; that is, in hot weather the individual should drink considerable quantities of ice-water, little at a time, for two purposes: one for the cooling effect, the other in promoting perspiration. It seems to me it is very difficult to decide a point of that sort in any way except by actual experiment. I do not think we can argue on the matter at all, for many of these cases show entire absence of perspiration. The whole question of heat production and dissipation and regulation is in a hopeless maze.

Dr. Bullard: It would be interesting to know how far the stopping of sweating could act as a danger-signal.

Dr. Gannett: I think in six of the cases reported there was an absolutely dry skin. One has only to feel of the skin, in a case of this sort, to be impressed most strongly with the stinging element of the heat, to which attention has been called by authors over and over again; not only a hot skin, but a peculiar tingling conveyed to the sense of touch when the hand is applied to any part of the body. When we have said the symptoms are dependent on increased heat, I don't think we can go farther in the present state of our knowledge, and must wait for the physiologists to determine this question in regard to heat-dissipation and heat-production. In four of the cases the patients stated positively that while they had been sweating abundantly for two or three days previous to the day before the attack, on the day before the attack and up to the time of the attack, although they still drank water, the skin was dry. Then it should be borne in mind that in some of these cases there was a moist skin at the time they were brought to the hospital.

Dr. Bullard: It is not very rare to see cases of men of a nervous temperament in the summer complaining of malaise and vertigo, who state that for a certain number of hours, and sometimes longer, they have not been able to perspire. These cases, if properly treated, get well without further symptoms. Sometimes in such cases the patient states that he had previously been in the habit of sweating, but had not sweated for some weeks; but that is rare. It is quite possible that these people are in a condition where if they continued to be exposed they might go on to further trouble and have regular sunstroke.

Dr. Gannett: I purposely said nothing about the treatment of heat-exhaustion. That is simple, and requires stimulation, the use of alcohol, the application of heaters; a hot bath is often of great help in bringing up the temperature; and the subcutaneous use of atropia by relieving the vaso-motor disturbance in the abdomen is of great help. It does not properly come under the heading of heat-stroke, but does come under the heading of effect of heat.

Dr. W. N. Bullard presented some

REMARKS ON CONGENITAL ATHETOSIS.

The word athetosis was invented by Hammond to describe a certain form of involuntary movement confined to the fingers and toes. This movement differed from other involuntary movements in several ways. In the first place, it was very slow; in the second place, it was nearly constant; and, in the third place, there was a certain amount of irregularity in it, differing, however, from the irregularity of chorea. It throws the hand into a shape quite different from that of chorea.

In using this term "congenital bilateral athetosis," I have enlarged the term athetosis, and applied it, not only to movements of the fingers and toes, but to similar movements of the whole extremities, and sometimes even of the trunk. These movements occur in children, and especially in a certain class of children who have other special symptoms; and they consist in peculiar, slow, involuntary movements, usually of the whole of the extremities, occurring constantly for long periods of time, sometimes for weeks and months at a time, with occasional intermissions. The movements are different from those of chorea in many respects, one being that they are more apt to cause large movements of the whole extremity, and again in the proportionately greater action of the extensor muscles. In this athetosis the abductors and extensors are particularly active, their action preponderating over that of the flexors more than in ordinary chorea. Moreover, in all the cases I have seen there has been a rigidity of the muscles. The athetosis described by Hammond occurred principally in adults, often in only one limb, and sometimes, but not always, followed hemiplegia. These cases are entirely different from Hammond's, in that in them it occurs congenitally or apparently so; that it involves all the limbs; and that it is not in any way, as far as we can tell, the immediate result of an apoplectic shock. This condition occurs not so very infrequently. I have records of five cases at the Children's Hospital alone, and I have seen a number of others. They are usually quite striking. After one has once seen a case, it is perfectly easy to recognize it.

The pathological anatomy of this condition is somewhat doubtful. There have been autopsies in about fifteen adult cases; and in those cases there has generally been some lesion in the basal ganglia, either the corpus striatum or optic thalamus is injured, but in some cases nothing is found except in the cortex. The probability is that it is due to some lesion or irritation in the basal ganglia. In the case of congenital athetosis, the lesion is probably of the same character, only occurring earlier.

As to the exact etiology of this condition, we know absolutely nothing. This can be said, that, in almost all cases where it occurs, we have reason to suppose a sclerosis or atrophy of the brain (I am speaking of congenital bilateral athetosis). In these cases I believe that there is almost always sclerosis of the cerebrum which probably affects the basal ganglia as well as the other portions. As to the causes of this sclerosis we are ignorant. Cerebral atrophy in children is not a very uncommon thing. A possible cause, of course, is hereditary syphilis, but that, so far as we know, in only a small proportion of the cases.

This symptom almost always occurs in children somewhat feeble-minded. In one case, however, the child was perfectly bright so far as could be tested in a child three or four years old. Whether it will later show evidence of mental feebleness I cannot tell. There is a general symptom-complex of which this symptom of athetosis forms a part. These children are almost all of them liable to be weak-minded, are paretic, cannot sit up, have practically no use of their limbs. There is rigidity of all the muscles of the extremities combined with these forced movements. The crania of these children were normal in all the cases I have seen. There were no other special malformations or abnormalities to be found. In one case there was congenital dislocation of the hip. Whether that was due to the spasticity of the muscles pulling the joint out of place or due to some injury was unknown. In that case the muscles were extremely rigid.

Dr. Bullard reported at length two cases of congenital bilateral athetosis, in one of which there was marked athetosic movements of the tongue and probably also of the *soft palate* which so far as known had *never before been described in a child.*[2]

In regard to the diagnosis of these cases it is evident at first sight in any case in which the movements can be seen.

As to treatment there is none. They are absolutely incurable so far as known at present, and they probably all depend upon disease of the basal ganglia.

Dr. Putnam: Have there been any autopsies on the congenital cases?

Dr. Bullard: There has been one lately in which the trouble was found the same as in the others mentioned above.

The relation of these cases to hereditary syphilis is still quite doubtful. I have been interested in the question of hereditary syphilis in weak-minded children for some time, and there is a certain proportion of cases in which we find some relation, but it is not a very large one. From the cases I have seen there has been a pretty strong suggestion from the histories of the cases that they might be due to that cause in many of them. But that is all one can say.

Dr. Greenough: Do you consider the history of such cases to amount to anything at all?

Dr. Bullard: When there is a long history of miscarriages and still born children I think we have certain factors which we must take into consideration. I think also that the history does have a certain bearing in these cases where we have illegitimate children, fathers deserting children. To such evidence some consideration should be given. I do not consider it anything like proof.

Dr. Greenough: Dr. Bullard is right as far as the history as he speaks of it, of miscarriages etc., is concerned, but when he spoke of the history I supposed he referred to the history got from the patients of syphilis existing, which you cannot get in the majority of cases. Of course, as you state it there is no question. The history you refer to is a very important thing.

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Recent Literature.

The Coal-tar Colors, with Especial Reference to their Injurious Qualities and the Restriction of their Use. A sanitary and medico-legal investigation. By Theodore Weyl. Translated by Henry Leffmann, M.D., Ph.D., Professor of Chemistry in the Women's Medical College of Pennsylvania, etc. Philadelphia: P. Blakiston, Son & Co. 1892.

In this essay Dr. Weyl has recorded the details and results of a research inaugurated by him for the purpose of determining the physiological relations of such of the coal-tar colors as are applicable to the coloring of articles of food and drink. The author has thus far confined his attention to the study of comparatively few of the numerous coal-tar colors, giving the preference to those which were in some manner suspicious from having caused poisoning, and to those most suitable for practical use as coloring-agents. The animals selected for the experiments were dogs, and the colors were administered by the mouth unless special reasons to the contrary existed.

The author's researches concerning the action of the nitro-colors point to the following conclusions: Only the sulphonated colors, naphthol yellow and brilliant yellow are harmless and applicable to the coloring of articles of food and drink. Picric acid, dinitrocresol, and Martin's yellow are poisonous; aurantia, suspicious. Of twenty-three azo-colors subjected to examination, only two, metanil yellow and Orange II, produce such effects when administered by the stomach that they can be considered poisonous. Some, moreover, when administered in large doses, or continuously for a considerable period of time cause vomiting, others diarrhœa, while many develop a slight albuminuria. While such cannot be classified as entirely harmless, it may perhaps be conceded, especially when the high coloring power of these bodies is considered, that the results of the author's experiments point to the improbability of the occurrence of any acute effects as the result of their employment.

During his researches the author has constantly kept in view the possibility of discovering some relation between chemical composition and physiological action, which, if it exists, may make it possible to pronounce upon the physiological action of a group of colors without subjecting each color to investigation. Reference must be made to the original work for a statement of the author's observations upon this subject. An interesting and useful feature of the work is a summary of the existing laws regulating the use of colors in the principal countries of Europe.

This essay was originally published some three or four years ago, but is now for the first time translated into the English language. Although decidedly technical in parts, it is a valuable preliminary contribution in an important department of hygiene; and thanks are due to the translator, Dr. Leffmann, through whose labors the work is now accessible to English readers.

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[2] [illegible] Bullard.

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SUBCUTANEOUS INJECTION OF MERCURY IN SYPHILIS.

FEW subjects have occupied so much space in medical literature during the last few years, as that of the treatment of syphilis by subcutaneous injections of mercury. The German journals especially have produced article after article, chronicling the results of this or that observer's experimentation with a variety of soluble and insoluble preparations. The method has been tried to a greater or lesser extent in almost all the Continental hospitals which offer shelter to syphilitics; and if the procedure has not yet reached a point where its superiority to other methods is apparent, it is not from a lack of persistent endeavor on the part of experimenters.

In America the method has met with little favor on the whole, and the literature is scanty. At a meeting of the American Dermatological Association in 1889, the sense of the majority was decidedly against its extended use in its present form, and most of the speakers advocated its restriction to cases of great urgency or stubbornness. The lack of hospital accommodation for syphilitic patients in this country has undoubtedly prevented American physicians from investigating the question more thoroughly for themselves.

At a meeting of the Philadelphia County Medical Society on March 8, 1893, Dr. L. Wolff presented an interesting paper embodying the results of his experience with this method. It is well known that the first experiments with this medication were made with corrosive sublimate and other *soluble* preparations of mercury. Later it was found that *insoluble* salts were rapidly absorbed after injection, making their appearance in the urine, and often causing salivation and other toxic effects of the drug. The method is therefore divided into a treatment with soluble, and with insoluble mercurials. Wolff has employed the injections in a large number of cases of early and of "secondary" syphilis, and although repeatedly abandoning it on account of the pain caused, he has always had to revert to it in order to satisfy his patients, who preferred it to the slow results and digestive disturbances caused by the older methods.

He begins his injections of corrosive sublimate in the intrascapular region of one side, and continues down the back in the costal interspaces. The effect on open primary lesions, enlarged glands, macular eruptions and ulcers of the pharynx he describes as almost magical. All these lesions will disappear in a week or ten days. In specific iritis and choroiditis the same results are observed, and it is in these two latter affections that the method finds its greatest value. Papular eruptions are more rebellious requiring a few weeks' treatment before they disappear. He never uses less than a one-fourth-grain injection at a time, filling a syringe of a capacity of twenty-five minims with a one-per-cent. solution in distilled water, and making the injections daily. After eighteen or twenty injections, if the gums become affected, the injections are made but once in two, three, or four days, when the unpleasant symptoms rapidly disappear. The average number of injections is twenty-five. Wolff asserts that in the thousands of these injections that he has made, he has never yet seen a case where they were followed by abscess or sloughing. The record of relapses is not so favorable, however. In forty per cent. of the cases recourse had to be had to the inunction method, before the tendency to relapse had been overcome.

The injections of the insoluble preparations are said to have the merit of a more permanent effect than the soluble. They are slowly converted into soluble substances from the dépôt of deposit, and it is to this slow and continuous absorption that their efficacy in preventing relapses is to be attributed. The oleum cinereum or gray oil of Lang, is the insoluble preparation preferred by Wolff, of which he injects 0.1 c.cm. once a week for the first four to six weeks. Macular eruptions usually fade after the second or third injection, papular ones after the fourth or fifth. Of interest is his remark that while it might be well to disinfect the needles and syringe with a four-per-cent. carbolic solution before using, he has found that there is little danger in private practice when this precaution is not observed. He cautions against yielding to the temptation of using too much gray oil when the results appear slow, as the mercury is but slowly absorbed, and a dangerous amount may be accumulated. Great care should be taken of the mouth and teeth and the injections discontinued when the slightest effect is produced upon the gums. His conclusions are that in cases where there are urgent symptoms, injections of one-fourth of a grain of corrosive sublimate should be used, at first daily and afterward every other day, until about twenty-five injections have been given. If then, there are any symptoms remaining, he would resort to injections of the gray oil once a week until six or eight injections have been given. If further manifestations of the disease occur, another series of injections with gray oil should be instituted. The gray oil is less painful and more likely to afford immunity from relapses.

In the discussion that followed Wolff's paper, Dr. J. William White took strong exceptions to many of the reader's conclusions. He pointed out that it is not true that the hypodermatic method is now used exclusively in medical centres in Europe, although a great deal of experimentation is constantly carried on. Many of the best men in Germany, together with Fournier in France, and Hutchinson in England have deprecated its routine employment. He also remarked that the universal experience had been that patients objected so strongly to the injections, that much difficulty was found in keeping them up. The evidence that injections of corrosive sublimate do not produce permanent cures and are attended by a larger number of relapses than other methods, is now quite considerable.

The objection to the use of insoluble salts is, that as they are slowly converted into a soluble form, it is only another way of giving a soluble salt; and as the absorption cannot be gauged after the preparation has been deposited beneath the skin, no more unscientific or inaccurate method can be imagined. Dangerous symptoms and cases of death have been reported from this method, where the mercury remained for a time inert under the skin, and was at length absorbed in large quantities. Pain and abscesses are also disadvantages. White believes that it should be held as a reserve treatment. A case where the digestive tract rebelled against mercury ingested, and where inunction produced a severe dermatitis, would be a proper one for the employment of hypodermatic injections. Several other speakers who followed were inclined, from a slight experience with the method, to adopt a more favorable view of its results.

It is only by the accumulation of a large amount of data, that the place belonging to this method can be determined. The inunction method[1] is still easily first in efficacy and reliability, and at the present time it does not seem likely that it will be obliged to cede its position to hypodermatic injections. While a trial *of the latter method* as a matter of experiment is still most desirable, there is not sufficient evidence to warrant us in preferring it to the older methods; and the dangers that it occasionally offers, should be kept constantly in view.

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THE *LANCET'S* REPORT UPON THE WATER-SUPPLY OF CHICAGO.

In view of the conflicting statements which were published during the past year in regard to the water-supply of Chicago, the probability of a large concourse of foreign visitors and the continued prevalence of cholera upon the Continent of Europe, the appointment of a special commission of investigation by one of the foremost medical journals of Europe needs no apology. Such a mission can only accomplish good results in the end.

The reasons which led to the investigation are stated in the *Lancet's* editorial of April 8th, and had reference mainly to the adverse criticism upon the Chicago water-supply which had been published during the past year. "Our object," says the *Lancet*, "has been the practical one of ascertaining as far as possible what risks, if any, are involved in the visit of our fellow-countrymen to Chicago, and of contributing to the success of the exhibition by such counsels as may enable visitors and their entertainers alike to be on their guard against such dangers as may be avoided or minimized by vigilance and well-directed observance of the laws of health."

The agent of the *Lancet* was instructed to make a full investigation, and to collect samples of water at several specified points, for analysis by such chemists as should be appointed; each sample was divided, one-half being examined by the *Lancet's* chemist, and the other portion by Prof. Wm. Crookes, of London.

The report embraces a sketch of the drainage and water-supply of Chicago, which in common with several other cities upon the great lakes — Toronto, Milwaukee and Cleveland — takes its water-supply from the lake and disposes of a considerable portion of its sewage into the same body of water. Several appendices accompany the report, containing a description of the sewerage-system of the city, official communications from the city authorities, and statistics of mortality from typhoid fever for the past three years.

Thirty-six samples of water were taken upon two different occasions; and of this number several were lost by freezing and fracture of the bottles. The whole number finally examined at London was twenty-four.

A portion of the samples were collected from the lake, at points near the water inlets, and from the locality selected as a dumping-ground for the sewage sludge and dredgings of the foul deposits of the river-beds. Other samples were taken at different points upon the Chicago River and its north and south branches; while others still were samples of smaller water-supplies, including the Waukesha-Spring water, which is to be furnished as drinking-water at the Exposition.

In consequence of the length of time occupied in transmission of the samples, no bacteriological examination was made.

As an introduction to the chemical portion of the report, the following aphorism deserves special notice, in consequence of its application generally, as well as to the case in hand:

"The value of chemical analysis is chiefly due to its affording a very substantial ground of inference. Typhoid fever, cholera and diarrhœa are the principal disorders which are disseminated by sewage-contaminated water; and, in practice, water receives such germs from sewage only. If, therefore, sewage-contamination can be detected by any means, it is certain that the contaminated water is unsafe for drinking-purposes, however innocent the actual sewage matter discovered may itself be; for the vehicle which conveys innocuous sewage to-day may convey pernicious germs to-morrow. A water which is chemically impure, if the impurity is traceable to sewage-contamination, must be an object of distrust; so also must a water which is excrementally polluted, even if chemical analysis fails to show evidence of this pollution."

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[1] See Editorial, April 8th.

In the first table the analysis of fourteen samples is presented, varying in character from the nasty liquid obtained from the south branch of the Chicago River near the stock-yards, and befouled with their filthy sewage, to the comparatively pure water of Lake Michigan, which, as shown by the analysis, is naturally much purer than the water-supply of London. It would have added much to the value of this analysis of the lake water, if the normal condition of the water, at points fifty or one hundred miles north of Chicago and remote from either shore could be determined as a standard of comparison. Analyses published in the *Lancet*, as made in 1881 and in 1893, present a striking similarity, except in the chlorine contents, which, in an enormous body of water, having an extreme depth of nearly nine hundred feet, could hardly be expected to present marked variations from year to year.

The special points brought out by this report may be stated briefly as follows:

The existence of an unlimited supply of water.

The disposal of a considerable portion of the city's crude sewage directly into the lake from which this supply is taken.

The water-works are designed with the view of pumping direct to the population, without filtration of the water. "This is the weak spot in the city's armor; and to this we desire in the most effective manner possible to draw the serious attention both of the citizens and of the urban authorities."

Special comment is made in the report upon the very common practice in the United States, of using ice in drinking-water by dissolving it directly in the water, and such practice is condemned throughout the report in the strongest terms. Herein the report is incomplete, from the fact, that while great pains were taken to examine the sources of pollution of the water-supply, no care appears to have been taken to examine the sources from which the ice was obtained, nor the ice apart from its source. Undoubtedly, danger may exist from this cause; but the extent of the danger appears to have been largely overestimated in London. This phase of the investigation is by no means a new one. The experiments and examinations of Nichols, of Prudden, of Drown and others have been published; but thus far no widespread epidemic has ever been traced to this source.

The letter of the Health Commissioner of Chicago, dated March 7, 1893, furnishes a remarkable episode in the report, as a contribution to the etiology of typhoid fever. If only five per cent. of the deaths from typhoid fever were ascribed to the water-supply, and the balance mainly to want of acclimatization, Chicago presents an unusually interesting field for study.

It is a matter of congratulation that measures are rapidly progressing whereby the drainage of Chicago will eventually be diverted entirely from Lake Michigan, by means of a large water-way which will convey all the sewage to the Illinois River, and thence to the Mississippi.

In concluding, the report sums up as follows: "The water supplied to Chicago from Lake Michigan is of good quality throughout; and provided that it be filtered efficiently, and boiled, no chemical objection to its use as a potable water, on the score of organic impurity, can be raised. That it is liable to very serious pollution so long as the vilest refuse of the city is thrown into the lake has already been pointed out; but there is no evidence to be gleaned from the results of chemical analysis that this, up to the present time, has actually been a source of mischief to the water. There is not sufficient information for considering accurately the effects upon health, though the high death-rate of the city from typhoid fever needs inquiry." The spring-waters are commended, as preferable for drinking-purposes.

The conclusions of this investigation are certainly milder in their general tone than the statement of the observations and results obtained would have warranted.

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MEDICAL NOTES.

Immigration has been increasing rapidly of late. On April 1st 6,000 arrived in New York, whereas in February only 12,000 landed in all ports during the month. Of the six thousand, one quarter came from Hamburg, and nearly a half from Italy.

Cholera. — The disease which was present in Paris and the suburbs, and which was called cholera, cholerine and diarrhœa, broke out a few weeks ago in L'Orient, a suburb of Paris, and has been increasing in extent. In Russia, cholera has revived to a serious extent, and several cases are reported in Gallicia.

Haffkine, who has been trying his method of inoculation in India, has written to European papers saying that positive results have been obtained, which will be published on his return.

A Legal Definition of Expert. — The Supreme Court of the State of Illinois includes the following in an opinion recently given: "A practising physician who is shown to be a graduate of a regular college and to have practised his profession for many years, is competent to give his opinion upon a hypothetical question, setting forth the symptoms of a deceased person, whether the death was from the effects of arsenical poisoning, although he may not be shown to have had any case of such poisoning. A medical witness, in giving his opinion as an expert, is not confined to opinions derived from his own observation and experience, but may give an opinion based upon information derived from medical books."

NEW ENGLAND.

The Board of Health Exhibit. — The Massachusetts State Board of Health has sent to Chicago an exhibit, in which the work of the Board in connection with purity of water-supplies will be illustrated. The exhibit will also contain maps and charts showing the history of infectious disease in the State.

Sickness at Harvard College. — The regent of the college has published a statement showing that the health of the student body is excellent. There have been five cases of measles, but the report that there was much sickness in the college was unfounded.

NEW YORK.

Medical Experts' Evidence was the subject of discussion at a meeting of the Society of Medical Jurisprudence held April 11th. The principal paper of the evening was by Dr. Landon Carter Gray, who spoke particularly of the popular prejudice against the medical expert writers. "One way to remedy this evil," he said, "would be to ask each medical expert, while on the stand, for his professional opinion of the other experts, but this plan would not do because of the cry of 'professional jealousy' which would be raised. Another way would be to show the competency or incompetency of an expert by a rigid cross-examination. Another plan would be to bring outside doctors to establish the reputation of the experts; but it would be difficult to get men to come forward and give the desired testimony." After stating that Guiteau, who was now universally acknowledged to have been insane, was hanged on the testimony of a mob of political experts, Dr. Gray proposed the two following plans, which he believed would prove effective: First, in trials not by jury, let the judge select one or more competent experts to sit with him on the bench in an advising capacity; second, in trials by jury, let the medical experts called on both sides hold a conference before the trial, so that they can agree on the facts from which they are to be asked conclusions. There was a general discussion of the paper, which was opened by Judge Willard Bartlett of the Supreme Court in Brooklyn.

Dr. Haynes Lock Richardson died April 12th from abscess of the kidney. He was born June 22, 1828, at Corinth, Vt. He attended lectures at the New York Medical College and the Castleton Vermont Medical College, and after graduating from the latter practised for a time at Montpelier, Vt. In 1862, he volunteered as a surgeon in the Thirteenth Vermont Regiment, and at the close of the war settled in New York. During the administration of President Harrison he was one of the examining surgeons of the Pension Bureau. He continued in active practice until 1890, when he retired. Dr. Richardson leaves a son, Dr. Waldo H. Richardson, and a daughter who is the wife of Richard Van Cott, cashier of the New York post-office, and a son of Postmaster Van Cott.

The Death-Rate. — During the week ending April 15th, the number of deaths reported was 1,091, which is 154 less than in the preceding week, although 53 above the average for the corresponding week during the past five years. It represents an unusual death-rate of 30.31 per thousand of the estimated population, as against 28.85 the annual death-rate for the corresponding week for the past five years. The number of deaths reported from influenza was 31, an increase of nine over the previous week. The deaths from pneumonia were 293, which is 11 less than in the preceding week, but 112 more than the average for the corresponding week of the past five years. There was three more deaths from typhus fever than during the week ending April 8th. The number of births reported for the week was 934.

◆

Miscellany.

THE METRIC SYSTEM.

As an easy way of writing prescriptions in the metric system, Dr. E. H. Long[1] suggests that the number of doses in the prescription be made fifteen or sixteen, the number of grains in a gramme. Then the *same figure* that expresses the *single dose* of any ingredient *in grains* expresses also its *total quantity* in *grammes*. The following will illustrate this, the same rule obtaining as well with *minims* and *cubic centimetres*:

[illegible]
℞ Potassii bromidi (single dose [illegible]) . . [illegible]
Morphinæ sulphatis (single dose [illegible]) . [illegible]
Spiritus ætheris nitrosi (single dose [illegible]) . [illegible]
Aquæ q. s. ad (teaspoonful dose) . . . . . [illegible]
Sig., etc.

Sixteen doses are sufficient in many cases for one prescription, and the quantity of the dose, whether a teaspoonful, a dessertspoonful, or a tablespoonful, is immaterial so long as the number of doses is the same. To order twice the number of doses, it is necessary to double the number expressing the quantity of each ingredient.

This plan would exactly suit the present sizes of bottles: thus, sixteen teaspoonful doses will make two fluid-ounces; sixteen dessertspoonfuls, four fluid-ounces and sixteen tablespoonfuls, eight fluid-ounces.

◆

POLITICS AND PUBLIC HEALTH.

The following comes from Topeka, Kan:

"A New Health Board. *Governor Lewelling Will Make a Place for Six Populist Doctors.* — The State Board of Health is soon to be reorganized by Governor Lewelling. Dr. R. C. Musgrave of Girard, Dr. E. A. W[illegible] of Olathe, and Dr. Andrew Sabine of Garden City, who were appointed a year ago by Governor Humphrey for a term of three years, were not confirmed by the senate, and will be removed to give place to Populists. The terms of J. Milton Welch of LaCygne, Dr. G. H. T. [illegible] of Atchison, and Dr. D. C. Jones of Topeka expire this month, making six places on the board to be filled by Governor Lewelling, while three Republicans hold over. As soon as the new members are appointed a new secretary will be elected to succeed Dr. O'Brien. Governor Lewelling has given it out that he will dictate the appointment of secretary, though he is elected by the board and there are a number of candidates for Lewelling's indorsement. Dr. J. W. Donaldson is recommended for the position by almost every physician in Topeka, and Dr. Patee, Dr. Warner and Dr. [illegible] are also candidates. The secretaryship draws $2,500 a year, and is the only salaried position connected with the office."

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[1] Medical News, March [illegible].

It is hard for one unaccustomed to the peculiar political and social atmosphere at present existing in Kansas, to estimate whether there is more of the tragic or the comic about such an announcement as the above.

Perhaps as the Populists are a less important political factor than they were a short time ago, doctors of some other political affiliation may be given the care of the public health for a time.

◆

THE HAMBURG WATER-SUPPLY.

THE water-supply of the city is receiving a much-needed reformation.[1] The improvements which are nearing completion consist of four large subsiding-basins and eighteen filtering-beds on the principle of downward filtration through fine sand. The water will be taken from a point 2.4 kilometres farther up-stream, so as to diminish the danger of contamination with sewerage effluvia. The subsiding-basins are 340 metres long by 20 metres wide and 2 metres useful depth, with a capacity of 78,500 cubic metres each. The water is allowed to settle twenty-one hours before it is drawn off into the filtering-beds. The filters are eighteen large rectangular open basins, built of brick and cement on a clay base. The basins have been built with slanting walls on account of the marshy soil in which they are laid, and because a slanting wall excludes the possibility of leakage between the sand and the wall better than vertical ones. Each basin has a surface 7,500 square metres, and a capacity of furnishing 11,250 cubic metres of water per day at a filtering rapidity of 62.5 millimetres per hour.

The arrangement of the filter is as follows: A layer of gravel and stone lies undermost to a thickness of 0.6 metre. A layer of sand one metre in thickness is spread over this. The water is kept to a depth of 1.1 metres over the surface of the sand. The gravel and stone are laid in layers of graduated size, increasing from above downward. The sand and stone are well washed in revolving cylinders before being laid in place. The inlet pipe to each filtering-bed is constructed with an automatic device, by which the water is kept at a constant depth of 1.1 metres above the surface of the sand. The outlet pipe is so arranged that the rapidity of filtration is under good control, and that the filtrate from each basin may be examined separately. This important construction provides that any one, or any number of basins, may be excluded if found faulty. From the filtering-beds the water will be conducted to large covered basins, which are designed only for storage, until the water can be pumped into the city mains.

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RESOLUTIONS OF THE MEDICAL STAFF OF THE FREE HOSPITAL FOR WOMEN ON THE DEATH OF DR. CHARLES P. STRONG.

Whereas, Death has removed Dr. Charles P. Strong from among us, and thus taken from our Staff a most zealous, efficient and painstaking member; therefore,

Resolved, That by his death we have lost a surgeon, faithful and prompt in the discharge of the duties of the several positions in which he served this institution, as House-Surgeon, Surgeon to Out-Patients and Assistant Surgeon; that in the latter position he showed rare skill and tact and that all his associations with this Hospital were characterized by great tenderness and sympathy to the patients, kindness to the nurses, and courtesy and good feeling to this staff. That during his many years of service in this Hospital he won the respect and esteem of all who had the good fortune to come within the sphere of his influence;

Resolved, That these resolutions be entered on the records of this Hospital, and copies be sent to his family and to the *Boston Medical and Surgical Journal*.

◆

Correspondence.

LETTER FROM MALACCA.

MALACCA, March 10, 1893.

MR. EDITOR: — In the march of commercial and political progress this ancient city has come to occupy a very subordinate position. These three cities — Malacca, Singapore, Penang — form the Government of Straits Settlements, Singapore the capital.

The colonial surgeon, Dr. Freer, has recently been sent here, from Singapore, to take the place of the medical officer lately removed to Penang. He kindly drove with me to visit the general hospital — about two miles, through bananas, palms and rice-fields, by a perfect road, of which there are many in the colony. The grounds are beautiful — a pleasing picture to the eyes — flowers, walks, drives; neat residence for the apothecary (a Portuguese-Malay). The buildings are of wood, with roof of attap (thatch of banana-leaf). Formerly tiles were used (as now in the city houses); but, the beams, having been eaten by a beetle, fell; since then the native style of covering has been thought better. The wards are of one story — three in one separate building — about twenty persons being in one ward. There are accommodations for 400 Chinese (or Asiatics), though only 200 are here now (males). There is a ward for females (a sort of lock-hospital), with two inmates. There are many cases of beri-beri (an Indian word, used because the patients walk like a sheep), for which the use of tonics and alteratives is the general line of treatment. Some investigators say they have found a microbe causative. There are also many severe ulcers, chiefly on the leg, chronic: soaking in warm bichloride solution seemed to have effect to heal the sore surface. The European ward will accommodate thirty. It is empty at present. The charge for subordinate government officials is here one dollar (Mexican) daily; for foreign sailors, $1.25. Cholera and small-pox hospitals are separate structures. There is no cholera here now; even during a former severe epidemic among the natives, the Europeans did not suffer at all.

The sewage material is carried away. There are excellent drains in the grounds to carry off the water from excessive rain. There were several of the so-called traveller's palms — owing its name to the fact that its leaves, overlying each other so that the whole tree resembles a gigantic fan, catch rain-water, which the unfortunate traveller may use to sustain life, when his commissariat has not been provided for in a proper manner.

Although the temperature is about 80° F. the entire year, the mornings, evenings and nights are pleasantly cool — so that this climate, as at Singapore (Tiger City) is preferable to that of Saigon, Hong Kong and Shanghai (much farther north), except perhaps for two or three months in midwinter. Water-works have lately been put in at Singapore; and the same is being done here. Rain is the source of supply expected. Vaccination is practised on a large scale by the Government. An inspection of cattle, for mouth and foot disease, on importation and previous to killing, is part of the surgeon's duties at present. Beef, eighteen cents (Mexican) paid on board.

Very respectfully, F. B. S.

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[1] M. J. Rosenau, Assistant Surgeon, M. H. S. Abstracts, March 31st

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

No. 28 East 58th St., New York, April [illegible], 1893.

Mr. Editor: — At a recent meeting of the Executive Committee of the Third Congress of American Physicians and Surgeons, it was decided that three afternoons and one evening of the Congress be assigned, in sessions of one and one-half hours each, to seven of the fourteen participating organizations, and that each Society selected shall be requested to prepare its own programme, and select its own speakers.

The selection of the Societies under this resolution, to prepare programmes for the Third Congress, was made alphabetically, as follows; (1) Anatomists, (2) Climatologists, (3) Dermatologists, (4) Genito-Urinary, (5) Gynæcologists, (6) Laryngologists, (7) Neurologists.

The Ophthalmologists, Orthopædists, Otologists, Pediatrics, Physicians, Physiologists and Surgeons under this resolution will in like manner prepare programmes for the Fourth Congress.

The President and the Secretary of the Congress, and the Chairman and the Secretary of the Executive Committee, were made a Standing Committee to arrange the details of the Congress.

Dr. L. C. Gray was selected Chairman of the Executive Committee, *vice* Dr. William Pepper, resigned.

It was further decided to hold the Congress in Washington, D. C., on the last Tuesday in May, 1894, and the three succeeding days.

Yours truly,
Newton M. Schaffer,
Secretary Executive Committee.

RECORD OF MORTALITY

For the Week ending Saturday, April 8, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from. Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,827,396	1183	417	10.72	24.12	[illegible]	[illegible]	[illegible]
Chicago . .	[illegible]	—	—	—	—	—	—	—
Philadelphia .	[illegible]	[illegible]	140	8.74	15.96	.95	2.09	.76
Brooklyn . .	[illegible]	—	—	—	—	—	—	—
St. Louis . .	[illegible]	—	—	—	—	—	—	—
Boston . .	[illegible]	[illegible]	60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Baltimore . .	[illegible]	—	—	—	—	—	—	—
Cincinnati .	[illegible]	—	—	—	—	—	—	—
Cleveland .	[illegible]	—	—	—	—	—	—	—
Pittsburg .	[illegible]	—	—	—	—	—	—	—
Milwaukee .	[illegible]	71	34	[illegible]	[illegible]	[illegible]	[illegible]	1.41
Washington .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.04	—	—
Nashville .	[illegible]	[illegible]	11	[illegible]	[illegible]	[illegible]	[illegible]	—
Charleston .	[illegible]	—	—	—	—	—	—	—
Portland . .	[illegible]	[illegible]	3	13.33	6.66	—	—	—
Worcester .	92,313	32	[illegible]	[illegible]	[illegible]	—	3.13	3.13
Lowell . .	82,455	49	[illegible]	[illegible]	[illegible]	[illegible]	2.04	—
Fall River .	[illegible]	[illegible]	12	10.71	21.42	[illegible]	—	[illegible]
Cambridge .	[illegible]	[illegible]	4	[illegible]	[illegible]	—	—	3.85
Lynn . . .	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Springfield .	47,052	14	3	14.28	28.56	—	—	—
Lawrence .	45,910	—	—	—	—	—	—	—
New Bedford .	[illegible]	[illegible]	11	13.65	18.22	—	[illegible]	—
Holyoke . .	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Brockton .	32,783	9	[illegible]	11.11	—	—	—	[illegible]
Salem . . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Haverhill .	30,065	13	5	—	53.83	—	—	—
Chelsea . .	[illegible]	[illegible]	1	—	[illegible]	—	—	—
Malden . .	[illegible]	[illegible]	1	7.69	15.38	—	—	—
Newton . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—
Taunton . .	[illegible]	[illegible]	1	14.28	—	—	—	—
Gloucester .	26,008	4	[illegible]	—	—	—	—	—
Fitchburg .	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Waltham .	20,942	8	[illegible]	[illegible]	[illegible]	—	—	—
Quincy . .	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Pittsfield .	18,294	4	[illegible]	—	[illegible]	—	—	—
Northampton .	[illegible]	[illegible]	1	—	33.33	—	—	—
Everett . .	[illegible]	[illegible]	1	—	—	—	—	—
Newburyport .	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Amesbury .	13,561	1	[illegible]	—	—	—	—	—

Deaths reported 2,[illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) [illegible], acute lung diseases [illegible], consumption [illegible], diphtheria and croup [illegible], scarlet fever [illegible], [illegible] diseases 32, whooping-cough 24, typhoid fever 19, measles 12, erysipelas 12, [illegible].

From [illegible] New York [illegible], Philadelphia, Boston, and [illegible] Worcester, Somerville [illegible]. From whooping-cough New York [illegible] Lowell and New Bedford [illegible] Philadelphia 6, New York 5, Boston and Lowell 2 each, Portland, Worcester, Fall River and [illegible] 1 each. From [illegible] New York 8, Washington 2, Philadelphia and Boston 1 each. From erysipelas New York [illegible], Philadelphia [illegible] Waltham 1 each. From malarial fever New York 2, Philadelphia, New Bedford and Newton 1 each. From [illegible] New York 4.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending March 25th, the death-rate was 20.9. Deaths reported 4,136; acute diseases of the respiratory organs (London) 394, whooping-cough 121, measles 102, diphtheria 70, diarrhœa 47, scarlet fever 41, fever 28, small-pox (London 6, Manchester and Halifax 2 each, West Ham, Oldham, [illegible]) [illegible].

The death-rates ranged from [illegible] Birmingham 21.7, Bradford 17.2, Cardiff 22.3, Huddersfield 20.8, Leeds 25.0, Leicester 16.2, Liverpool 27.4, London 20.7, Manchester 25.7, Newcastle-on-Tyne 21.2, Nottingham 15.8, Portsmouth 20.9, Sheffield 21.5, Sunderland 17.1, Swansea 16.1.

METEOROLOGICAL RECORD.

For the week ending April 8, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S... 2	30.10	41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	N.	16	[illegible]	F.	[illegible]	
M... 3	[illegible]	[illegible]	[illegible]	27	44	[illegible]	[illegible]	S.E.	S.W.	[illegible]	10	C.	O.	
T. 4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	W.	[illegible]	[illegible]	O.	[illegible]	[illegible]
W. 5	29.98	[illegible]	[illegible]	[illegible]	49	[illegible]	[illegible]	N.W.	[illegible]	[illegible]	10	C.	[illegible]	
T... 6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	[illegible]	[illegible]	[illegible]	N.	[illegible]	[illegible]
F. 7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	S.E.	[illegible]	[illegible]	O.	R.	[illegible]
S. 8	29.84	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.W.	[illegible]	17	[illegible]	[illegible]	[illegible]
☞	[illegible]													

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 8, 1893, TO APRIL 14, 1893.

First-Lieut. Charles F. Mason, assistant surgeon, U. S. A., will proceed to New York City on Monday, April 24, 1893, and report in person to Col. Charles H. Alden, assistant surgeon-general, president of the Army Medical Board in that city, for examination by the Board, with a view of determining his fitness for promotion.

Captain Daniel M. Appel, assistant surgeon, U. S. A., will be relieved from duty at Fort Bliss, Texas, as soon as possible after the receipt of this order, and will then proceed to Chicago, Ill., and report to the commanding general, Department of the Missouri, for assignment to duty pertaining to the World's Columbian Exposition, as attending surgeon for the officers and enlisted men on duty in the Exposition grounds.

Major Edward B. Moseley, surgeon, U. S. A., will be relieved from duty in the office of the surgeon-general of the Army, not later than May 1, 1893, and will report in person to the commanding officer, Fort Monroe, Virginia, for duty at that post, to relieve Captain Adrian S. Polhemus, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 15, 1893.

C. G. [illegible], detached from the Naval Rendezvous, New York, April 12th, and placed on waiting orders.

N. H. Drake, [illegible] Rendezvous, New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING APRIL 8, 1893.

[illegible], F. H., surgeon. Detailed as chairman of Board [illegible] of officers, Revenue Marine Service. [illegible]

Sawtelle, H. W., surgeon. Detailed as chairman of Board for physical examination of officers, Revenue Marine Service. [illegible]

Austin, H. W., surgeon. Detailed as chairman of Board to prepare Quarantine Regulations. March 10, 1893.

Gassaway, J. M., surgeon. To proceed to Ellis Island, New York, for temporary duty, then proceed to Cincinnati, Ohio, St. Louis, Mo., Cairo, Ill., and Memphis, Tenn , as inspector. [illegible]

Stoner, G. W., surgeon. To inspect Hogg Island, Md., for quarantine purpose. March 17, 1893.

Mead, T. W., surgeon. Detailed as chairman of Board for physical examination of officers and candidates, Revenue Marine Service. [illegible]

Carter, H. R., surgeon. Detailed as member of Board to prepare Quarantine Regulations. March 10, 1893.

Banks, C. E., passed assistant surgeon. To proceed to Halifax, N. S., for temporary duty. March 29, 1893.

Kalloch, P. C., passed assistant surgeon. Granted leave of absence for ten days. March 24, 1893.

Glennan, A. H., passed assistant surgeon. To proceed to Vineyard Haven, Mass., for temporary duty. March 6, 1893. To proceed to Cairo, Ill., for duty. March 22, 1893.

Wasdin, Eugene, passed assistant surgeon. To proceed to South Atlantic Quarantine Station for duty. March 22, 1893.

Carrington, P. M., passed assistant surgeon. To report at this Bureau for instructions preparatory to going to Hamburg. April 8, 1893.

Williams, L. L., passed assistant surgeon. Detailed for duty in office, United States Consul, Liverpool, Eng. April 5, 1893.

Bratton, W. D., passed assistant surgeon. To proceed to Buffalo, N. Y., for duty. March 6, 1893.

McIntosh, W. P., passed assistant surgeon. Detailed as member of Board for physical examination of officers, Revenue Marine Service. March 7, 1893.

Pettus, W. J., passed assistant surgeon. Detailed for duty in office United States Consul, Southampton, Eng.

Kinyoun, J. J., passed assistant surgeon. Detailed as member of Board to prepare Quarantine Regulations. March 10, 1893.

Woodward, R. M., passed assistant surgeon. Detailed for duty in office of United States Consul, Rotterdam, Netherlands.

Geddings, H. D., passed assistant surgeon. Detailed as recorder of Board to prepare Quarantine Regulations. March 10, 1893. Detailed as member of Board for physical examination of officers and candidates, Revenue Marine Service. March 28, 1893.

Hussey, S. H., assistant surgeon. To proceed to Cincinnati, Ohio, for duty. March 21, 1893. Granted leave of absence for thirty days. March 24, 1893.

Perry, J. C., assistant surgeon. To proceed to Vineyard Haven, Mass., for duty. March 13, 1893.

Young, G. B., assistant surgeon. Detailed for duty in office of United States Consul, Naples, Italy. March 6, 1893.

Brown, B. W., assistant surgeon. Detailed for duty in office United States Consul, Genoa, Italy.

Houghton, E. R., assistant surgeon. Detailed for duty in office United States Consul, Havre, France.

Nydegger, J. A., assistant surgeon. To proceed to Pittsburgh, Pa., for duty. March 6, 1893.

Stewart, W. J. S., assistant surgeon. Granted leave of absence for five days. March 8, 1893. To proceed to South Atlantic Quarantine for temporary duty. March 10, 1893. To proceed to Baltimore, Md., for duty. March 22, 1893.

Strayer, Edgar, assistant surgeon. To proceed to Portland, Me., for temporary duty. March 29, 1893.

Blue, Rupert, assistant surgeon. To proceed to Cairo, Ill., for temporary duty. March 7, 1893. To proceed to Galveston, Tex., for duty. March 22, 1893.

Oakley, J. H., assistant surgeon. Assigned to duty at [illegible]

Norman, Seaton, assistant surgeon. Assigned to duty at Evansville, Ind. April 8, 1893.

APPOINTMENTS.

Rupert Blue, of South Carolina, commissioned assistant surgeon. March 3, 1893.

James H. Oakley, Illinois, commissioned assistant surgeon. March 22, 1893.

Seaton Norman, of Indiana, commissioned assistant surgeon. April 6, 1893.

RESIGNATIONS.

Condict, A. W., assistant surgeon. Resigned, to take effect August 1, 1893.

Hussey, S. H., assistant surgeon. Resigned, to take effect June 30, 1893.

SOCIETY NOTICES.

The American Climatological Association. — The tenth annual meeting of the Association will be held in Philadelphia, Thursday, Friday and Saturday, May 25th, 26th and 27th.

J. B. Walker, M.D., *Secretary*,
1617 Green Street, Philadelphia.

Boston Society for Medical Improvement. - A regular meeting of the Society will be held on Monday, April 24, 1893, at the Medical Library, 19 Boylston Place, at 8 o'clock, p. m.

Dr. W. T. Councilman: "Secondary Infection from Gonorrhœa." Discussion opened by Dr. W. F. Whitney.

Dr. H. Jackson: "The Complications of Scarlet Fever as Observed in Fifty Cases." Discussion opened by Dr. F. H. Williams.

John T. Bowen, M.D., *Secretary*.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

Rome, Italy, September 24 to October 1, 1893.

New York, April 1, 1893.

The North German Lloyd, 2 Bowling Green, New York, offers a reduction of twenty-five per cent. to the medical men going to and from the Eleventh International Medical Congress, on Steamer *Werra*, which is to sail from New York on August 5th and September 9th, and on Steamer *Fulda*, on August 19th. Both these steamers sail to Genoa. The same reduction will be made for the return trips in October and November, on the same steamers, and for the Company's Saturday (off Bremen, Sunday off Southampton) steamers.

The Hamburg-American Packet Company, 37 Broadway, New York, 125 La Salle Street, Chicago, offers a reduction of twenty-five per cent., both out and return, for all its steamers during the year 1893.

The Compagnie Générale Transatlantique, 3 Bowling Green, New York, offers the rates which are allowed French officers, that is, $63.50 for an $80 accommodation and $91.50 for a $120 accommodation.

Five other lines decline to make any satisfactory arrangements.

A. Jacobi, *Chairman, American National Committee*,
110 W. 34th Street, New York.

EXAMINATIONS FOR THE MARINE-HOSPITAL SERVICE.

A board of officers will be convened at Washington, D. C., June 26, 1893, for the purpose of examining applicants for admission to the grade of assistant surgeon in the United States Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from at least two responsible persons as to character.

For further information, or for invitation to appear for examination, address the Supervising Surgeon-General, United States Marine-Hospital Service, Washington, D. C.

THE PAN-AMERICAN MEDICAL CONGRESS.

Section on Otology.

Communications in reference to papers should be addressed to the English Speaking Secretary, Dr. **Max Thorner**, 141 Garfield Place, Cincinnati, O.; suggestions as to work and exhibition of instruments to Executive President, Dr. **C. M. Hobby**, Iowa City, Iowa.

BOOKS AND PAMPHLETS RECEIVED.

Hirst and Piersol on Human Monstrosities. Part IV. Philadelphia: Lea Brothers & Co. 1883.

Medical Pocket Atlases; Obstetrics. Part I. Labor. Ninety-eight plates. By O. Shchaeffer, M.D. Translated by J. Clifton Edgar, M.D. New York: L. Hydel. 1893.

The Obstetric Examination; A Short Guide. By Prof. E. Credé, M.D., and Prof. G. Leopold, M.D. Edited by J. Clifton Edgar, M.D. New York: L. Hydel. 1893.

Lecture.

LECTURES ON SURGERY.

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

V.

GUNSHOT WOUNDS.

THE first point of which I wish to speak is the almost impossibility of applying the antiseptic treatment to wounds received on the field of battle. Anesthetics, in the form of chloroform, can be very easily transported; so can carbolic acid and corrosive tablets, and all other agents of that class. What, then, would constitute the difficulty in using these? It has always seemed to me that an insuperable difficulty existed in the fact that we cannot obtain sufficient water. An immense amount of water is used in antiseptic solutions — must be. The drainage and bathing of wounds, the dissolving of the poisons which are used as germicides, etc., always require much dilution. Now water is the great want on the field of battle; and unless a battle happens to be fought on the banks of a river, it is easy to see that horses and men soon consume all the water within reach, and there would be none left for antiseptics; and it would be impossible to transport it. It is bulky and heavy. Until some other method of antisepsis is found, not requiring large dilutions, it seems to me that the antiseptic problem cannot be thoroughly solved on the field of battle. Undoubtedly a good deal more can be done than was done at one time; and undoubtedly in field hospitals and in hospitals in the rear the antiseptic treatment will be carried out. A good deal, too, is accomplished now, which could not be formerly, in the adaptation of plaster-of-Paris bandages in case of fractures in transporting wounded persons. That is much more efficient than the ordinary splint, and can be applied easily.

Anæsthetics, then, we can have. Apparatus we can have to transport the wounded. Antiseptics it seems, at present, as if it would be impossible to apply thoroughly in military surgery.

There is another curious fact, which arises from the things which we have already said, which is this, that in amputations the rule, which holds true with regard to the percentage of recoveries in primary and secondary amputations, is exactly the reverse of what it is in civil life. It is a well-known fact that the pathological amputation in civil hospitals, for instance, in the case of old diseased bone, old abscess or hip-disease, or in case of an injury which has passed through certain stages of partial repair and is perhaps hopeless of further recovery, does better than a primary amputation. It has long been known that a certain adaptability of the system to the requirements and strain of an operation, was best obtained by some amount of confinement, and depreciation, so to speak, of the vital forces. On the other hand, in military surgery exactly the opposite is true. The patients who get well, get well in a much larger percentage of cases, if the limbs are cut off at once on the receipt of the gunshot wound than if left to be transported to a distant point; being transported without ascepticism, necessarily a certain amount of suppuration accompanies them, and they become secondary operations after a week or ten days, and are attended with much greater mortality. Primary operations in military surgery, secondary in civil life, are the best, where we can have the choice.

We said the other day that there were three places in which a ball did a great deal of harm — one in contact with bone; another if lodged in one of the viscera, especially one of the secreting viscera, like the liver, the kidney, etc.; and the third where the ball had penetrated and remained in one of the cavities of the body. Of the latter we propose to speak next.

By the cavities of the body we mean the cavity of the head, the chest and the abdomen. Of course a gunshot wound received upon the head may inflict precisely the same class of injuries to the skull that any other violent force does. The ball may be a spent ball, and merely inflict a contusion of the bone. In the slighter case, it may glance and make only a scalp wound. In the severer case, it may strike flat and square on the bone, and produce a punctured depressed fracture of the inner table without much damage to the outer table. This is familiar in civil life, where small heavy objects fall from a height upon the head. A spike or portion of the rigging of a ship sometimes falls from a considerable height and strikes the head, cracks and splinters the inner table, and inflicts a serious injury on the membranes, and leads to subsequent necrosis of the inner table and all its consequences, when that process is set up inside the cranium. So the ball may do the same. Going a step further, it may penetrate and be lodged in the brain; or, in an extreme case, may perforate and be shot through from side to side.

The mortality of these cases is very great; and in our late Civil War 4,350 gunshot injuries of the cranium were tabulated. Contusion gave a mortality of 16 per cent.; fracture of the inner table alone, punctured depressed fracture, 95 per cent.; depressed fracture, 35 per cent.; penetrating and perforating fractures, 80 to 85 per cent. So that it appears that where the skull is bruised and the inner table punctured, it is more dangerous than when broken over a large area and depressed, probably because the damage inside is not recognized promptly; whereas in a depressed fracture everybody feels the depression and sees what has taken place; and knows that what it is proper to do, is to raise the bone. Trephining is done, and the wound washed out, with better results. Again, the penetrating and perforating fractures gave a mortality of 80 to 85 per cent. One would think it a wonder that 15 per cent. should recover after penetrating or perforating fracture; and yet instances are on record where a ball has been lodged within the cranial cavity, and recovery taken place, and the patient carried the ball there for years. Those cases are extremely rare, but they do occasionally occur. Better is it for the patient, of course, as regards the chance of any irrigation, drainage and care, that the wound should be perforating; and there is a little better chance if he is shot through and through in the upper part of the cerebrum than if he has a penetrating wound, where the ball lodges and may descend toward the base of the brain, and lead to extravasation or softening near the ventricles.

The ordinary rules of surgery apply to gunshot wounds of the head. Cleaning and enlarging scalp

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These are unedited lectures printed from the stenographer's reports. [illegible] are made in proof, but [illegible]. They were delivered to the third and fourth classes as part of the regular course.

wounds, bearing in mind that foreign substances as well as the ball have been carried in; looking out for punctured injuries of the skull; where symptoms arise, trephining promptly and raising depressed fractures; cleaning out traumatic sinuses; and, of course, occasionally, in these modern days, one would be tempted to do the more extensive operations on the skull, as trephining and attempting to extract a ball. This extraction of a ball must be extremely difficult and uncertain; it is not often to be reached. In old times it was regarded as so hopeless that I do not think the attempt was made. In modern times we should be more likely to try to reach it.

Now, in the gunshot wounds received in the chest, the Civil War gives an enormous number: 8,715 penetrating wounds of the chest are reported and tabulated. That means that a great many more thousands probably were shot through the chest and died within a year or two unrecorded: and that these were the smaller proportion, who escaping immediate death, afterwards entered hospitals, were treated and accurately recorded.

The percentage of mortality is very large, as high as 60 to 70 per cent.; and it is not immediate, but subsequent changes that take place in the thorax which cause this great mortality. We all know that we occasionally see at this date, twenty-five years after the war — I know of one or two instances — individuals living who have been shot through the chest, and still go about, and are quite interesting objects to physicians, because they have unhealed sinuses through which air is freely drawn when they breathe, and through which a small amount of pus escapes, giving rise to necrosis of the ribs. These cases exist. They may live up to the natural limit of man's life. Of course, they are brilliant exceptions. The majority of people who are shot through the chest have some secondary pathological change take place which carries off 70 per cent. of those so injured, not one-third escaping.

In the first two or three years after the war a great many cases of brilliant recovery after gunshot wounds of the chest were reported: but as time went on, it was noticed, that, information being accurately obtained from the Pension Department, the mortality kept increasing, and that you could not assume a recovery from a gunshot wound of the chest unless five to ten years had elapsed. Of these secondary changes, the more rapid are in the form of pleurisy and empyema; next, pneumonia; next to that, gangrene and abscess; and finally, most chronic of all, the occurrence of tubercles and of pulmonary phthisis, as a remote sequence of the injury.

If a person is shot through the chest, and the ball has penetrated the lung, of course the signs of the injury are similar to what they would be from any missile received in that way in civil life. We have the rapid coming on of pleurisy and impaired respiration. We have emphysema around the track of the wound. We have cough, and almost invariably profuse expectoration of blood. The coughing up of blood in penetrating wounds of the chest is almost pathognomonic of laceration of the lung. The lung tissue having been injured, the blood escapes into the air-vesicles and smaller bronchi, and is coughed up in greater or less quantity.

As a curious matter of history, during our late war a mode of practice came up, which existed only a very short time, which was based on the supposed harmlessness of the ball, if lodged in the body and allowed to become encysted. This mode of practice was to wash the gunshot wounds of the chest superficially, and seal them up at once with some tight material, as flexible collodion, and endeavor to make the surface heal, and to close the track through which the ball had gone. One surgeon carried this on to a very considerable extent. But the success of this treatment was so small that it was a very short-lived method; and finally, if I am correct, orders were issued from the surgeon-general's office forbidding that mode of treatment to the surgeons in the field. The results were extremely disastrous. It would seem as if the thorax was the most unphilosophical place in which such a mode of treatment could be adopted. A wound would be better treated in that way, almost anywhere else, than here. A bullet shot into the chest may go through the pleura, break through the costal pleura, perhaps enter the lung; it carries in dirt and bits of cloth and perhaps other foreign bodies, produces a lacerated wound, which is contused and somewhat burnt, and which will not heal, as a rule, even if it is shot through the arm or a fleshy part of the body, much more cannot heal when in such a complicated place as the thorax. We have the functions of respiration, movement of the lung, chance of invasion of germs of all sorts through the pulmonary tract and mouth, as well as all the other chances of poisoning that must arise. We almost inevitably have emphysema, pleurisy, pneumo-thorax, sometimes empyema; and, very often indeed, an injury to a rib in the passage of the ball in. If the soldier at the moment of being struck happened to be raising the arm to fire, or to be inspiring freely, the ball might slip in without striking a rib; but in other positions the ribs would be more closely in contact, consequently there would be apt to occur either a small crumbling off of the edge of the rib, or a tearing off of the periosteum and bruising of the rib, and necrosis. This should forbid the sealing up of the wound, even if there were no deeper injuries.

It would seem to be hopeless to hunt for a ball in the thorax; and I believe it is practically abandoned. If the ball enters the pleural cavity and stays there, it drops to the bottom of the pleura and may rest upon the diaphragm. If it enters the lung, it is almost or quite impossible to reach it; and unless it happens to have smashed two or three ribs, and made so much destruction that the surgeon makes a large opening, and unless it happens to be partially spent so that it has not penetrated very deeply, it is practically not recovered from the thoracic cavity. It may get into some quiet corner and become encysted. It is more likely to provoke an empyema, or changes in the lung itself, especially pneumonia, or, eventually, tuberculous changes.

A very large number of cases of gunshot wounds of the chest involve the cutting through of the intercostal artery. That, you can see, would often take place. From this artery, although it is not a very large one, profuse bleeding can take place; and when it bleeds, it bleeds into the cavity of the thorax. The blood spurts from the artery without restraint, and pumps one side of the pleural cavity full of blood, so to speak. In fatal cases, where the hæmorrhage has not been secured, enormous quantities of coagulated blood have been taken from the pleural cavity, probably a quart or more. This injury is fatal, of course, unless the hæmorrhage can be arrested; and yet in civil life we consider that the intercostal artery, if cut in an operation, is not an artery of the greatest magnitude, and it would be thought very strange, if it could not in some way be secured. But the danger in these gunshot wounds is that the wound is not examined, the hæmorrhage is not recognized on account of the multitude of the wounded who have to be seen to and treated. The soldier may lie out long enough to have a fatal hæmorrhage occur, and the signs of its coming on may be complicated so that the surgeon may not recognize what is taking place. The blood may be slowly poured into the pleural cavity, and the lung gradually compressed, and the patient thought to be suffering from the ordinary serous effusion coming on rapidly after the occurrence of the shooting. The rapidity of the dyspnœa, accompanied with signs of loss of blood, internal hæmorrhage, should be our guide to suspect this injury. The signs of internal hæmorrhage are pallor and faintness and nausea, and also, towards the close of life, an extraordinary restlessness. These are the signs of fatal hæmorrhage that we see in civil hospitals occasionally, in severe cases; and they would exist in hæmorrhage into the pleural cavity, plus dyspnœa rapidly coming on.

What shall be done? If it can be seen early, it may be cured and the patient's life saved. If it is seen later, the patient's life may be saved, but at the expense certainly of empyema, for the clot will disorganize and eventually change into pus. The treatment, of course, should be to secure the vessel. How is this done? The vessel is hidden and retracted behind the rib, and you have a small penetrating wound to reach it through. Free incisions, then, to enlarge the wound; resecting a portion of the rib, securing the artery at all hazards. Some surgeons have succeeded very well where other means were not at hand by passing a curved needle threaded with wire suture directly around the rib, and tying down rib, artery and all together. That is a good temporary tourniquet, and does no harm. It will do for a while, and perhaps will stop the hæmorrhage permanently. It does not take long to establish a clot in a small artery; and, if the patient can be kept quiet, hæmorrhage may not come on again. Ordinarily we should enlarge the wound; explore with the finger; remove broken bone; if out of reach, resect the rib until we could tie the vessel; and having made a large opening into the pleural cavity, it would be proper at this stage to try to wash out and clear out the clot as far as possible, and treat the wound as an open case of empyema.

So treated, the patient will probably recover. It is a little startling to consider that so small an artery as the intercostal has been the cause of so great mortality in the perforating wounds of the chest. The number of cases is very large indeed.

As for the other treatment of these gunshot wounds in the chest, not much can be said except what applies to all forms of thoracic injuries. It is desirable to syringe out and cleanse the track of the ball. The ordinary treatment for pleurisy and empyema should be adopted as we are accustomed to see it in civil life. Hæmorrhage from the lung is best controlled by quieting down the respiration as much as possible, by enforced confinement of the patient, by the use of ice. I should hardly think the domestic remedies and others ordinarily given for hæmoptysis in consumption would be of any avail in a lacerated lung, lacerated by a ball and bleeding into some of the bronchial tubes; but, if we can slow the pulse by appropriate remedies, quiet the respiration, keep the patient still, use ice, perhaps gallic acid or ergot, we may have some effect in checking the bleeding.

What is going to stop the bleeding? Well, of course, the formation of a clot. The formation of a clot is what we hope for. What is to be the future destiny of that clot? That is extremely uncertain; so that, although the coughing up of considerable quantities of blood after a gunshot wound of the lung, meaning perforation of the lung, may be controlled or may diminish and cease under certain sorts of treatment, yet we cannot feel sure that it will not be resumed again in the course of the next five to seven days by the loosening of that clot and the resumption of the more active function of the lung; or the decay of the clot and in that way the hæmorrhage recur. On the other hand, it is easy to be seen that the track of a ball through the lung, even if it does not led to great external bleeding through the mouth, lacerates many vessels, and leads to the formation of numerous miliary clots through the lung itself. The destiny of these, again, it is difficult to predict. In a very healthy person they may be absorbed, and in a person not healthy they may lead to precisely those changes in the lung which the infarction of the lung does in embolism, in pyæmia, and septic states; and the patient may perish with septic symptoms about the second week after the receipt of the injury. Chronic pneumonia may come on, and go on to slow absorption, or run the patient down into phthisis. It is not strange that, while early treatment of these cases gave a good percentage of recoveries, five years afterwards there should be a large percentage of deaths.

We come next to the abdomen. Modern surgery has thrown some new light on perforating wounds of the abdomen, and given us some hope in new methods of treatment.

We may divide these gunshot wounds about the abdominal cavity into three classes: First, those that do not penetrate; which glance over the abdomen, leave a large ecchymosis, and if the ball is large, lead to rupture of a viscus in the abdominal cavity; the next class, those which actually penetrate the abdominal cavity, with or without penetrating one of the viscera; and the third class, where the patient is shot through and through.

Now it is a curious fact that a soldier in health, if he has not been reduced, has been well fed, is in a first and well-conducted campaign which has not lasted too long, having slept in the open air for weeks, marched and got strong and firm, is in a physical state in which he will resist an intense injury just as any animal will, and make recoveries not to be dreamed of in civil life, or in cities. A case was reported recently in our medical journals of a soldier shot through and through. He was in fine physical condition. The ball entered behind, just below the diaphragm, and came out near the umbilicus. He recovered without any surgical interference.

What happened on the receipt of this gunshot wound of the abdomen is shown by what occurred soon after the receipt of the injury — jaundice, blood in the alimentary canal, discharged by the rectum and showing wound of the intestine; blood in the urine, showing that the kidney had been wounded; and vomiting of blood, showing that the edge of the stomach had been struck. He survived it all. The ball went through and through. He recovered at the end of twenty-eight days without any surgical operation having been performed.

In the older surgeries you will find that, as a rule, abdominal injuries were all given up to expectant treatment, so-called; that is, you cleansed as well as you could, kept the parts quiet, tried to check peristalsis by the use of opium, and trusted to time to accomplish what it could.

Now it is not every ball that goes through the intestine that causes extravasation into the peritoneal cavity. Some do; some do not. As they pass through and through, the mucous coat of the bowel pushes out of the wound and forms a pouting, like the little mass of granulations you see upon old sinuses, and thus plugs the wound; and if peristalsis is held still, it may be plugged permanently, and no extravasation take place.

Hennen and Larrey give a full hundred cases in their experience, where the patient was shot into the bowels, the ball disappeared, and was passed by the rectum after a certain length of time.

Gunshot wounds of the bladder, as you know, have been quite a number of times the cause of a formation of calculus around the ball, and the ball found in the centre of the calculus when the patient subsequently has been operated on for stone in the bladder; so that cases are to be found over and over again in all the old treatises in which penetrating wounds of the abdomen, the peritoneal cavity, the intestines, the bladder, have been recovered from. Not that this should discourage us from operating. I only say this to show that, while laparotomy is so popular as it is, we still have a certain percentage of cases which will recover without it, and give us some hope if that operation cannot be done.

The statistics of laparotomy for gunshot wounds of the abdomen up to two years ago in New York City, which was, I think, the first place where successful laparotomy was done for gunshot wounds of the intestines, are given by Dr. Bull as follows: cases treated without operation, 1876 to 1884, in the Chambers Street and New York Hospitals, mortality 76.4 per cent.; cases treated by laparotomy, 1884 to 1889, Chambers Street and New York Hospitals, mortality 76.9 per cent. Absolutely the same. He gives statistics of the Roosevelt Hospital: without operation, mortality 85 per cent.; with operation, mortality 81 per cent. I mention these things not to discourage you from interfering, but to call your attention to two points: one is that people get well sometimes without operations; and in the second place to try to point out the particular reasons why we may fail after a laparotomy for a gunshot wound, and why there are so many chances against us.

In the first place, we have always in the penetrating wound of the abdomen intense shock. That is against us a good deal. The patient collapses early, within the first two or three hours usually. It is one of the signs of the injury. There is a little hole! You cannot be always sure whether it has gone in. Presently the patient begins to sink. It has gone in, and probably internal hæmorrhage is taking place. The operation has to be done in a state of shock, as a rule. Why? Because we cannot afford to wait for an hour or a minute, if we are going to do any good. Either we must decline to operate because the patient is too far collapsed, or, if we are going to do anything to avert peritonitis and arrest mesenteric hæmorrhage, we must do it at first; and all statistics, so far as they have gone, if they prove anything, prove this, that it is the early laparotomies that have saved the cases, and the later ones that have been fatal. A good many cases have been operated on after twelve to sixteen hours; they are usually fatal; that is the reason. On the other hand, the most successful ones, just as in strangulated hernia, will bear an exact ratio in success to the length of time during which the strangulation has existed, or the wound has existed. We have great shock, and must operate in a state of shock.

The next difficulty is this: we open the abdominal cavity, and have got to have a prolonged operation. It is pretty well established, I think, that the success in opening the abdominal cavity for ovariotomy, or any other procedure there, is proportionate to the briefness of time and the degree of exposure to which the bowels are subjected to the air, or changes of temperature, or dryness; and a gunshot perforating wound of the abdomen means a prolonged operation. It is inevitable. This must inflict a very great secondary shock on the patient; and there are comparatively few who can stand it and survive beyond a few hours after the completion of the operation. I merely instance this to insist upon the fact that the surgical treatment of gunshot wounds of the abdomen by laparotomy must always be accompanied with intense risk. It is a risk we have got to take. The operation always must be done promptly and in a state of shock; it always inflicts severe secondary shock on the patient; and I think the percentage of recoveries will be, for a long time to come, small. At the same time, I would not discourage you from attempting it; because in many cases it is imperative that it should be done. You need not, however, despair of the patient because it cannot be done; because sometimes such cases pull through without operation.

In case an operation is done, there are various difficulties that present themselves. It is easy enough to find the opening in the abdominal wall, put in a guide, enlarge the wound, open the abdominal cavity freely and see what you can find. You find a difficult hunt before you, of course, — the intestines coiled about; hæmorrhage taking place in two or three obscure points far back towards the mesentery; frequently vessels of the mesentery injured near the spinal column; and then the finding of perforations. There are two methods: one proposed by Dr. Senn, which is to inflate the rectum with some innocuous gas or air, and see if it can be detected escaping at some point in the abdominal cavity, thus guiding you to the wound; the other method is to turn over, and search over, the entire abdominal contents. That process has been named evisceration: a terrible name; but, according to the directions given by some surgeons, it is practically what is done. The intestine is searched from end to end, turned and brought to the light — a lengthy, difficult process, involving terrible shock and terrible delay and terrible exposure; and few patients, of course, can survive it. After all your care and searching, it may happen that a little point has escaped, which is subsequently the seat of hæmorrhage or extravasation. Moreover, to be enumerated in the difficulties, is the fact that you frequently find three or four loops of the intestine lying upon each other, perforated through in six or eight holes. It is an enormous task to repair them; bringing the peritoneal surfaces together so that they will cohere: and it is a long task and one very trying to the endurance of the patient.

Hæmorrhage is found in almost all the cases, considerable hæmorrhage. When you think of the vascular distribution to the intestines, how copious it is; when you think how closely they are packed together, it seems as if vessels could hardly ever escape in the passage of a ball into the abdominal cavity. They do not. Three or four bleeding points are almost always found. If the viscera are not penetrated, death may take place simply from hæmorrhage, provided the bleeding is not arrested by operation.

We have the intense shock at first, then the signs of faintness from hæmorrhage; and if the patient lives long enough, the lightning-like process of peritonitis, which is intensely painful; and, finally, death by collapse on the second or third day.

It is difficult sometimes to say when a little bullet-wound exists in the abdominal wall, into which the probe passes freely, whether the ball has wounded viscera or vessels. It is impossible to tell at first. We then are forced to rely upon constitutional symptoms. What occurs, and what takes place subsequently? Hæmorrhage, increasing collapse and restlessness, tympanites.

Now probably the safest rule is to be guided by the point whether or not you are sure that the wound goes into the peritoneal cavity. If in doubt, what harm in cutting down on the track of the ball through the muscles to the fascia and beyond, and seeing whether the peritoneum is intact? If it is intact, you have done no harm. If it is open, you have done the right thing. I am strongly in favor of immediate incisions to trace the ball, and see whether it has entered the peritoneal cavity. If it has, I should be guided by the amount of collapse how much farther I would go. If the patient was in such a condition that it was almost sure he would die in a half-hour after the operation, I think I would stop and not persist; but if there was a chance that he might come through, and if he and his friends assented, I should slit up the peritoneum and go in, and search. I am inclined to think the method of Dr. Senn in a modified form will have quite a wide application. I cannot see how it can do any harm after you have opened the peritoneal cavity. I think it occasionally may be a valuable guide. I do not think the use of any particular gas is essential; for air sometimes does exactly as well; or even some innocuous fluid, like a large enema of a very weak antiseptic solution.

When a person has received a gunshot wound of the abdomen, it is our duty first of all to administer stimulants, and try to overcome the temporary collapse; then to enlarge the wound into the abdominal muscles and trace it down to its point where it enters, or does not enter, the peritoneum. If it does not enter the peritoneum, anxiety is practically over. If it does, then it seems to me the wound in the peritoneum should be enlarged, modes of insufflation or enemata tried to detect the perforation, vessels secured, and attempts made to repair the damage. But if a large ball moving with a good deal of force had penetrated thoroughly, and we found considerable injury to the viscera, I should reflect, and should say, that the chances of recovery by present statistics, were not large.

A good deal of discussion has taken place recently as to what you had better do first, after opening the peritoneal cavity. Well, common-sense, it seems to me, settles that. Hunt for hæmorrhage first of all; look for bleeding-points. You will inevitably find some; always some clots in the abdominal cavity. Turn them out, turn the viscera over, secure bleeding vessels, wash out, and then seek for the points of perforation. Occasionally, to our dismay, we find that something has been penetrated which is hopeless of repair. For instance, the ball may be imbedded in one of the solid viscera; and then death is pretty sure to take place; because, even if it is extracted and hæmorrhage arrested, we have an impaired viscus, which is going to repair imperfectly, and finally make an abscess, and discharge its contents inside the abdomen rather than out; so that recoveries from such injuries are hardly to be hoped for. I should think it would be wiser in these cases always to leave a glass or hard-rubber drainage-tube in the wound. It seems to me it must be poor policy to close up a lacerated wound in the abdominal cavity where we have had to stop hæmorrhage and repair perforations. We know from the treatment of tubercular peritonitis, for instance, that the abdominal cavity will stand a good deal of washing out, and be benefited by it; and it seems to me that washing out and drainage are the salvation after the leaks have been secured in the gunshot wound of the abdomen. Why glass or hard-rubber or some inflexible material? Because the rubber drainage-tube is very soon collapsed if put into the abdominal cavity. The viscera roll about and change place, and the rubber drainage-tube gets twisted and is wholly ineffectual. Glass probably is the best material. Even with the best material, I contend that no means has yet been found for perfectly draining and irrigating the abdominal cavity; and I have some fears that it never will be found. Consider the pockets and sinuses and intricacies of the abdominal cavity, especially down towards the pelvis where accumulations take place; and then consider the fact that in all probability a certain amount of peritonitis is surely going to take place from the wound, from the operation, and from the general interference with the part. This peritonitis in its mildest form, even although it is not dangerous to life, is going to make adhesions at once, in six, or even in two or three hours or less. Where the intestine lies exposed an hour, it is sometimes difficult to pick it off from the walls of the abdomen — almost as if covered with some adhesive mixture. The adhesive inflammation is almost immediate. Now consider the facility with which certain corners and places can be promptly shut off from drainage. This is the difficulty, it seems to me, in attempting to drain the abdominal cavity, and a difficulty which, I am inclined to think, will never be perfectly overcome.

With regard to the propriety of amputating or not in gunshot injuries, the rules enunciated by the older military surgeons are still very sound; and they are best set forth in Larrey's "Surgery." It seems to be pretty well established, where the femur has been badly broken up and slit by a minnié ball, that amputation gives the patient a better life afterwards than treating it as a compound fracture; for subsequent necrosis almost invariably occurs; and from necrosis of the femur, even in civil life, you know complete recovery is a rare exception. People may not die of it; but they do not get well. It recurs over and over again, with repeated abscesses and sinuses for years. Then another point is excision. Now excisions of the lower extremity cannot be done in military surgery with much success unless the patient can be in a permanent hospital. In excision of the knee, the only cure is by anchylosis; and so, generally, of the lower extremity. We must have immobility. Excision of the elbow is a far different matter. Excision was practised in our late Civil War, in the armies in the field, in attempts to save limbs. On the lower limbs it was very unsuccessful; in the upper limbs very successful and very promising indeed; and large numbers of soldiers are still living after excisions of the shoulder and elbow, that were done almost immediately after they were shot.

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Original Articles.

FRENCH VIEWS OF SOME DISEASES OF CHILDREN.

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Notes taken in Paris during the past winter form the basis of this outline sketch of the views held by the best French authorities of some diseases of children which are of common occurrence. The services in which I saw something of the practice were those of MM. Ollivier and Simon at the Enfants Malades, MM. Sevestre and Moizard at the Trousseau, and M. Hutinel at the Enfants Assistés.

These three institutions comprise about twelve hundred beds, and I am indebted to the above-named gentlemen for every facility for observation, and much personal courtesy.

The Enfants Malades and Trousseau are regular children's hospitals, receiving patients of any age up to the fifteenth year; the services are very active, and there are abundant opportunities for pathological investigation, as it is the custom to perform autopsies in all cases resulting fatally, *unless opposition is offered by the family* — a thing which rarely happens, as the majority are entirely ignorant of the existence of any such rule, and regard the post-mortem examinations as matters of course.

The Enfants Assistés receives children (usually infants) whose parents wish to get rid of them, and is undoubtedly a potent factor in the prevention of infanticide in a city where about fifty per cent. of births are illegitimate.

All three institutions offer interesting fields for observation; and the interneships and externeships are eagerly sought after by the best class of students.

Among the diseases which seemed to excite the greatest interest and were most freely discussed during the past winter, were: inflammation and enlargement of the bronchial glands (so-called "bronchial phthisis"), broncho-pneumonia, typhoid fever, diphtheria, and (of course) syphilis.

M. Simon lays great stress upon the comparative frequency of cases of enlarged bronchial glands in non-tubercular cases and the curability of this condition in many instances where treatment can be properly carried out. The physical signs were perfectly well marked in a number of cases which I saw and a general rule was observed of examining all patients having a spasmodic cough, with special reference to the condition of the bronchial glands. Cases regarded as curable are those in which there exists no hereditary predisposition to harbor the tubercle bacillus and no enlargement of other glands.[1]

The affection seems in a fair way of literally living down (in part) the evil reputation it has acquired (and still enjoys in the minds of M. Cadet de Gassecourt and one or two other distinguished authorities); and one is justified in hoping for a favorable termination in some of the cases that would have been formerly regarded as necessarily fatal — instances of complete recovery having been observed in which incessant cough and great emaciation seemed to justify an unfavorable prognosis. The prevailing opinion among the most competent men in Paris is, that so-called "bronchial phthisis" is non-tubercular in twenty per cent. of all cases.

Aside from consideration as a distinct affection, enlarged bronchial glands play an important rôle in other pulmonary troubles, and not infrequently give rise to errors in diagnosis; for whether invaded by bacilli or enlarged by simple inflammation, they cause a spasmodic cough so closely resembling pertussis that a diagnosis is impossible in the absence of a history of the illness — and histories are often lacking in hospital cases. It was my fortune to witness two autopsies in broncho-pneumonia cases in which this condition was present. In one several of the glands were caseous, but the lungs were free of tubercle; while in the other the bronchial glands had evidently been the original seat of trouble, and the affection of the lungs was secondary — death being due to a broncho-pneumonia which was simply the mask of an acute, (but secondary) pulmonary tuberculosis. One's ideas of broncho-pneumonia (even of a very acute type) are subject to a considerable modification after witnessing a number of autopsies in which an unsuspected acute tuberculosis furnishes the key to the real nature of the disease.

The treatment which has proven most successful in cases of enlarged bronchial glands includes long sojourns at various mineral springs or at the seashore, and is, of course, out of reach of the poorer class of patients; at the same time much can be accomplished by the use of cod-liver oil and preparations containing iodine, together with long and persistent counter-irritation, which may be (I think) best produced by the use of phenic acid, after the method of M. Ollivier, which is briefly as follows:

After a preparatory cleansing of the skin with ether or alcohol (to remove all fatty matter) a boundary-line of vaseline is drawn around the portion to be counter-irritated, and phenic acid (nine parts to one of alcohol) is applied with a wad of cotton fastened on the end of a bit of wood of convenient length. The instant the skin begins to whiten (which happens in a space of time varying from a few seconds to a minute) the surplus acid is removed with a camel's hair brush containing a small quantity of alcohol, and a layer of cotton-wool is applied with a moderately tight bandage. The pain is sometimes pretty sharp; but as a rule, it lasts but a short time, and is no way to be compared with the inconvenience and misery suffered by children from the ordinary fly blister — in fact, no blister is produced, but an intense congestion of the skin, which lasts for a number of days. No renal trouble attends the employment of this method, and the pigmentation of the skin which follows always disappears *in children* after a time. It is certainly superior to any other form of prolonged counter-irritation with which I am acquainted — quick, safe and (comparatively) pleasant.

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[1] "Polymicroadenopathie" is a term much in vogue in the medical world of Paris at the present day; and the condition which this polysyllabic word is used to describe is justly regarded as an important corroborative sign of tubercle, particularly in apyretic cases.

Enlarged bronchial glands are, of course, present in many cases where no physical signs can be detected, and afford the only rational explanation for many cases of spasmodic cough with inspiratory spasm in which nothing wrong is found in the larynx and there is no history of pertussis obtainable. Such cases are treated in the same way as if the disease were demonstrable, and with good results.

The etiology of the various forms of broncho-pneumonia has been carefully studied and much discussed in Paris during the past year; and, from our present knowledge of its bacteriology must be regarded as a *non-specific* infectious disease. MM. Mosney and Netter have each published the results of their bacteriological investigations, which were conducted in a large number of cases of every form of the disease among subjects of all ages. Mosney has tried hard to establish an intimate relation between the pseudo-lobar form and frank croupous pneumonia, based upon the presence in both of the pneumococcus.

Netter opposes this theory; and the results of his investigations are fully endorsed by Claisse (pathologist of the Enfants Assistés) who told me that while the Talamon-Frænkel pneumococcus, the staplococcus, the pneumococcus of Friedlander and (rarely) the bacillus coli are all found, either singly (as to species) or in groups, it is the streptococcus which is principally identified with every form of broncho-pneumonia. He has met with the pseudo-lobar type of the disease more frequently in infants than I had supposed possible. The results of his examinations had not been published when I left Paris, but have probably appeared before this. In diphtheria the bacillus of Lœffler is not found in the affected lobules unless the membrane extends into the bronchioles — in other words, the diphtheria is the predisposing cause (*terrain préparé*) of the broncho-pneumonia.

In regard to the infectiousness of the disease: In cases complicating measles, pertussis and the grippe, it is transmitted with great facility. Instances of typhoid patients contracting the disease immediately after admitting to the wards cases of broncho-pneumonia complicating the grippe, and of diphtheria patients being infected by children whose diphtheria has become complicated by broncho-pneumonia, have been repeatedly observed. Again, allowing all cases of measles to remain together, increases the mortality to a marked extent — for broncho-pneumonia, which is the chief death-factor, soon spreads throughout the ward, and infects (and often kills) a majority of the children. Hence it is the rule to immediately separate those with pulmonary complications from the others, and with good results.

At the Enfants Assistés this same rule is observed in the endemics of whooping-cough which occasionally occur; and statistics have shown it to be good practice. The same precautions have been observed in the children's hospitals of Paris regarding a change of blouses and the use of antiseptic solutions in passing from a ward containing measles complicated by broncho-pneumonia to one containing measles only, as in passing from a diphtheria or a scarlet-fever ward to any other. The advent of this infectious form of broncho-pneumonia is announced by a marked and sudden rise of temperature; and when this occurs, a case is immediately isolated without awaiting the development of physical signs.

It is also believed that where lack of space prevents the isolation of measles (and when the disease breaks out in endemic form in a children's hospital, that must sometimes be the case) its spreading can be stopped by the prevention of *actual contact* (with those having it or with infected media) on the part of the others. This is effected by surrounding the beds of children who are in danger with screens of a coarse network of wire about four feet high. This prevents surreptitious visits from bed to bed and the passing of toys, etc.; while at the same time the children can see all that goes on and do not mope. Each patient's meals are served on a galvanized-iron waiter; and this, together with all the (metallic) eating-utensils, is plunged in boiling water for a half-hour before being used. I have often seen this plan adopted, and it works admirably.[2]

One of the best precautions against broncho-pneumonia is rinsing the mouth and gargling with a weak boric-acid solution, and the introduction of a few drops of boricated glycerine in the nostrils. The rationale of this is obvious when one considers that many of the microbes identified with the disease are at times our uninvited guests even in health. Beds and blouses should all be disinfected by steam heat or soaking in bichloride solutions; and the sputa and vomitus must be carefully disposed of. The treatment of the acute type of the disease consists of free stimulation with brandy ("potion of Todd") cold baths (20° C.) of five minutes' duration, and given every five or six hours, together with the subcutaneous injection of caffeine.

℞ Caffeine . . . . [illegible] grms.
Sodii benzoat . . . . [illegible] grms.
Aquæ dist. q. s. ut fiat . . . . . [illegible] M.

Of this a quantity containing from ten to twenty centigrammes of caffeine is injected every six or eight hours in cases of children a year old, and the amount increased in cases of older ones.

M. Simon alone is not in favor of cold baths — in fact, he condemns them altogether, and lays great stress upon the good effects of counter-irritation, either by poultices dipped in strong mustard-water or phenic acid after the method of Ollivier.

He combats the high temperature with large doses of quinine,[3] and in case this treatment causes delirium or sleeplessness he advises rectal injections of chloral. The baths which I refer to are not given tepid and gradually cooled, but the child is plunged at once into cold water, and it is seldom thought necessary to give a preliminary stimulant.

It is a curious fact that a very acute form of broncho-pneumonia is quite common among children of the better class in Paris; and a natural inference might be drawn that the streptococcus moves in higher circles in that city than with us.

In regard to chorea, the opinion prevails that while it is usually connected in some mysterious way with rheumatism,[4] that there is a "considerable percentage"[5] of cases which present no evidence of rheumatism, either before, during, or after the attack. This type is known as *chorée nerveuse*, and is more commonly observed in female children, and M. Ollivier lays great stress upon its frequent association with premature hysteria. It is an obstinate form of the disease, and tends to last indefinitely. I am quite sure that this type is commoner is Paris than in New England, and that in all forms of chorea the heart escapes injury there oftener than with us.

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[2] [illegible]

[4] M. Germain See is quite positive that it is "a rheumatic disease." Nevertheless, salicylate of soda does not in the least modify the move- [illegible] trouble occurs during or after a chorea or not.

[5] [illegible]

Antipyrine is still regarded as positively curative by the author (M. Legroux) of the treatment of chorea by the heroic use of this drug; but the majority of the profession regard it as merely a palliative, and it is much given in the routine treatment of the disease. A dose of more than one drachm in twenty-four hours is never exceeded however, for although the movements have been known to cease immediately after the administration of a larger quantity, the presence of alarming symptoms has led to exercising a justifiable caution. Arsenic is given merely for its tonic effects. M. Simon treats his cases with antipyrine (*comme calmant*) and dry cupping over the spine. All seem to agree that antipyrine is a first-rate sedative, and nobody (M. Seé excepted) pretends to possess the vaguest notion of the true pathology of chorea — but little reliance being placed in the alleged discovery of the guilty microbe.

Typhoid fever is no rarity among children in Paris, and presents certain peculiarities worthy of mention. Abortive cases having all the symptoms of the disease, including in some instances enlargement of the spleen, and reaching a sudden and favorable termination in the course of a week, are not uncommon. In fact, they seem to rank in frequency with aborted apex pneumonias (which the French insist upon calling *congestion pulmonaire*), and both are commoner in Paris than with us.

Rose-spots are plentiful. I saw two cases in which they were as numerous (and almost as red) as flea-bites. As much stress is laid upon their presence on the inside of the thighs and on the back as on the abdomen and chest, and a large number is regarded as a favorable omen.

It is the universal practice to give a "massive" dose of calomel in the early stage — five centigrammes for each year of the child's age being regarded as the proper quantity. I should add that fifty centigrammes is rarely exceeded. "No accident has ever resulted from this treatment."[6] A modified Brand's method and large doses of quinine are used to reduce the temperature. In grave cases a hypodermic injection of caffeine (twenty-five to thirty centigrammes) is given before the bath. I saw two cases of typhoid complicated by myocarditis, in which death was preceded by a fœtal heart rhythm; and in both instances the diagnosis was verified by autopsies. Antipyrine is never given to children as an antipyretic — always as a sedative. The drug given to reduce a high temperature from any cause is quinine. Phenacetin had never been given in any of the children's hospitals before February last — the amount of red tape exacted by the authorities before any comparatively new drug can be obtained is enough to discourage the most enthusiastic therapeutist. The mortality among children with typhoid (in hospitals) is "about seven per cent.," which is a favorable result when we consider the desperate condition of many when they enter the wards. When, for any reason, the water from outside the city fails, and it becomes necessary to turn Seine water into the mains of the sections which are deprived of a pure supply, typhoid regularly breaks out in these quarters. Notice is always given in advance of the change; but as it is usually the poorer sections of the city which are subjected to it, not much attention is paid to the announcement. Benzo-naphthol is prescribed as an intestinal disinfectant by M. Moizard and others in five or ten grain doses. Simon prefers salol or salicylate of bismuth.

Diphtheria is the most fatal of all diseases among children in Paris, and is treated in accordance with the modern theory that it is always a local disease at the commencement — the constitutional symptoms being due to the presence in the blood of the streptococcus, which follows closely the deposit of membrane containing the Klebs-Lœffler bacillus, which latter is never absorbed. It is regarded as proved that the disease may be transmitted at least two weeks after the disappearance of the membrane — the bacillus being still present in the saliva in all its virulence. The specific germ may also be found in the pharyngeal mucus of children, in cases where the deposit is too slight and its consistency too soft to justify the term "membranous," and the larynx remains free throughout the illness — showing that as much may depend upon the soil as upon the seed. It can also be discovered in cases of *croup d'emblée*, where no trace whatever of membrane exists in the pharynx or on the tonsils. Experiments have shown the bacillus in mild and convalescent cases to possess only a moderate degree (*as a rule*) of virulence, inasmuch as instead of killing a guinea-pig in twenty-four or forty-eight hours, when injected subcutaneously, four or five days are usually required to do the work, or the animal may even completely recover from the effects. The pseudo-bacillus so carefully studied by Hoffman, Roux and Yersin has been found in the saliva of children who were in good health and entirely free from all unwholesome surroundings. It is not generally believed that under certain conditions this germ can cause diphtheria.

M. d'Espine, of Geneva, remarked to me in conversation, that no argument in favor of the existence of a non-diphtheritic membranous croup, based upon failure to discover the Klebs-Lœffler bacillus is worthy of consideration, inasmuch as he has repeatedly known it to disappear with great rapidity after death in cases where its presence had been proved during the last days of the patient's illness.

Before describing the treatment of the disease, this seems an appropriate place to mention the new isolating ward "for doubtfuls" at the Trousseau, which has proved a great success. It consists of a long, single-storied building containing two rows of small rooms, which are plastered and smoothly finished in a way to admit of being easily washed. A corridor runs the entire length of the building, between the rooms, the walls of which are of window-glass down to within three feet and a half of the floor, so as to permit easy inspection of the occupants of the various rooms without the necessity of opening doors. At the usual entrance is a vestibule for blouses, which are invariably worn by all who participate in the visit, and are dropped upon the floor of another small room before leaving the building. In another portion of the hospital an old ward has been transformed into an isolating ward for measles, and here the partitions between the rooms (some of which are reserved for patients having broncho-pneumonia) and the entry in which the nurse on duty usually sits are composed of glass, so that she may see all that goes on without any unnecessary exertion.

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[6] MM. Ollivier, Simon, Sevestre and Moizard.

A local application which meets with almost universal approval is Gaucher's mixture:

℞	Acid. tartaric.	1 grm.	
	Acid. phenic.	5 grms.	
	Alcohol	10 grms.	
	Ol. ricini	15 grms.	
	Camphor	20 grms.	M.

This is applied to the throat every two hours, being rubbed into the membrane (as much as possible of which is first carefully stripped off) pretty thoroughly, hæmorrhage being carefully avoided. Ten minutes after each application a nasal douche of one-half per cent. of phenic is given, the child's head being held bent over a basin to prevent the liquid being swallowed.

Other favorite formularies are:

℞	Acid. phen.	5 grms.	
	Alcohol	10 grms.	
	Camphor	20 grms.	
	Glycerinæ	25 grms.	M.

(Hutinel.)

℞	Acid. salicylic	1 grm.	
	Infus. eucalypt.	60 grms.	
	Glycerinæ	30 grms.	
	Alcohol	15 grms.	M.

(Simon.)

The juice of lemon (d'Espine) is also used, more especially in mild cases. To irrigate the naso-pharynx salicylic acid (1 to 1000) and boric acid three-fourths per cent. are favorite formularies. M. Hutinel favors steam atomization of the throat with a weak solution of boric acid and the saturation of the atmosphere of the ward with the steam of a weak phenic acid solution. Steam heat is very naturally regarded as the best disinfectant for bedding, etc., which lodge colonies of a microbe which withstands a dry heat of 98° C. for an hour or more and is as lively as ever after being allowed to remain in a room of ordinary temperature for six months if not longer.

Infantile syphilis naturally suggests a word or two concerning the Enfants Assistés, which is the institution where it can perhaps best be observed. As I have said, this hospital is the dumping-ground of a large number of children whose parentage "leaves much to desire." The policy of the institution is to keep these little unfortunates until it becomes a moral certainty that they are not syphilitic, and then to hand them over to country wet-nurses who are only too anxious to assume entire charge of them for something like forty francs a month. Here the responsibility of the hospital ends, and the children are supposed to become "good little peasants," and aid their adopted parents in their work as soon as they become old enough to be useful. By no means all who enter the wards find this solution of life's problem — a definite answer is soon furnished in many cases by infectious diarrhœa and syphilis. Babies who fail to thrive on the bottle are nursed by female asses, and no instance of syphilitic infection by way of the teat has ever been known. After each nursing the teats are carefully washed with a boric acid solution. The jenny has entirely superseded (for nursing purposes) the old-time goat — an immoral animal whose vagabond propensities decline to countenance a regular secretion of milk unless she is permitted to roam at will and indulge in a varied diet; whereas the jenny, if permitted the society of her own offspring, and to occasionally nurse it, takes kindly to her numerous foster children, and is a reliable milker.

Desperate cases of marasmus are placed in glass-covered incubators, the temperature of which is maintained at 28° to 29° C. Sclerema is not uncommon, and recovery sometimes follows being kept in an incubator. The earliest signs of syphilis are considered to be: the eruption on the nates (closely simulated by the papular erythema of cases of diarrhœa) which acquires a coppery tint in fading, vertical cracks inside the lips rather than the classical mucous patches in the commissures (which latter is wonderfully simulated by an insignificant little affection called *perléche*), *purulent* coryza, enlarged inguinal glands, desquamation of the palms and soles, cracks in the skin at the junction of the ears and head posteriorly, and enlargement of one of the testicles, which subsequently atrophies. This last symptom is observed in perhaps five per cent. of all (male) cases. Any or all of the above usually appear before the end of the third week. The disease is very fatal — a mortality of seventy per cent. being probably not far out of the way. Parrot's theory of rachitis being a syphilitic affection has no adherents in Paris at the present time. That so able an observer should have been led into such an error is accounted for by the fact that his cases occurred in an institution where a large proportion of the babies were syphilitic; and it is a well-known fact that rachitis develops at a very early age in children with a specific taint.

As regards the internal organs: the spleen is always enlarged during the active stage of the disease, and remains so for a period varying from eight to twelve months, as shown in 110 cases in M. Quinquad's wards at the St. Louis during the past winter. In children it can always be felt, but in adults it has usually to be demonstrated by percussion. The liver (in children) enlarges much less frequently than the spleen, and its condition is rarely that of an ordinary cirrhosis, nor are gummata frequent; but the tissue of the organ is dense and of the color of flint. When an infant dies of infectious diarrhœa, the eruption fades out completely, and nothing is found in any of the internal organs.

As to the treatment of the disease, it remains the same.

Cases of pleurisy which have *recently* become purulent, are treated by M. Sevestre with injections of bichloride of mercury (1–1000) and subsequent washings out with boric acid solutions (30–1000). By this method a success is obtained in about fifty per cent. of all such cases. He regards many of the cases of (supposed) tubercular peritonitis which have been cured by laparotomy as due to the presence of the pneumococcus, and in one or two instances has proved this to be the case.

The best of the clinical teaching is done in hospital wards by the attending physicians, and the relations between the students and their instructors are very pleasant.

A Cancer Hospital for Vienna. — It is announced that Vienna is to have a hospital for the treatment of cancer. It is the gift of Baron Albert Rothschild, in memory of his wife.

CONTRIBUTION TO THE STUDY OF THE ELIMINATION OF ARSENIC.[1]

BY EDWARD S. WOOD, M.D.,
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IT is stated in all works on toxicology and therapeutics, that after medicinal or toxic doses of arsenic, the drug is completely eliminated in about three or four weeks. In support of this, numerous cases are cited, particularly the famous case of Dr. Alexander, who died sixteen days after taking accidentally a large dose of arsenic and in whose organs, after death, no arsenic could be detected by chemical analysis by the eminent English toxicologist, Taylor.[2]

A case of chronic poisoning, followed by arsenical paralysis, is reported by Dr. Gaillard, due to the taking of Fowler's solution, which had been prescribed by an irregular practitioner in very large doses. Fifteen drops morning and night for fifteen days, fifteen drops three times a day for fifteen days, and after that twenty drops three times a day. This quantity of Fowler's solution corresponds to about one-quarter of a grain of white arsenic for the first fifteen days, one-third of a grain for the second fifteen days, and one-half a grain after the first month. The forty-five drops daily during the second fifteen days caused much vomiting and pain in the stomach, while the sixty drops daily could not be tolerated and the patient, consequently, gave up the treatment. In this case, arsenic was detected in the urine six and one-half weeks after the last dose, while none could be detected in the urine a week later.[3] This is the longest period of time required for the complete elimination of arsenic thus far recorded, so far as known to the writer.

The following cases in which the analysis of the urine was made by a much more delicate method, first described by Prof. Charles R. Sanger, show that arsenic may remain in the system for a considerably longer period.

CASE I. A patient in the Massachusetts General Hospital, in the service of Dr. F. C. Shattuck, was given on November 30, December 1 and 2, 1890, three minims of Fowler's solution three times a day, after which the drug was omitted. Thus, twenty-seven minims of Fowler's solution were taken during the three days. After this the urine was collected daily for chemical examination, and arsenic was detected in the urine for the last time on January 30, 1891, thus requiring eight weeks and two days, or fifty-eight days, for the complete elimination of the arsenic.

CASE II. On November 5 and 6, 1890, Fowler's solution was administered to a patient, two minims three times a day. On November 7th and 8th, three minims three times a day. On November 9th and 10th, four minims three times a day. On November 11th, five minims three times a day, after which the Fowler's solution was omitted, the patient having taken sixty-nine minims in all of Fowler's solution. Here, as in the last case, the urine was collected daily for chemical analysis for arsenic, which was detected in the urine for the last time on February 2, 1891. The urine of February 3d, 4th, 9th, 10th and 11th, was examined for arsenic but none was detected, showing that it was completely eliminated from this patient's system in eleven weeks and five days, or eighty-two days, from the time of the last dose.

CASE III. This is a case of acute poisoning, the patient having taken a poisonous dose of white arsenic in tea, on February 11, 1891. This resulted in the usual symptoms of acute arsenical poisoning and was followed by arsenical paralysis. The patient was removed to the Massachusetts General Hospital, kept under surroundings which were free from arsenic, and the urine was collected daily for chemical analysis for arsenic. Arsenic was detected for the last time in the urine of May 15, 1891, thirteen weeks and two days or ninety-three days from the time of the large toxic dose of arsenic.

Up to within a few years, the method of analyzing urine for arsenic was the same as that employed by chemists for the analysis of tissues and other organic mixtures for arsenic. The organic matter is destroyed or oxidized by one of the methods familiar to toxicologists. The one most commonly used being to oxidize the organic matter by heating the mixture upon a water bath with hydrochloric acid and potassic chlorate. This oxidizes the arsenic also to the form of arsenic acid. The mixture is filtered and the arsenic acid is reduced to the form of arsenious acid by heating the filtrate with a few drops of sulphurous acid. The heat is continued until the excess of sulphurous acid is driven off; then the mixture is filtered and the arsenic precipitated from the filtrate by passing sulphuretted hydrogen through it for several hours. The precipitated sulphides are collected on a filter paper, and the sulphide of arsenic is tested by the methods ordinarily used in poison anaylses. When urine is analyzed for arsenic in this way, minute traces of the poison escape precipitation by the sulphuretted hydrogen, so that when only one-tenth or two-tenths of a milligramme of arsenic is being eliminated in each litre of urine, it is apt to escape detection.

In the method which was described by Professor Sanger, precipitation of the arsenic by sulphuretted hydrogen is avoided. The urine is evaporated to dryness with an excess of nitric acid. The yellow, highly-nitrified mass is ignited in a porcelain crucible or evaporating dish until the fused mass is perfectly white, showing that all organic matter has been destroyed. This mass, which contains nitrates, is then heated with concentrated sulphuric acid until all nitrous fumes are expelled. The mixture is then allowed to cool and the arsenic, which is in the form of arsenic acid or arseniates, is dissolved in water and the solution introduced into a Berzelius-Marsh apparatus which permits of the easy detection of one one-hundredth of a milligramme, or even of five one-thousandths of a milligramme, of arsenic in a litre of urine.

For the detailed description of this apparatus and the method of using it, I refer the reader to Professor Sanger's original article.[4]

AMONG THE MALEKULANS. — When a Malekulan is old and decrepit he has nothing to look forward to but burial alive. Should an old person become bedridden or a burden, he or she is told quite simply that his or her burial will occur on such a day. Invitations to the funeral feast are then sent out, and, dead or not dead, on that date the person is buried.

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[1] Paper read at Boston Society of Medical Sciences, November 17, 1891.

[2] Medical Times and Gazette, April 18, 1857.

[3] Annales d'Hyg., October, 1874.

[4] Proceedings of the American Academy of Arts and Sciences, vol. xxvi.

Clinical Department.

TWO CASES OF STONE IN THE FEMALE BLADDER: ONE REMOVED BY LITHOTOMY, AND THE OTHER THROUGH THE URETHRA.[1]

BY JOHN HOMANS, M.D.,
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The rarity of instances of stone in the female bladder is a sufficient reason for reporting these two cases, particularly as in one was found a piece of bone from the acetabulum, and the other was complicated by a vesico-vaginal fistula.

Case I. Mary C., a sempstress, forty-six years old, a single woman, entered the hospital on June 6, 1892. At the age of eight she began to have disease of the right hip-joint, which lasted in an active stage for seven years. During this time many abscesses formed, and pieces of bone were discharged externally. Thirteen years ago, that is, at the age of thirty-three, she began to have pain just before and during micturition, and passed bloody urine containing much sediment. This attack came on suddenly and lasted about three months. No operation was done. She was quite ill. After this attack she got along pretty well till five years ago, when she had a similar attack, was in bed two months, and has never been well since. Two months ago there was great aggravation of symptoms, increase of blood and pus in urine, with long clots. She suffers severely during micturition, and afterwards. She has been washing out her bladder herself for two months past, with some relief, and has felt a stone against the catheter. She has found small fragments looking like bone in the washings from the bladder. The urine is foul-smelling; specific gravity 1,006; albumen, a trace; sediment shows considerable pus, triple phosphate crystals, blood, squamous epithelium and detritus.

Operation, June 9, 1892. On introducing the sound a foreign body was at once struck. The urethra was dilated until the forefinger could be passed through it. Lithotomy forceps were introduced through the urethra into the bladder, and several calculi were removed. On examining the walls of the bladder with the finger, a solid calcareous mass was found to be attached to the right side, and at this point the bladder was adherent to the pelvic wall. Irrigation was thoroughly done, and all particles of stone and bone were removed. On examining the fragments removed, one was found to be a spiculum about an inch and a quarter long, apparently the edge of the acetabulum. The masses were sent to Dr. W. F. Whitney, who made the following report:

"(1) A calculus about the size of the end of the thumb, shaped a little so as to recall the eroded end of a child's femur. One end is dense and homogeneous, the other is larger and covered with crystalline projections. Microscopic examination failed to show anything but a crystalline structure of the general character of the phosphates.

"(2) A spiculated fragment one inch and a quarter long, looking like bone, and which on microscopic examination proved to have the structure of true bone."

At the end of three weeks the patient was discharged. She had no pain, and could retain her urine over an hour. No stone was detected with the sound. The urine was much clearer than on entrance. She was discharged at her own request, with directions to wash out the bladder daily with a solution of boracic acid.

Case II. Esther L., age eighteen, single, entered the hospital May 11, 1892. She has a large vesico-vaginal fistula and a large vesical calculus. In April, 1861, her vesical symptoms began with pain in the back and frequent painful micturition. In November, 1891, was operated upon for stone in the bladder; and a stone the size of the end of the thumb was removed. The urine has passed through the vesical wound and through the urethra since the operation, and she has no control over it and suffers considerable pain.

Operation, May 17, 1892. The urethra could not be sufficiently dilated to allow the stone to be brought out through it. The vesico-vaginal opening was then enlarged in a direction parallel to the longitudinal diameter of the bladder until it was about two inches long. The stone was then extracted with lithotomy forceps. It was a hard, rough stone, of an oval shape and about an inch and a half long by one inch wide. The edges of the vesical opening were then refreshed with the knife and brought together by fourteen stitches of silver wire. The bladder was filled with water and found not to leak. Sims's self-retaining catheter was put into the bladder through the urethra. The catheter was changed every morning, the fresh one being boiled each day. The amount of urine discharged was fifty ounces *per diem.* The operation for closing the vesico-vaginal opening was a perfect success, and on June 3d she was discharged. There was no leaking. Patient states that she has control of her urine and need only pass it three or four times a day.

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Medical Progress.

THE PARASITIC ORIGIN OF CARCINOMA.

BY W. T. COUNCILMAN, M.D.,
Professor of Pathology, Harvard Medical School.

(Concluded from No. 16, page [illegible].)

Sjobring (20) found bodies in the epithelial cells of the carcinomata after hardening in alcohol, which he regards as organisms belonging to the coccidia. The tumor from which most of his investigations were made was a typical carcinoma of the mamma. There were peculiar bodies of various sizes inside of the hypertrophied epithelial cells. They were rarely found in immediate contact with the protoplasm of the cell, but most frequently lay in a small sharply-defined vesicle. The wall of the vesicle apparently does not belong to the included parasite, but consists of a thickened layer of the protoplasm of the including cell. The small bodies vary greatly in size. When first seen they appear as very small structures lying in the protoplasm of the cell or in the nucleus and always surrounded by a clear space. They were found free in the lumen of the ducts of the affected gland. When they become larger they may even include in themselves the nucleus of the cell of the host. After a certain size has been reached the bodies break up into small spores.

Sawtschenko (42) describes at length the microscopic appearances which he found on careful examination of a carcinoma. At first sight the most striking thing seemed to be a vacuolation of the protoplasm of the cells. Some of the vacuoles were empty, but others contained small bodies, which he regards as parasites. They stain yellow with picric acid, and in eosin they stain much brighter than the protoplasm of the cell. The parasites have various shapes; sometimes they are oval, sometimes round. He thinks that the numerous forms of these organisms which have been described may be types which correspond to different tumors. Saudakewitch (41) in two articles gives a description of the supposed parasites of the carcinoma which in general agree with that given by other authors. The most characteristic organisms were found in a melanotic carcinoma. Metschnikoff (40) gives a note on several preparations of carcinoma of the pancreas and lymph-glands which were sent him by Saudakewitch. He found in these the appearances described by Saudakewitch, consisting in the presence of small round bodies either in the nucleus or in the protoplasm of the cancer cell. He considers them to be parasites probably belonging to the coccidia. Metschnikoff says that he has seen similar appearances in preparations submitted to him by Foa, and by Malassez and his scholars. Only a small portion of the development of the parasites can be studied in sections. The whole life-history of the parasites, he thinks, will only be made out by the study of fresh parasites in tissues which have not been hardened.

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[1] Read before the Boston Society for Medical Improvement, January [illegible], 1893.

In the first volume of the *Journal of Pathology* there is an article by Ruffer and Walker (49) on the parasitic protozoa in cancerous tumors. These authors examined a large number of carcinomata of various sorts and found the parasitic inclusions in all but three cases. The parasites were numerous in some of the cases examined, in others but few were found. They think they may always be found if the examination is sufficiently careful. The tissues examined were hardened in alcohol, in sublimate, and in Fleming's solution. In staining, the best results were obtained by the Biondi triple blood stain, although such preparations are not permanent. In most cases the parasites are spherical, and consist of a nucleus with a relatively large amount of protoplasm. A distinct capsule is usually present, and is best seen in tissues which have been hardened in Fleming's solution. The nucleus of the parasite stains like the nucleolus of the tumor cells. Delicate rays are frequently seen extending from the nucleus to the periphery. The protoplasm of the parasite may be homogeneous or granular. In preparations hardened with Fleming's solution, the capsule of the parasite presents a sharp, double contour and holds the stain with great tenacity. The capsule appears to be secreted by the invaded cell and not by the parasite. The parasites are found exclusively in cells. They are more numerous in secondary tumors than in primary, and in these close to the rapidly growing periphery. No reproductive processes are seen in the parasites. The cancer-cells containing parasites may be perfectly normal or show slight marks of degeneration. Leucocytes may enter into the parasites and destroy them. A great part of the value of the article lies in the beautiful plates with which it is illustrated. The authors lay considerable stress on the fact that they have shown their preparations to Metschnikoff, who agrees with them in regarding the cellular inclusions as parasites.

Foa (43) found parasitic structures in non-ulcerated carcinoma of the breast. The illustrations which he gives of the parasites show various smaller and larger bodies inclosed in cells, and stained a different color from that of the nucleus of the tumor cells. He also figures similar bodies outside of the cell. Podwysozki and Sawtschenko (38) have also studied the parasites. They found them most easily in specimens hardened in corrosive sublimate, stained in saffranine and decolorized in alcohol containing a little picric acid. The parasites are both within the cells of the tumors and within the lymph-spaces. In general they corresponded with the descriptions of psorosperms. Some of the large cysts, similar to those which appear in the development of the psorosperms were seen, which contained numerous spores. The organisms were most numerous in the portions of the tumors which were more degenerated. They were found in the greatest number in a carcinoma of the testicle adjoining foci of degeneration. J. Jackson Clark (45) showed to the Pathological Society numerous specimens from cancers and from cysts developed in the mammary glands. He considers both the cancers and the cysts to be probably due to parasites. An extensive description of the parasites found in the carcinomata is given by Galloway (44). His descriptions in general agree with those given by other authors. He finds the parasites either in the cell body or in the nucleus and he figures them first as a small round mass of protoplasm which may become encysted and then break up into a number of sporules.

Stroebe (33) has an article on the cellular inclusions in the carcinoma and the cellular processes in general of the malignant tumors. He takes up the question of the asymmetrical mitosis which was described by Hansemen (50). He has found the same process of nuclear division not only in the carcinoma, but in non-malignant tumors also. He thinks that it is possible that some of the appearances described by Hansemen may be due to other conditions. He is not inclined to commit himself on the subject, but thinks that many of the peculiar appearances which have been described in the cells of carcinomata may be due to parasites, and thinks that there is no theoretical ground opposing the idea of the parasitic origin of the carcinomata.

Some attempts have been made to find proof for the infectiousness of carcinomata by the results of inoculation. Hanau (8) reports a series of successful cases in which he was able successfully to transfer carcinomata from one animal to another of the same species. The tumor used for inoculation was a carcinoma of the vulva of a rat. Portions of this were enclosed in the testicles of another rat, and developed true tumors with metastasis. Hanau expressly states, however, that these experiments cannot be used at all as a proof of the infectious nature of carcinoma. Other attempts at inoculation have not been so successful. Fischel (31) made numerous inoculation experiments. In these experiments, material from three cases of carcinoma of mamma, nine cases of carcinoma from other places, a small-cell sarcoma and a melanotic sarcoma were used. Portions of the tissue were cut from these tumors not longer than a quarter of an hour after extirpation, and were implanted in the tissues of various animals, principally rats. In all cases the implanted tissue was quickly destroyed.

There have not been wanting numerous articles which speak against the parasitic idea. Steinhaus (28) investigated very carefully in a number of tumors the conditions which were described by the various authors. Small pieces of tumors while perfectly fresh were hardened in sublimate and very thin sections of these investigated. In all cases he found the inclusions which have been described. The bodies were found both in the nuclei and in the cells. In its simplest form the inclusion represents an oval body surrounded by clear zone, but both the number of the included bodies and their size are variable. He thinks that many of these included bodies may be leucocytes which have become degenerated, although certain of the forms speak more in favor of their being parasites. In another article (29) the author has studied these inclusions more carefully. The greatest number of them were found in an epithelioma of the foot. He thinks that in most cases the bodies in question should be regarded as cells which have become partially enclosed in other cells. The process of inclusion can be especially well studied in the formation of the pearly bodies in the epithelial cancers. When the included cells undergo cornification, the resemblance to parasites becomes still more marked. Virchow (30) gives a short article principally on the work of Steinhaus; he says that long before the time when parasites were hunted for in everything, he was aware of the presence of peculiar bodies in tumors. He found them both in carcinomata and in the molluscum contagiosum. He then regarded the bodies included within the cells as endogeneous cell formations. Schütz (1) thinks that most of the questionable intracellular structures found in carcinomata should be regarded as due to leucocytes which have become included in the cell. Many of the appearances come from the remains of the nucleus of the leucocyte. He also thinks that it is possible that the homogeneous hyaline bodies which have been regarded as the early stages in the development of the coccidium, may be due to red-blood corpuscles which have been taken into the cells or into the nuclei and have there undergone a series of morphological changes. These bodies stain in the same way as extraversated red-blood corpuscles in other parts. Klebs (22) has also taken up the question of the parasitic origin of cancer. He made numerous experiments with regard to the inoculation of carcinomata, transferring pieces of carcinoma from the breast and elsewhere into the bellies of rats. The transplanted pieces were in part quickly absorbed, and in part remained as foreign bodies in the peritoneal cavity surrounded by a growth of inflammatory tissue. There was never any development in the carcinoma. In the implanted tissue after some time, the various bodies which have been described as parasites were found. On comparing sections of the implanted tissue with sections of the tissue from which it was derived, the same bodies were found, and there was no numerical increase of them in the implanted tissue. He thinks there are no positive grounds for regarding them as parasites.

Firket (19) found peculiar changes in the epidermis from the surface of a fibrous tumor in the neighborhood of the anus. In the preparations there were numerous hyaline masses more or less irregular in shape which stained intensely with picrocarmine. They were found between the otherwise normal cells of the malpighian layer. He regards them as products of exudation or of degeneration of the cells. They have much similarity with the hyaline masses which have been described in epithelial carcinomata of the skin. Borrel (18) reviews the work of Malassez and others. He has found in his old sections of various diseases of the skin, the bodies which have been described as coccidia. He does not think that there is anything in the appearance of these bodies which should lead to such an interpretation. He thinks that the supposed parasites can be divided into two forms, one the typical intracellular form which various [illegible] have regarded as due to degenerative changes in cells which have been formed by endogeneous cell formation within the bodies of other cells. The second form is found in the tissues between the cells, and those he regards as degenerated epithelial cells. Coats (46) in an address before the Medical Society of Glasgow, takes up the question of the infectiousness of carcinomata, and warns observers from being too hasty in considering various peculiar appearances seen in tumors as due to the presence of parasites. Ohlmacher (51) has found that when normal tissues are stained with safranine and afterwards treated with tincture iodine or picric acid, a precipitation of the safranine takes place both within the cells and nuclei, giving rise to appearances similar to the cellular inclusions which have been considered as parasites.

When we review what has been written with regard to the presence of structures, supposed to be parasitic in character, in carcinomata, we see that the most varied structures have been described. It is easily seen that most of the authors have attempted to find an analogy between the structures which they describe and the various phases in the development of the coccidia or psorosperms in the liver of the rabbit. There is some similarity in the descriptions of the different authors; but it is impossible from reading the descriptions to avoid being struck with their general indefiniteness. The bodies described by Russel, appear to be much different from those described by most of the other authors. We are perfectly familiar with the bodies which have been described by Russel, and have found them in a large number of pathological conditions. They will almost always be found in granulation-tissue if carefully looked for, and they were very numerous in some old granulations springing from bone. They are also rarely missed in syphilitic lesions, and in chronic inflammations of the intestinal canal.

Although we know that theoretical conceptions are not worth much, and that one single established fact may at once dissipate any amount of theory, still from what we now know of tumors and infectious diseases it would seem almost impossible that carcinomata can have a parasitic origin. Various theories as to the cause of carcinomata have been held. Virchow regarded the carcinomata, as he did the tumors in general, as due to local irritation, causing the tissue to proliferate more rapidly. He calls attention to the fact that carcinomata and other tumors are more apt to appear in situations where the tissue is most exposed to irritation. Another theory is that advanced by Thiersch, who finds the explanation of the origin of the carcinoma in the lessening of the resistance which one tissue opposes to the growth of the other. The downward growth of the epithelium leading to the production of carcinoma is always opposed by the normal connective-tissue beneath it. When for any reason the resistance of the connective-tissue is lowered, which takes place in old age and in other conditions, the epithelium can overcome this resistance; it grows down into the connective-tissue, and with this the carcinoma is developed. The theory as to the origin of carcinomata and tumors in general which has of late years attracted most atten-

[illegible] is that of Cohnheim, who regards them as due to the presence of embryonic remains in the tissues. He supposes that in the course of embryonic development, a portion of embryonic-tissue may remain unused and not attain full development. From this, under certain conditions, and when the resistance of the surrounding tissue is lowered, a tumor may develop. It is not necessary that actual portions of embryonic-tissue should remain undeveloped. It is sufficient for the purpose if a portion of the tissue retains the same unlimited power of growth which embryonic-tissues have. The association of trauma with tumors, which is especially favored by Virchow's idea, is generally held by surgeons.

Klebs (22) has advanced the idea that the rapid growth of the carcinomata may be due to the union of leucocytes with the nuclei of the tumor cells. He thinks that the entry of the leucocytes into the tumor cells may, in many cases, exert a fructifying influence, analogous to the union between the spermatozoon and the ovum. He distinguishes phagocitosis in which there is an emigration of leucocytes into degenerated tumor cells from this cellular copulation. He also is inclined to think that it is possible that the unlimited growth of the carcinoma may be in some way due to lack of enervation of the tissue. We have numerous examples of the production of tumors by parasites. Thus, the tubercle, the nodules in the actinomycosis, the leprosy nodules, and other of the so-called infectious tumors, although closely related to the inflammatory products, are in many cases true tumors. They are produced by parasites; without the presence of parasites the nodules will not form, and they can be produced by inoculating certain animals with the parasites alone. All of these structures, however, in their general histological characters are closely related to inflammatory products. They all consist of a formation of an indifferent tissue. All of the cells which are found in them may be found in the ordinary granulation-tissue. A peculiarity is given to most of them by the various forms of degeneration which they undergo. It is also very possible that certain other tumors, as the malignant lymphoma, for instance, may be due to parasites.

As regards the carcinoma, however, the case is different. The carcinoma is a complicated structure. No matter where the tubercle forms it will have the same structure. The sort of tissue in which it develops has little or no effect on its histological structure. Not so in the carcinoma. A carcinoma of the breast, is one sort of a tumor, that of the stomach another, that of the rectum another, and in general we may say that wherever the carcinoma arises its structure is modified by the character of the tissue from which it develops. Thus the epithelial carcinoma of the glands penis, in general contains smaller cells than other epithelial carcinomata, and the glandular carcinomata in certain places are liable to peculiar forms of degeneration. As a proof that epithelial tumors or carcinomata may be due to the influence of parasites, the coccidial tumors in the liver of the rabbit are frequently cited. Here, apparently, we have a true epithelial tumor. There is a proliferation of the epithelium of the bile-ducts, and frequently a more or less perfect adenomatous type of tumor is developed. When we have secondary nodules formed in the course of the infectious tumors, as, for instance, when tubercles in the liver develop after tuberculous ulcers of the alimentary canal, we have exactly the same structure produced. The structure of the tubercles in the liver is similar to those in the alimentary canal, and they proceed from the proliferation of the cells of the liver, probably both the liver cells themselves and the cells of the connective-tissue. In the secondary nodules of the carcinoma, the epithelial growth, the essential part of the tumor does not develop from the cells of the tissue in which it is seated. The metastases of carcinoma have been lately studied with reference to their histogenesis; and in general all authors believe that the tissue in which the secondary nodule develops takes no part in this formation at all, but the nodule simply develops within this, using its nutritive material. Moreover, the secondary tumors have the same character as the original tumor. In an adeno-carcinoma of the rectum, we may have in the liver a typical reproduction of the tumor in the rectum; in some cases almost perfect glands of Luberkülin may be developed in the liver. In the liver metastases following carcinoma of the stomach, a different sort of tumor will be developed; and, in general, whatever the character of the primary tumor, it will be repeated in the metastases. Even various forms of degeneration which are seen in the primary will also appear in the secondary tumor. It would be impossible to conceive of a parasite producing such a condition as this. In the first place, the parasite would enter into the cells of the tissue in the secondary nodule and cause them to proliferate, and a nodule composed of indifferent tissue might be developed; but a highly organized structure entirely different from that of the tissue in which the metastases are seated could not be developed. We could not conceive it possible that a parasite entering into the liver from a carcinoma of the rectum, could produce from the liver-cells a complicated glandular structure with the same forms of degeneration as in the carcinoma of the rectum. There may be, for instance, an extensive mucoid degeneration of the primary tumor in the rectum, and the same form of degeneration will be repeated in the metastases in the liver. A parasite of itself could not produce such a condition, for the liver-cells do not produce mucus. The same thing might be said of all of the other tumors. The supposed parasites have been found in melanotic tumors, both in the primary and secondary formations. We know that the production of melanotic pigment is confined to a few tissues in the body. In case of a melanotic tumor of the liver, secondary to one some place else in the body, we cannot conceive it possible that a parasite could give to the liver-cells the same power to produce pigment which is confined to certain of the connective-tissue cells. No analogy whatever can be found between the tumors in the rabbit's liver and the carcinomata. The firmest advocate of the parasitic nature of carcinoma would not think it possible that a tumor having all the characteristics of an adenoma of the bile-ducts could be produced in the lungs by the presence of parasites. In the present state of our knowledge concerning tumors, the secondary nodules can only be explained by an infection through cells, by cells from the primary tumor being conveyed to various organs of the body, where they will produce the same sort of structure. It may be said that it is possible that the cells are carried into distant tissues and carry the parasites with them. If this is the case, then the parasites have nothing at all to do with the production of the tumor, but it is simply an accompanying agent.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

. BOWEN, M.D., SECRETARY.

Regular Meeting, Monday, January 23, 1893, Dr. C. F. Folsom in the chair.

FIBROID OF THE UTERUS.

Dr. H. W. Cushing: This specimen which I have to show the Society is a multiple fibroma. It is from a patient on whom, through the kindness of Dr. E. H. Bradford, I had the opportunity of performing an abdominal hysterectomy. The clinical data which are of interest are as follows: Age, thirty-five; unmarried; duration since the discovery of the disease, eighteen months. First symptom of non-localized pain referred to the lower half of the abdomen. Since the pain, metrorrhagia, and recently, affection of general condition, from severity of symptoms.

Just previous to operation the enlarged uterus caused an ovoid swelling in the median line, extending from the symphysis nearly to the umbilicus, and laterally three inches to the right and left. There was also an area two to three inches in size in the right semilunar line and two to three inches below the liver, in which there was a flat percussion-note; and also a movable, not tender, firm, renal-shaped mass could be felt, apparently unconnected with the pelvic growth. The latter was irregular, nodular, dense and almost immovable. The lumbar tumor was surrounded by the normal tympanitic abdomen.

The specimen, as can be readily seen, consists of the uterus, which is much enlarged, not only by a thickening of the organ proper, but also by the numerous myo-fibromatous growths situated on and in its walls, and which cause the tumor to assume such an irregular contour. The tubes and ovaries are apparently unaffected. On account of its size the tumor was so firmly impacted in the pelvic cavity that its removal was a matter of great difficulty. The present weight of the tumor is three pounds. The main tumor shows the usual characteristics of an uterine fibroma. The feature of the growth which especially interested me was the renal-shaped mass about four inches in length in its long axis, seen at this point which is connected to the right upper surface of the tumor by this string-like pedicle four inches in length and one-quarter to one-half inch in diameter. This subperitoneal fibroid, now almost separated from the uterus, explains the physical conditions noted in the right lumbar region previous to operation. It also shows a step in the history of fibroids which are separated entirely from their original site, and which then either remain free in the abdomen, or perish from necrotic changes due to non-nutrition, or establish new connections through adhesions to adjacent organs. There are several others here which show various stages of this process of separation. Here is one where there is already nearly a distinct short pedicle.

A knowledge of this mode of growth of uterine fibromata is of value and interest, as this case shows, in the diagnosis of abdominal tumors.

In regard to the operation, the uterus was amputated at the cervical junction. The stump was treated extra-peritoneally. There was no suppuration. The stump separated on the fifteenth day, and the patient has made an uninterrupted recovery to date (now three weeks since operation).

Dr. Homans: This is extremely interesting, because it shows one of those processes which go on in these fibroid tumors, and more rarely in the ovarian tumors, by which the tumor becomes entirely separated from the uterus and then is nourished by the adhesions which it has contracted with the viscera, generally the intestines. This tumor does not seem to have formed any adhesions. Perhaps if it had dropped off from the uterus it would have caused considerable trouble. When these tumors get separated from the womb and are nourished by their adhesions to the bowel, then if the bowel is attached to them at intervals little foramina will be made, through which a loop of the bowel sometimes penetrates and becomes strangulated; so that all these loose-lying fibroids, or ovarian tumors, that have separated from their original pedicles ought to be removed; they are dangerous.

Dr. M. H. Richardson: A few questions are suggested to me. I have removed one or two of this kind; but I was not aware of the point which Dr. Homans raised, though I can see it might be a serious one. A question I wanted to suggest was that of pregnancy in the uterus with multiple fibroids. The other day a woman came to me who had had advised the removal of an extra-uterine pregnancy. As near as I could judge, the uterus was about half the size of the fist, and the only evidence of extra-uterine pregnancy was slight hæmorrhage after passing one turn two weeks. The attending physician made a diagnosis of extra-uterine pregnancy from feeling one of these small tumors. I think where a physician has recommended active treatment for extra-uterine pregnancy, one feels great responsibility in advising against it. I felt very certain that the evidence was not sufficient to justify hysterectomy or even exploratory laparotomy. I think one can see by looking at this specimen of Dr. Cushing's how easily one could be deceived as to the situation of a tumor on one side of the uterus complicated by symptoms usually seen in extra-uterine fœtation,—irregular pains and hæmorrhage. It did not seem to me wise or justifiable to remove the uterus or operate for a supposed extra-uterine pregnancy where there was nothing to point to that condition except the history.

Dr. Homans: Had the woman had children?

Dr. Richardson: No, sir.

Dr. Homans: It is rare for these women with multiple fibroids to become pregnant inside or outside the uterus. One attack of hæmorrhage two weeks after a period would not be enough to make a diagnosis of extra-uterine pregnancy in an irregular uterus like this. Then, again, there is apt to be a good deal of pain in extra-uterine pregnancy; perhaps there was in this case. There is another thing about these uteruses that have fibroids: that is, if the woman does become impregnated, after the labor the fibroid *often* disappears with the involution of the uterus.

I don't think you can always tell what to advise people in regard to premature delivery who have fibroids and are pregnant. I remember a case in which there was a large fibroid in the posterior lip of the uterus, and every one of the children had a dent in the forehead where the forceps was applied. The patient had many children, and always got along well. It would have been a difficult tumor to remove and perhaps impossible. I remember another in the New England Hospital. I went to see the patient just as labor began, and the fibroid filled the pelvis. I went home and got my instruments for Cæsarean section, and when I went back the fibroid had been pulled out of the way and child's head was presenting. That led me to give some advice to a gentleman, who came from Portland about two years afterwards, and asked me to see his wife at Young's Hotel. She had a large fibroid, and was five months' pregnant. I advised them to let it alone and take the chances from labor at term. But he went on to New York and consulted a distinguished physician, and came back with a letter from him saying that the condition at term would be very dangerous and the proper thing to do was to produce immediate delivery in order to save the lady's life. He asked me if I did not agree with Dr. ——? I said, "I have already given you my unbiassed opinion." "But may not Dr. —— be right?" I said, "Of course, he may; but if it were my sister or mother, I should let her alone." He went home; and his physician there produced premature delivery, and the patient died in two hours. Another case I saw where the gentleman in his anxiety to deliver used so much force that he ruptured the uterus, and that woman died. So that I have been rather in favor of letting these fibroid tumors that complicate pregnancy alone, unless in my opinion immediate delivery was imperative.

Dr. J. Homans read a paper on

TWO CASES OF LITHOTOMY IN THE FEMALE.[1]

Dr. Richardson: I think these cases are very interesting, certainly very rare. I remember seeing, when I was house-pupil under Dr. R. M. Hodges, a large stone formed over a hair-pin which had got into the bladder in some way. This case made a good recovery after operation. I once saw a stone nearly as large as the stone shown by Dr. Homans, given me by an old negro woman, which she had passed by the urethra. I recall seeing but one stone in the female bladder, and that a phosphatic stone in a foul urine. One point in the treatment of these cases: in the female bladder I think it is very easy to remove by litholapaxy. I am getting to feel that litholapaxy has its distinct limitations in the male as well as female bladder. I believe that it is an interesting question. We have been in this community educated to believe the lithotrite is the only way to remove a stone. I have removed perhaps thirty stones from the male bladder; and in the cases in which I have performed lateral lithotomy I have been very much gratified. I have performed lithotomy in children with invariable success. The only misfortunes I can recall have been in men where I have used the lithotrite with rapid evacuation. I refer to one case, although the paper is on stones in the female bladder, because it might as well have been in the female bladder. I found in the dissecting-room an encapsulated stone some months after the operation, which I supposed had been complete. Now, suprapubic lithotomy would have revealed this condition of things. I feel now that, in the case of a phosphatic stone in a foul bladder, lithotomy with perineal drainage is much preferable to litholapaxy. This may be heresy. Several cases of stone have come to me in the last year or two. Several I cut, and several I crushed. A clean stone in the female bladder with good urine, crush; but in a foul bladder with resulting phosphatic stone and with the safety of perineal section, I believe the advantages to be gained by drainage and digital exploration of the bladder are great, and that operation is to be preferred.

Dr. Bolles: I had a case of phosphatic stone in the female bladder two or three years ago. I removed by crushing and washing out. The operation was easy and the stone was about one and one-eighth inches in diameter.

Dr. H. W. Cushing: As to the question between lithotrity and lithotomy, there are some cases which notwithstanding a foul urine recover without very much difficulty after lithotrity. The general opinion is, I think, that the operation of crushing is preferable in all cases except: (1) In infants or very young children, where the size of the urethra and bladder does not permit the introduction or manipulation of instruments strong enough to crush or remove the calculus; or where the instruments of this unusual size are unattainable. (2) In cases of calculi of extreme size. (3) In cases of calculi of extreme hardness. Where these conditions obtain, lithotomy is the operation indicated. In the male bladder with a large calculus, where lithotrity promises to be a satisfactory operation, it would seem perhaps better to give the patient that operation first, notwithstanding the presence of foul urine, since this is not necessarily a permanent obstacle to recovery.

Dr. F. B. Harrington made some remarks upon the

VALUE OF WHITMAN'S FOOT-PLATE IN PARALYTIC VALGUS.

Dr. Richardson: I would like to bear witness to the efficacy of these plates made by Dr. Harrington, and applied to a form of distressing pain in the foot the exact nature of which I do not know. Four or five years ago Dr. Harrington was kind enough to make me a plate in this way, as I was suffering very much from pain in the bottom of the heel and nowhere else. The only symptom was acute pain in the bottom of the os calcis, so that in getting up in the morning and going across my room to the bath-room the pain was very great indeed. I wore the plate for a year with the greatest comfort. At the end of that time I left it off gradually, and have never worn it since.

Dr. Brackett: I think Dr. Harrington has called attention to a point of interest, and that is, that we can use this plate in other things than flat-foot. I had that called to my attention in a case of very severe sprain in which for nine weeks the patient was unable to put the foot to the ground, and thinking the trouble might be due to stretching of the injured ligaments, I made a plate, and walking was at once resumed. Patients often ask: "Must I wear this always?" I think you can assure them that with care they can leave it off after a period of constant and faithful use.

In regard to this method of taking a cast, I think it is a convenient one; and yet we must come to the fact that it is a matter of individual preference to which we get used. You can see exactly what you are doing. But a criticism I should like to make is that in bending the foot forward you distort it, and change the shape of the arch. In doing it this way the plate is apt not to fit quite so well. Thinking it might be of interest to the Society, I have brought one or two plates, because I think that the matter of the shape of the plate is in a great measure one of getting rid of superfluous metal. The plate does the same thing anyway; but you can get along sometimes with a small amount, and again it may take more. So I don't think it is fair to assume that we must always have a certain amount or kind of plate. I remember an elderly woman, very stout, who could wear only the old-fashioned form of foot-pad; but in the lighter cases I think we can get rid of a good deal of this metal. Dr. Harrington has cut off a large part of the foot-piece and a large part of the heel. The plate which Dr. Bradford and I have been using a good deal is something like this. In these feet I think there are two questions one ought to think of: one is the stretching of the long ligament which tends to the rolling inward of the foot, and the other is a point Whitman makes a good deal of, and that is abduction of the foot. We find that the lines drawn through the heel and through the anterior part of the foot do not coincide, and unless we do away with this abduction, we do not correct the deformity. By doing away with abduction and supporting the arch, we accomplish the whole. Dr. Whitman states that the only difference in the result which he attains is in the matter of attention to detail, and to see him work, one is impressed with his great care. In the first place, he takes his cast of the whole foot, and retains the method of having plates made over the iron cast. There are three points he lays particular stress on: first, abduction of the foot; second, the position of the foot; and, third, lateral pressure. The cast is shaved in front of the heel, because he claims that the pressure is borne from the ankle-joint on the anterior end of the os calcis; and the first step is the lowering of that bone, therefore the key-note of it is to keep that from sinking, and he therefore shaves away very decidedly anteriorly to this. Then a thing he claims to be important is the position of the foot in walking. He urges patients to walk with the foot turned in, and he insists upon the use of the Waukenphast shoes. In addition to that he gives many exercises. He claims these painful cases should always be put at rest. I think it sometimes can be overdone; and I have brought this tracing to show. It represents a case of flat-foot seen by Dr. Bradford four years ago. It was so bad then that he was said to have some spinal-cord disease, because he could not walk across the room. He was fitted with the old-fashioned plate, and got entirely well. His arch at present is well formed.

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[1] See page [illegible] of the Journal.

Dr. H. W. Cushing: Drs. Harrington and Brackett have left very little to be added to our knowledge of this valuable appliance. The amount of relief it affords in some cases is very striking. The different types shown here illustrate very well the development of the plate, and show, also, how unnecessary portions have been gradually eliminated, leaving, as shown in Dr. Royal Whitman's latest form, a plate almost the reverse in contour of the original type. With reference to the combination of the plate with an upright, it should be stated, I think, that it is an appliance of value in some cases of impaired muscular power of the leg and foot due to anterior polyomyelitis, where it is necessary to support the leg and ankle as well as the plantar arch. Another method, which has not been mentioned is that of Mr. H. O. Thomas, of Liverpool, England.[2] It is one which is available in cases where a plate cannot be obtained, since it can be applied to any shoe, and is efficient in many cases. In Liverpool and Birmingham I found it extensively and successfully used. The arch of the foot is raised by raising the inner side of the posterior portion of the foot. This is accomplished by making the heel thicker on the inner side and filling up the space on the inner side of the shoe between the heel and the point at which the head of the first metatarsal rests.

The Dane[3] hard-rubber plate was devised in order to furnish a plate as light as possible, and also one which would not be injured by rust. I understand from Dr. Dane that it fulfils these requirements when made of proper material, but that at present the quality of rubber furnished is often unsatisfactory. Those that I have seen have worn well.

Dr. M. H. Richardson: In the last six years I have had occasion to remove various articles from the alimentary canal. I include now in my list three plates of teeth, a silver caseknife, safety-pin and a silver spoon, the last one. This spoon was swallowed by an insane patient one Friday afternoon. I went out to the McLean Asylum to see her and was shown a model said to be like the one swallowed. In one point it was not like it, namely, in having no sharp, cutting edge. I was shown a plated spoon, the edge of which was much thicker. There was nothing at the asylum with which to explore the œsophagus. The woman complained of no especial pain. I advised watching the case, taking the temperature and looking for signs of constitutional trouble. Dr. Cowles said he had known the handle of an iron spoon to pass through the alimentary canal. The temperature rose to 103°. The anatomical point which occurred to me was one I investigated when the other woman swallowed the safety-pin. I opened the stomach in that case and took out the safety-pin through the pylorus. The question then was whether a sharp crochet-needle could get through the pylorus. I made a good many investigations on the cadaver to determine that point. I did not think it could get past the curve in the living stomach. So I watched for the spoon in the duodenum or pylorus. The temperature went up and on the third day she was taken to the hospital and on the following morning I prepared to open the stomach. I passed a probang and detected this foreign body in the œsophagus with the body of the spoon at the cardiac orifice. I grasped this end but could not pull it out. I had no hesitation in deciding on external œsophagotomy. I opened the œsophagus. The operation was without trouble. I introduced polypus forceps and pulled this spoon out. It came out with great difficulty and this sharp edge cut the inferior branch of the subclavian artery. The woman died four days afterwards. The point in this case is this: The first case of the kind, impacted body in the œsophagus, I removed through the stomach. Dr. Bull, of New York, removed in the same manner, a peach stone through the œsophagus. Dr. Phinney, of the Johns Hopkins Hospital, removed a peach stone the other day from the stomach. There was great temptation to perform this operation in this case. I will explain the reasons why I think it would have been better to do so. I think in such a case we should compare the advantages of gastrotomy and external œsophagotomy and be guided by the foreign body, length of time it has been impacted, etc. This was one of the smallest bodies I have found impacted in the œsophagus.

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[2] Diseases of the Hip, Knee and Ankle. H. O. Thomas, Liverpool, England.

[3] Boston Medical and Surgical Journal, [illegible] vol. cxxvi., pp. 101, 130, [illegible].

I would like to mention another case in which a similar utensil was concealed not with suicidal intent. It was the case where a man with general paralysis, after eating his dinner, concealed his knife. The diagnosis was made by elimination. The knife was lost and every place was searched and it was decided the knife must be up this man's rectum and investigation showed it to be there; that is to say, he had pushed it up through the rectum into the abdominal cavity. Extravasation of fæces occurred and general peritonitis and death occurred in about forty-eight hours.

I should like to know what the experience of others has been with reference to the power of insane people to resist the shock of surgical operations. In several cases they have not seemed to me to bear surgical interference well.

DR. HOMANS: I have removed ovarian tumors from insane people and they have recovered just like other people.

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Recent Literature.

Surgery: Its Theory and Practice. By WILLIAM JOHNSON WALSHAM, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, etc. Third edition, revised and enlarged, with illustrations. Philadelphia: P. Blakiston, Son & Co.

This last edition of a work which was originally written to aid the student to obtain a general insight of the theory and practice of surgery in a brief concise manner, appears in its new form thoroughly revised and enlarged. The chief additions and alterations are in the subjects of general pathology. The sections of bacteriology, tuberculosis, hydrophobia are enlarged, and actinomycosis added. This edition contains thirty-six additional pages and twenty-four new illustrations. The general character of the work is satisfactory, and it is as complete as a work of such scope can be made. Some of the illustrations are excellent and instructive. The methods of treatment are those based on English customs rather than those representing the opinions of the best Continental or American surgeons. The book contains much valuable information in an easily accessible form.

Accidents and Emergencies. A Manual of the Treatment of Surgical and Medical Emergencies in the Absence of a Physician. By CHARLES W. DULLES, M.D., Fellow of the College of Physicians, Philadelphia; Physician to the Rush Hospital, etc. Fourth Edition, thoroughly revised and enlarged. 155 pages; 24 illustrations. Philadelphia: P. Blakiston, Son & Co. 1892.

This neat, attractive little volume is intended strictly for emergency work. It is so arranged as to be intelligible to a non-medical person, and is full of valuable suggestions. A little knowledge is a dangerous thing, as a rule; but in this case the facts have been so judiciously selected and so practically presented to the reader that the work forms a notable exception to most books of its class. A noticeable feature is the chapter on poisonous plants, which is well illustrated by woodcuts of the more common ones. The reader is not perplexed by a multiplicity of directions. The facts are so classified in a table of contents and index as to be readily found when wanted; and the directions given are, as a rule, excellent.

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THE LEUCOCYTES OF HUMAN BLOOD.

IT is a little discouraging that, notwithstanding the immense amount of microscopic study devoted to the formed elements of the blood, so little is yet positively known respecting the leucocytes and their functions. This is, however, owing to the inherent difficulties of the investigation. If, in some transparent membranes, as the web of the frog's foot, the leucocytes can be observed coursing to and fro in the blood current, and if the phenomenon of diapedesis can be witnessed as this membrane is artificially irritated and brought into a state of incipient inflammation, the experiment is necessarily a limited one, and but little idea can be got *de visu* therefrom as to the functions of these truly living elements in the living organism.

Much can be learned by examining specimens of blood drawn from peripheral vessels in health and in disease, especially such diseases of the blood or blood-making organs as malaria, chlorosis and leucocythæmia (and here we owe a vast debt of gratitude to many living investigators); other data of great value have been derived from microscopical examination of the blood of the spleen and other supposed hæmatopoietic glands, but it cannot be said that we have yet more than passed the threshold of inquiry. There is really little warrant for the fancies in which some physiologists have indulged. It may be that the leucocytes, spider-like, spin connective-tissue and nerve and muscle fibre (Beale), but this stupendous phenomenon has not yet been witnessed.

Being admittedly living elements, it might be supposed that the leucocytes would have the function of reproduction like living cells generally, that is, that they would multiply by scissiparity, but this, according to Maurel (who has been studying the leucocytes for the past twenty years), has never been seen. His conclusion is that "the leucocytes are generated elsewhere than in the blood." Another curious character is that in the earliest, or formative, stages, the leucocyte is inert and devoid of spontaneous movements.[1] This singular want of activity of the white corpuscles in the earlier periods of their evolution may be contrasted with the peculiar mobility of the red globules in certain morbid conditions. According to the observations of Gilbert and Hayem, the red corpuscles which in the normal state are absolutely motionless, in chlorosis, progressive pernicious anæmia, and symptomatic anæmia "appear to be endowed with an obscure amœboid contractility and present deformations like leucocytes; others acquire the property of displacing themselves with activity in the field of the microscope."[2] These mobile corpuscles would seem to be elements of imperfect constitution which have preserved, while fixing a certain portion of hæmoglobin, the contractile properties of hæmatoblasts.

As for classification we need not again refer to that of Ehrlich, or of Uskow, given by Dr. Thayer in this Journal, February 16, 1893. So many varieties are presented as to make the subject rather confusing; this Dr. Thayer recognizes, and presents a much simpler classification of his own with four divisions:

(1) Small mononuclear leucocytes.
(2) Large mononuclear and transitional forms.
(3) The multinuclear neutrophiles.
(4) The eosinophiles.

Hayem's division of the leucocytes is based on the form; he admits three varieties:

(1) Leucocytes without movement, but little granular, or very finely granular.

(2) Mobile elements with finely granular protoplasm presenting in their centre a clear, irregular spot, changing sometimes into buds or lobes.

(3) Contractile elements, highly granular.

The classification of Maurel, based on the evolution of the leucocyte, emphasizes the changes from the small, rounded, motionless form without granules, to forms becoming progressively larger, presenting deformations and spontaneous (vital) displacements; the protoplasm becomes charged with granulations. He calls particular attention to certain rose-colored bodies which appear in the leucocytes during the most active stage of their evolution. These bodies are elastic — lengthening out and afterwards resuming their previous size, when the leucocyte passes through a narrow space; they form in the leucocyte itself; are sometimes single, sometimes multiple. These rose-bodies are probably only nuclei variously modified. Little by little, the leucocyte becomes charged with granules which mask the rose-bodies, and its displacements become slower, finally ceasing. The last manifestations of life are internal, that is, movements or displacements of the granules and rose-bodies; then, after a few hours, a rapid or, oftener, a slow disaggregation of the leucocyte takes place. To sum up, according to Maurel, there are three typical divisions in the evolution of a leucocyte: The first is that which precedes every manifestation of life; the second embraces all the active period of its existence, finding expression in deformations and displacements; the third and last, beginning with its death, ends in its complete disaggregation.

In this Journal, August 11, 1892, p. 147, we referred to certain researches of Maurel "On the Action of the Alkaloidal Poisons on the Leucocytes." He found by numerous experiments on the toxicity of atropine, strychnine, pilocarpine, etc., on various animals, that there was a complete concordance between the quantity of toxic material necessary to kill the animal and that necessary to kill the corpuscles. This concordance suggested "a special rôle of the leucocytes in death by the toxic agent." Maurel has continued his experiments with bichloride of mercury as the poison.[3] He found the same harmony between these experiments and clinical teachings, and sums up an elaborate series of researches as follows:

(1) Doses rapidly mortal for the totality of our leucocytes are equally so for the organism.

(2) Those which seem to be the limit of toxicity for the leucocytes mark equally the limit of tolerance for the organism.

(3) Lastly, doses which are supported by the leucocytes are also supported by the organism.

From the point of view of toxicology, his experiments appear to justify the following conclusions:

(1) Bichloride of mercury, in doses powerfully toxic, exercises a deleterious effect on the two principal figured elements of the blood, the leucocytes and the red corpuscles.

(2) But it acts in much feebler doses on the leucocytes than on the red globules.

(3) Lastly, in taking account, first of the fact that minimum doses surely mortal for the organism concord with the smallest quantities necessary rapidly to kill the totality of the leucocytes; then, that there is also harmony between the maximum doses supported by the organism and the maximum quantity which the leucocytes can support; lastly, that thus far no one has indicated any histological element which is more sensitive to this poison than the leucocytes, he thinks it probable that the action of bichloride of mercury on the leucocytes plays a rôle of considerable importance in poisoning by this agent.

From the point of view of therapeutics, bichloride of mercury has been found to be a most energetic antiseptic, and Maurel insists on the fact that in order to have this therapeutic action, it is not necessary that the dose given shall kill the microbe; it is enough that this dose shall hinder or attenuate it sufficiently that the leucocyte may triumph over the microbe. He believes fully in the phagocyte theory, which invests the leucocytes with a most powerful protective rôle against microbe invaders. The doses of bichloride given for therapeutic purpose should be so small as not seriously to harm the leucocyte in the combat with the bacterial foe. If the depressive and anæmiating effects of the poison be carried too far, the leucocytes will become enfeebled and easily overcome. This enfeeblement and vulnerability of the leucocytes is often realized when syphilitic patients, long drugged with mercurials, fall a prey to typhoid fever, pneumonia, or other microbic disease; they are very prone to succumb to such new infection.

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[1] [illegible] [illegible] sur les leucocytes [illegible] [illegible]
[2] Gilbert: Traité de Médecine, Charcot t. i, p. [illegible].
[3] Bull. Gén. de Thér., Mars [illegible]

We can only briefly allude to the suggestive, though somewhat speculative, articles of James Dickinson in the *Lancet* "On the Functions of Indifferent Cells in the Human Organism." Dickinson regards the leucocytes as phagocytes and scavengers. They remove dead, waste material (cell débris) that would otherwise do mischief, combat pathogenic organisms, and in the performance of their duties are the principal factors in inflammation. "The pus cells are but leucocytes that have died at their post in the execution of an essential duty." The granules which we see in the protoplasm of active, healthy leucocytes, and which, in fact, enable us so well to distinguish them, are particles of fat, glycogen, etc., which the leucocytes have picked up in their wanderings, and which are undergoing the process of intercellular digestion. The picture is a pleasing one where it is made graphically apparent how that the "voracious and indiscriminating appetites" of these migrating cells are utilized in the plan of the body to supply important needs.

"We should," he says, "on *a priori* grounds, look naturally to the leucocytes to provide new red cells and to dispose of old ones, the former corresponding with their organizing, the latter with their absorbing powers. But the final word on this matter has yet to be said, and the exact relations of the spleen and red marrow to the red cells and to each other, have yet to be worked out. The elements found in circulating blood that have been described as transitional between leucocytes and red cells, are probably leucocytes that have taken into their bodies the disintegrated remains of red cells. Whether such leucocytes do afterwards undergo any transformation has yet to be determined.

"Lastly, as a function of leucocytes, reference must be made to the power of organization which they display under certain conditions. This function concerns chiefly the earliest stages of the organism's development, and in the fully-developed organism falls naturally into abeyance until a need for it arises in the shape of destruction of tissue."

Enough has been said to indicate the importance of the leucocytes in the human body, the surpassing interest of the study, and the need for further research.

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ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL.

The seventy-ninth annual report of the Massachusetts General Hospital presents the usual statements from the trustees, the treasurer, the resident physician of the hospital and the superintendent of the McLean Hospital. These statements in regard to so old an institution, under the management of a private corporation, one-third of whose members are appointed by the State, with a long traditional experience and a widely-extended reputation, are always of interest whether taken by themselves or in comparison with kindred institutions both private and public.

The report shows an increase in the cost of caring for the hospital patients beyond the proportional increase of the numbers cared for. There does not seem to have been any substantial improvement in the numbers of those able or willing to pay for their maintenance in the hospital. The cost of hospital care is steadily increasing, and is expected to further increase. The trustees now accept $10 per week in the general wards for paying patients, which is $4.54 less than the average weekly cost of maintaining them. The expenses of the hospital exceeded the receipts by $17,474; the expenses at the Convalescent Home exceeded the receipts $750.98; the expenses at the McLean Hospital exceeded the receipts $3,448.54, making a total deficit of $21,673.52.

The trustees believe that the cases in which the charities of the institution are seriously imposed upon are few, and, on the other hand, they do not think that any greater restriction than that now practised in the admission of free patients can be enforced without a degree of hardship and suffering which this community has not hitherto been willing to witness. But from the economic aspect of the affairs of the hospital, either the funds for free beds must be increased, or the use of the hospital must be more closely restricted to those able to pay the charges, and free patients must go elsewhere. This has been the burden of the reports of the hospital for some years back.

The McLean Hospital is more nearly self-sustaining than the General Hospital.

The whole number of patients treated during the year in the General Hospital was 3,523; of these 566 paid, 155 paid part of the time, and 2,793 were free. Of these patients 1,209 were medical, 2,124 were surgical; 1,963 were male, 1,370 were female. The average time of paying patients was 2.17 weeks, and that of free patients 3.64. The proportion of deaths to the whole number of results was 8.94 per cent.

A considerable portion of this report is taken up with a description of the new McLean Hospital's buildings and grounds, to which it is hoped to move a year from now, the old grounds having been sold to a railroad corporation. Another occasion will be availed of to revert to the part of the report relating especially to the McLean Hospital.

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MEDICAL NOTES.

Medical Legislation in Pennsylvania. — The legislature in Pennsylvania has passed a bill establishing a medical council and three State boards of medical examiners, corresponding to the three so-called schools. The boards are to be appointed by the Governor, and their work is to be supervised by the medical council, consisting of the Lieutenant-Governor, the Secretary of Interior Affairs, the Superintendent of the State Board of Health, with the presidents of the boards. Applicants will be required to have studied medicine for four years.

Medical Legislation in Ohio. — Last year we noted the ease with which itinerant doctors and medicine pedlars influenced the Ohio Legislature to defeat a bill regulating the practice of medicine, and there seems little prospect that such a law can be passed. But recently the same branch of the legislature has passed a law regulating the practice of veterinary surgery and requiring an examination before allowing any one to practice upon horses.

Dr. Fernando Lopez. — The Mexican Legation at Washington furnishes information that Dr. Fernando Lopez, Surgeon-General of the Mexican Army, has been appointed one of the delegates to represent the Government of Mexico at the Pan-American Medical Congress.

Government Appropriation for the Pan-American Medical Congress. — It may not be generally understood that the Sundry Civil Bill appropriated $15,000 for the entertainment of the Pan-American Medical Congress.

Removal of the Ovaries of the Insane. — The medical staff of an asylum in Pennsylvania, says the *Medical Record*, became much impressed with the therapeutic value of this operation, and operated accordingly. The fifth patient died; and the Lunacy Committee of the State Board took up the matter and made a report, condemning the practice, and containing the opinion of a legal member of the Board, who says that he believes that the operation of oöphorectomy upon insane women, as recently practised and as proposed to be practised in one of the State hospitals for the insane, unless necessary to save life, is not only illegal, but, in view of its experimental character, it is brutal and inhuman, and not excusable on any reasonable ground. To quote a learned medical opinion: "To operate on organs not diseased for the relief of undefinable symptoms, hysterical symptoms, and epileptic symptoms, is unwarranted. A lunatic cannot give a legal consent to the performance of an experimental operation. Nor can her relatives legally give such a consent in her behalf, and therefore a surgeon practising oöphorectomy upon an insane woman, unless to save life, takes a great risk. He may take the risk of a criminal prosecution. It is regarded by the best medical authorities as a useless and improper expedient for the cure or relief of insanity; and the operation of oöphorectomy in a public hospital upon indigent insane women must be regarded as largely experimental, and for that reason is bound to reflect upon hospital authorities now boasting of their modern humane methods of treatment."

Lemons and Cholera. — The Imperial Health Office at Berlin has published an article stating that the coma-bacillus is destroyed in a few hours by being placed upon the cut surface of a lemon or of an orange, and that upon the external skin of these fruits they die in from one to two days. Consequently there will be no restriction upon the sale of those fruits, even if they are brought from places that are infected with cholera.

Dr. Ceccarelli, the private physician to the last two popes, died several weeks ago in Rome. A short time after his death the authorities received a series of communications stating that he had been poisoned. In spite of the protests of his attending physicians, it was ordered that the body be exhumed, and the alimentary track was minutely examined by experts. No trace of poison was found, and it was proved, as had previously been diagnosed, that death was due to peritonitis following intestinal ulceration.

Soda in Soda-Water. — A curious case has been recently tried in London, under the act forbidding the sale of foods and drugs not containing what is represented. An inspector brought two publicans into court for selling soda-water containing no soda, although it was admitted that soda-water as sold for a beverage in the whole world was commonly nothing more than a solution of carbonic-acid gas. The case was decided against the defendant. It is hard to say whether it would be harder to change the name of soda-water or to sell it with bi-carbonate of soda in it.

The Dangers of Chloroform. — The dangers of chloroform are again prominently brought out by the work of the *Lancet* commission appointed to investigate the subject from a clinical standpoint. A very large number of cases have been collected and tabulated, giving the essential details of deaths, but the actual fatalities from chloroform do not represent the only disadvantages in using a poisonous drug for anæsthesia. We are constantly told that chloroform should only be administered by an expert, and that it is contra-indicated in the presence of different physical defects, also, that in many minor operations it is hardly worth while to run the risk of anæsthesia. Even in major operations the anæsthetic is often stopped before the operation is finished on account of alarming symptoms.

Dispensary Abuse in Europe. — Both in Paris and Berlin the abuse of medical charities, and the establishment of pseudo-dispensaries is receiving attention. In Berlin the Medical Professional Union have passed resolutions declaring that the number of polyclinics is too large, and that an effort must be made to keep patients who are able to pay away from these institutions, so far as this is compatible with the aims of medical education. In Paris, it is not uncommon for rich patients from outside the city to go to one of the hospitals in poor clothes, under an assumed name. The Municipal Council have lately passed resolutions asking the administration of the hospitals to take energetic measures to stop this abuse by inquiring from the local authorities from which the patients come, and to demand a fee from such patients as can pay in case a patient is treated.

BOSTON.

Lectures by Dr. H. C. Wood. — Dr. H. C. Wood, of Philadelphia, will give a series of lectures at the Harvard Medical School, to begin this evening. A list of the dates and the subjects of the first lectures will be found on the last page of this week's Journal. The Harvard Medical School Association invites the profession to attend these lectures.

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Miscellany.

THE INFLUENCE OF STABLES UPON HEALTH.

For a long time the idea has been more or less prevalent that breathing the exhalations from stables is beneficial, or, at all events, not prejudicial, to health. In order to practically test this question Dr. John T. Nagle, Registrar of Records of Vital Statistics, in New York, made an investigation, the results of which seem to show in a decisive way that the notion is erroneous.

At the meeting of the Board of Health held April 19th Dr. Nagle presented his report of the investigation; and in it he states that during the eight months ended on March 1st, last, sanitary policemen took a census of all persons living in houses situated within fifty feet of a stable, including occupants of private dwellings, tenements, and buildings used in part as stables, but not hotels, the occupants of which are in the main transient. They inspected 3,596 stables and 10,266 houses located within fifty feet of the stables. In these houses there was a population of 241,670, including 33,325 children under five years of age. This leaves a population of 1,606,743 living in houses more than fifty feet from stables. The diseases which produce the greatest mortality in the city — diarrhœal diseases, phthisis and acute respiratory diseases — seem to be decidedly more prevalent and fatal near stables than elsewhere, as shown by the following table:

Diseases	Deaths within 50 feet of stable.	Deaths beyond 50 feet from stable.	Death-rate per 1,000 population within 50 feet of stables.	Death rate per 1,000 population beyond 50 feet from stables.
Diphtheria and croup	312	1,[illegible]24	1.29	1.12
Scarlet fever	139	8[illegible]8	.58	.52
Whooping-cough	51	3[illegible]0	.21	.20
Diarrhœal diseases	518	2,943	2.14	1.83
Erysipelas	28	161	.12	.10
Puerperal fever	41	[illegible]	.17	.15
Phthisis	706	4,327	2.92	2.69
Other tuberculous diseases	16[illegible]	809	.68	.50
Convulsions	87	424	.36	.26
Bronchitis	[illegible]	1,768	1.31	.89
Pneumonia	790	[illegible]	3.27	3.14
Gastro-enteritis	138	759	.57	.47

The deaths from contagious and infectious diseases will also be seen to have shown a larger percentage in those residing in houses within fifty feet of stables.

VIRCHOW'S TRIBUTE TO GLISSON.

In his Croonian lecture, Virchow drew a short sketch of the history of physiology and pathology, with the principal workers in these sciences. In speaking of Glisson, whose name is known to the profession at large only in connection with what is known as "Glisson's capsule," he said:

"I should like to draw your attention to a man whose importance for the future development of the doctrine of life has always appeared to me to have been uncommonly great and highly significant, but who, nevertheless, has sunk into unmerited oblivion, not only among posterity in general, but also, I think I may be allowed to say, even in the memory of his countrymen. I mean Francis Glisson, who was a contemporary of Harvey, and whose works appeared almost simultaneously with those of his more celebrated colleague; but the brilliancy of Harvey's discoveries was so great that the light which shone from Glisson's work-table almost disappeared. I rejoice that on so popular an occasion I may recall the memory of the modest investigator, and may offer him the tribute of gratitude which science has to award him."

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CHOLERA IN FRANCE.

The Paris correspondent of the *Lancet* sends a long communication to that journal on the above subject. His figures, which are also shown in the form of shaded maps, are summed up in the following statement:

> Altogether cholera has invaded twenty-five communes in the neighborhood of Lorient and Vannes. The number of deaths is not yet as great as in 1892, but the epidemic has increased so rapidly within the last few days that the gravest apprehensions may be entertained. Thus from March 10th to March 31st — that is to say, during twenty-one days — there were 288 cases and 112 deaths; but from April 1st to April 9th — that is to say, during nine days — there have been 188 cases and 66 deaths. Further, the following table will show that the most recent period is the worst:

Cases and Deaths from Cholera at Lorient and the Neighboring Twenty-Five Communes.

	Cases.	Deaths.
March 10th to 31st	288	112
April 1st	26	6
" 2d	14	7
" 3d	11	6
" 4th	9	3
" 5th	23	7
" 6th	14	9
" 7th	23	8
" 8th	12	12
" 9th	50	8
Total	476	178

The above figures are very significant, especially the return of fifty cases for April 9th. This suggests that the disease is spreading rapidly, and the fact that it has again made its appearance at Vannes is alarming. This town, though it has a population of only somewhat above 20,000 inhabitants, is the capital of the Department of the Morbihan. Here are the Courts of Justice and the Prefecture, and there is also a small port. If there are not many people living at Vannes, a great deal of official business has to be transacted there, and this attracts many persons from the department. Vannes is on the main line from Lorient to the important ports of Nantes and St. Nazaire. Farther south from La Rochelle cases of cholera have been reported, but these are not yet confirmed. Nevertheless, the cases about which there is no doubt show that at present cholera is travelling southwards from Lorient. What will occur when the weather becomes warmer is a matter of the greatest possible moment. Will cholera continue its southerly course, visiting only districts as yet exempt, or will it also revive in those northern departments (where there is a constant traffic with England) which have already suffered? Should the latter be spared there would be ground for believing that the susceptibility to cholera is dying out. The number of victims throughout France last year was very small considering the large area over which the disease was scattered. That cholera should have revived this year in the Department of the Morbihan is but natural, as this is notoriously one of the most benighted and insanitary departments of France; but will it also return to those parts where greater cleanliness prevails?

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ENGLISH REGISTRATION.

WE have received from the Registrar-General of England the advance sheet annually published early in the year, giving the births, marriages and deaths for 1892. These statistics are subject to correction when the full report is issued later in the season.

From this advance sheet we find the following data:

	England and Wales.	London.
Estimated population, 1892	29,403,346	4,263,294
Marriages	226,922	37,170
Births	897,270	[illegible]
Deaths	[illegible]	[illegible]
Marriage-rate	15.4	17.4
Birth-rate	30.5	30.8
Death rate	19.0	[illegible]

The rates for 1891 were as follows for England and Wales: Marriage-rate 15.6, birth-rate 31.4, death-rate 20.2.

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THERAPEUTIC NOTES.

TREATMENT OF FOLLICULAR TONSILLITIS. — Dr. J. C. Hoag, in the *Chicago Medical Recorder* of April, recommends removing the exudate of the tonsils in cases of acute follicular tonsillitis. This he does with a small spoon, a probe wrapped in cotton dipped in peroxide of hydrogen, and a small pair of forceps. He finds that the removal of the cheesy plugs from the lacunæ and follicules is uniformly followed by a very marked amelioration of all the symptoms of the disease, and believes that in this way the source of the constitutional disturbance is attacked. He uses a gargle of peroxide of hydrogen.

FOR IRRITABLE COUGH. — The *Practitioner* gives the following:

℞ Acidi hydrocyanici diluti . . . . . ʒ iss.
Morphinæ acetatis . . . . . . gr iss.
Mucilaginis acaciæ . . . . . . ℥ [illegible].
Syrupi pruni virginianæ . . . . . ℥ iv.
Aquæ ad . . . . ℥ vi.
Misce et fiat mistura.
A teaspoonful to be sipped every four or six hours.

FOR MYXŒDEMA.[1] — One-eighth of a thyroid gland, in powder, given two to seven times a week in lukewarm beef-tea. (Arthur Davies.) — One-half to one thyroid gland daily, eaten raw. (Pasteur.) — One-half a thyroid gland, three times a week, fried sufficiently to make it palatable. (Calvert.) — Equal parts of thyroid juice and glycerin, and a five-per-cent. aq. sol. of ac. carbolic. (ʒiss — 6 grms., equal to one sheep's thyroid.) Give ♏x–xv (0.66–1.00 grm.) hypod.; or four times as much by mouth. (Murray, *Lancet*, February 4, 1893.)

RECORD OF MORTALITY

For the Week ending Saturday, April [illegible]

Cities	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New York	1,827,396	1091	349	[illegible]	32.04	1.62	3.96	[illegible]
Chicago	[illegible]							
Philadelphia	1,092,168	[illegible]	179	[illegible]	[illegible]	.76	5.13	[illegible]
Brooklyn	[illegible]	[illegible]	[illegible]	10.71	27.09	.42	2.73	[illegible]
St. Louis	477,873							
Boston	[illegible]	[illegible]	76	5.70	[illegible]	1.11	[illegible]	1.14
Baltimore	461,139							
Cincinnati	[illegible]	119	[illegible]	5.16	18.92		2.58	[illegible]
Cleveland	[illegible]	108	43	9.20	11.04	1.84	—	[illegible]
Pittsburg	[illegible]	104	45	13.44	17.28	—	—	[illegible]
Milwaukee	[illegible]	77	41	10.40	14.30	[illegible]	2.60	
Washington	[illegible]	[illegible]	[illegible]	3.95	17.38	[illegible]	.79	
Nashville	87,754	36	[illegible]	11.12	19.46	—		—
[illegible]	[illegible]	—	—	—		—	—	—
Portland	40,000	—	—	—		—		
Worcester	92,313	33	18	3.03	36.36	—		
Lowell	[illegible]	37	13	[illegible]	18.90	[illegible]	[illegible]	[illegible]
Fall River	[illegible]	[illegible]	12	9.52	33.33	4.76	—	[illegible]
Cambridge	74,644	36	11	16.66	12.50	2.78	5.55	—
Lynn	60,809							
Springfield	47,052	[illegible]	8	17.85	[illegible]	3.57	7.14	[illegible]
Lawrence	45,910							
New Bedford	44,947	18	7	5.55	11.11	—	—	—
Holyoke	[illegible]	12	[illegible]	8.33	16.66	—	—	—
Brockton	32,783	10	[illegible]	10.00	[illegible]	—	—	
Salem	31,495	22	12	18.20	36.40	—	18.20	—
Haverhill	30,065	14	2	7.14	28.56	—	—	—
Chelsea	29,479	15	3	6.66	33.33	—	—	—
Malden	27,252	11	6	—	18.18	—	—	—
Newton	[illegible]	10	[illegible]	20.00	30.00	—	10.00	10.00
Taunton	26,464	10	1	—	[illegible]	—		
Gloucester	26,008	9	2	—		—		
Fitchburg	[illegible]	13	8	—	15.38		—	—
Waltham	20,942	4	0	25.00	25.00	—	—	—
Quincy	18,669	4	1	25.00	50.00	—		
Pittsfield	[illegible]	7	2	—	28.56	—	—	—
Northampton	[illegible]	[illegible]	2		[illegible]	—	—	—
Everett	[illegible]	[illegible]	3	20.00	20.00	—		20.00
Newburyport	14,031	9	1	—	[illegible]	—		—
Amesbury	13,561	7	1	—		—		—

Deaths reported 3,325; under five years of age 1,118; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 540, acute lung diseases 526, consumption 412, diphtheria and croup 107, scarlet fever 56, diarrhoeal diseases 41, typhoid fever 34, whooping-cough 32, cerebro-spinal meningitis 25, measles 22, erysipelas 10, malarial fever 7, typhus fever 7.

From typhoid fever Philadelphia 10, Cleveland 5, New York 4, Brooklyn, Pittsburgh, Milwaukee, Washington and Nashville 2 each, Boston, Lowell, Somerville, Haverhill and Waltham 1 each. From whooping-cough New York 10, Brooklyn 8, Philadelphia 3, Cleveland, Nashville, Worcester, Fall River and Springfield 1 each. From cerebro-spinal meningitis New York 11, Brooklyn 6, Cleveland, Washington, Lowell, Cambridge, Brockton and Quincy 1 each. From measles Pittsburgh [illegible], New York and Brooklyn 4 each, Philadelphia and Cincinnati 2 each, Boston, Milwaukee, Lowell and New Bedford 1 each. From erysipelas New York 4, Brooklyn 3, Philadelphia, Holyoke and Chelsea 1 each. From typhus fever New York 7. From small-pox Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending April 1st, the death-rate was 21.2. Deaths reported 4,206; acute diseases of the respiratory organs (London) 421, whooping-cough 119, measles 108, diphtheria 65, scarlet fever 55, diarrhœa [illegible], fever 31, small-pox (London [illegible], [illegible], Oldham, [illegible] and Halifax 2 each, Derby, Manchester and Salford 1 each) 17.

The death-rates ranged from [illegible] in Swansea to [illegible] in Bolton. Birmingham 22.0, Blackburn 19.3, Bradford 18.8, Croydon 15.3, Gateshead 18.9, Hull 15.5, Leeds 21.3, Leicester 19.1, Liverpool 24.0, London 21.0, Manchester 24.4, Newcastle-on-Tyne 20.4, Nottingham 18.0, Salford 27.7, Sheffield 18.7.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending April 8th, the death-rate was 20.9. Deaths reported 4,130; acute diseases of the respiratory organs (London) 400, whooping-cough 115, measles 115, [illegible] fever 25, small-pox (Salford [illegible], [illegible] 2 each, Birmingham, Bolton, Manchester, Oldham, Halifax, Sheffield and [illegible] 1 each) [illegible].

The death-rates ranged from [illegible] in [illegible] to [illegible] in Bolton. Birmingham 20.2, Bradford 22.8, Croydon 11.5, Gateshead 17.8, Huddersfield 16.0, Leeds 24.0, Leicester 18.5, Liverpool 26.3, London 20.4, Manchester 25.2, Nottingham 18.7, Salford 22.3, Sheffield 20.9, Swansea 17.2.

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[1] Universal Medical Journal.

METEOROLOGICAL RECORD,

For the week ending April 15, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer			Relative humidity			Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...9	30.03	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	12	7	C.	C.	
M..10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	[illegible]	10	[illegible]	O.	O.	
T..11	[illegible]	[illegible]	[illegible]	[illegible]	56	40	[illegible]	N.E.	S.E.	[illegible]	[illegible]	C.	C.	
W..12	[illegible]	48	[illegible]	[illegible]	[illegible]	[illegible]	44	S.W.	S.W.	3	10	O.	O	
T..13	[illegible]	[illegible]	[illegible]	[illegible]	45	87	[illegible]	S.	S.W.	[illegible]	12	O.	O.	
F..14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	N.E.	7	1.	O.	R.	[illegible]
S..15	29.80	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	[illegible]	11	O.	O.	[illegible]
[illegible]														

[illegible] R., rain; T., threatening; N., snow. [illegible] Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 15, 1893, TO APRIL 21, 1893.

Major Henry M. Cronkhite, surgeon, U. S. A., will proceed to Fort Wadsworth, New York Harbor, and report to the post commander for temporary duty.

Captain Henry S. Kilbourne, assistant surgeon, U. S. A., will be relieved from duty at Fort Riley, Kansas, on receipt of this order at that station and will report in person to the commanding officer, Fort Clark, Texas, for duty at that post.

First-Lieut. Merritte W. Ireland, assistant surgeon, will be relieved from duty at Fort Riley, Kansas, on receipt of this order, and will report in person to the commanding officer, Fort Apache, Arizona, for duty at that post, relieving **Captain Nathan S. Jarvis**, assistant surgeon.

Captain Jarvis, upon being relieved by **First-Lieut. Ireland**, will report in person to the commanding officer, David's Island, N. Y., for duty at that post, relieving **First-Lieut. Madison M. Brewer**, assistant surgeon, U. S. A. First-Lieut. Brewer, upon being relieved by Captain Jarvis, will report in person to the commanding officer, Fort Riley, Kansas, for duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 22, 1893.

A. C. Gorgas, medical director, from the Naval Hospital, Philadelphia, Pa., and to special duty Philadelphia, Pa.

D. Kindleberger, medical director, from special duty, Philadelphia, Pa., and to the Naval Hospital, Philadelphia, Pa.

A. B. Pusey, assistant surgeon, ordered to the Naval Hospital, Norfolk, Va.

Henry LaMotte, assistant surgeon, detached from the U. S. S. "Vesuvius" and to the Naval Hospital, Norfolk, for treatment.

C. W. DeValin, assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and to the U. S. S. "Vesuvius."

John C. Wise, surgeon, detached from the U. S. S. "Alliance" and to the Naval Hospital, Norfolk, Va , for treatment.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, May 1st, at 8 o'clock.

Dr. T. Amory DeBlois: "Reducing the Tonsils." Discussion opened by Dr. J. W. Farlow.

Dr. Samuel Breck: "A Case of Acute Cerebral Hyperæmia."

John C. Munro, M.D., *Secretary*.

Boston Medical Association. — The regular annual meeting of the Association for the regulation of the fee table in the City of Boston, will be held Wednesday afternoon, May 3d, at 3 o'clock, at 19 Boylston Place.

Executive Committee. — Francis Minot, Chairman; J. Collins Warren, George G. Tarbell, Charles P. Putnam, Vincent Y. Bowditch.

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

Suffolk District Medical Society. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 29, 1893, at 8 P. M.

Papers: Dr. H. F. Vickery: "Cases of Pneumo-Thorax."

Dr. J. W. Elliot: "Hysterectomy for Fibroids, with cases." Discussion by Drs. Homans, Cabot, Richardson, and Dr. Irish of Lowell.

Business: Report of the treasurer, the committee on social entertainment, and the librarian.

Election of officers.

Supper after the meeting.

Members are requested to notify the Secretary, at 188 Marlborough Street, of any error or change in address.

Edward N. Whittier, M.D., *President*.
James J. Minot, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL ASSOCIATION.

LECTURES BY PROFESSOR WOOD.

Prof. H. C. Wood, of Philadelphia, will deliver five lectures on therapeutics before the members of the Association. These lectures will be given at the Harvard Medical School at 8 o'clock, on the evenings of April 27th and 28th, May 4th, 11th and 18th.

The subject of the first two lectures will be (1) "Heart Stimulants and Heart Depressants." (2) "Opium and the Treatment of Narcotic States."

Members of the Association are invited to attend the lectures.

Robert W. Lovett, *Secretary*.

APPOINTMENTS.

Dr. Edward M. Buckingham has been appointed Visiting Physician at the Boston City Hospital.

Dr. Charles M. Green has been elected Assistant Visiting Physician for Diseases of Women at the Boston City Hospital.

The Legislature has elected **Prof. Lewis A. Stimson**, of the Medical Department of the University of the City of New York, a member of the Board of Regents of the New York State University, in the place of **Chancellor Curtis**, deceased.

RECENT DEATHS.

Prof. Rawdon McNamara, of Dublin, who died of pneumonia on April 12th, was one of the surgeons of the Meath Hospital and the representative of the Royal College of Surgeons in Ireland, in the General Medical Council.

Prof. Alphonse L. P. Pyramus de Candolle, the eminent botanist, is dead. He was born at Paris in 1806, and for many years he was director of the Botanic Garden at Geneva, at which post he succeeded his distinguished father. He was a lecturer in the Academy at Geneva, and a member of the various learned societies in Europe, including the Royal Society of London.

Edwin T. Doubleday, M D., who died in New York last Sunday, at the age of thirty-three, was a native of Boston and a graduate of Harvard College and of the Bellevue Hospital Medical College.

BOOKS AND PAMPHLETS RECEIVED.

Cholera. By E. R. Axtell, M.D., Denver, Col. Reprint. 1893.

Malarial Fever in a New-born Infant. By Floyd M. Crandall, M.D. Reprint. 1893.

Fifteenth Annual Report of the Connecticut State Board of Health, ending June 30, 1892.

Station List of Officers of the Medical Department, U. S. Army, April 1, 1893. Washington: Government Printing Office.

The Sympathetic Nerve and Abdominal Brain in Gynecology; Its Reflexes and Its Rhythm. By F. Byron Robinson, B.S., M.D., Chicago, Ill. Reprint. 1892.

Diseases of the Eye, A Practical Treatise for Students of Ophthalmology. By George A. Berry, M.B., F.R.C.S., Ophthalmic Surgeon, Edinburgh Royal Infirmary, etc. Second edition. Philadelphia: Lea Brothers & Co. 1893.

Diet for the Sick. By Miss E. Hibbard, Principal of Nurses Training School, Grace Hospital, and Mrs. Emma Grant, Matron of Michigan College of Medicine Hospital, Detroit. Detroit: The Illustrated Medical Journal Co. 1893.

Vertebral Surgery, with Reports of Three Cases, and a New Method of Operating in the Dorsal Region. Skin-Grafting upon the Cranium. Brain Surgery; Injury Received Five Years Ago Followed Three Years Later by Convulsions and Paralysis; Blood-clot Found Under the Dura Mater and Removed; Patient Recovered. By F. C. Schaefer, M.D., Chicago. Reprints. 1891, 1893.

Lecture.

LECTURES ON SURGERY.

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

VI.

INJURIES TO BLOOD-VESSELS.

THE word "hæmorrhage" is one which conveys to the popular mind always a great loss of blood. We use it to mean almost any loss of blood; and we are so accustomed to seeing moderate quantities lost that we become habituated to it. The quantity which is lost is always exaggerated in the popular mind. The color and the diffusibility of this red fluid always make a great display, and the loss appears often to be much larger than it is. The public have no fear of bleedings when they come from certain places, and they have great fear of them when they come from other parts; whereas, probably, in a given state of the constitution, it is equally unfavorable wherever the blood comes from. The public are not afraid of a nose-bleed, but they are afraid perhaps of a little blood coughed up from the bronchi, or passed from the urethra.

It seems to make a great difference whether the system has become habituated to a certain loss of blood, and also, whether it occurs slowly or rapidly. If it occurs slowly and repeatedly, the current of blood in the body, in the vessels, becomes filled by the absorption of serum. The tension is kept up. The heart is able to keep up its action; and the patient will live quite a long time with gradually repeated small losses of blood, involving the destruction, or the loss, of a great many red corpuscles. On the other hand, the sudden gush of a number of ounces, in a constitution which has previously had no training in this regard whatever, is very severe. We know, however, that in the female sex, once a month, there is an habitual hæmorrhage, which is often considerable in amount; which is preceded by local congestion; followed usually by feelings of relief after it has occurred; and which not only does not injure the system of the female, but apparently does it good, and is even consistent with health while lactation is going on; so that the person may even be nursing and losing nutriment from the blood in that way, still also have her menstrual flow, and yet not be disastrously affected by this double loss.

Nature has three ways of arresting the bleeding from the wounded vessel, in an artery, for instance, where the bleeding is most rapid: first, the shrinking of the vessel; next, the coagulation of the blood; and, third, the faintness induced, and the diminished power of the heart's action in driving the blood through the vessels.

The shrinking of the vessel, in itself, is quite sufficient, in small arteries, to stop hæmorrhage; and we are all familiar with the fact, for instance, in the wound or freshly-cut surface in an operation, that, if it is exposed to the air, or suddenly treated with the application of ice-water or very hot-water, an immediate shrinking of the vessel takes place sufficient to prevent entirely the leaking. In proof of this, also, is the well-known fact that bleedings which stop at such a moment, may recur an hour or two later from concealed, unsecured, undiscoverable vessels, when the patient has got warm, when reaction has come on, when the circulation is restored, and when the vessels again resume their natural strength; so that this conservative effort of nature is the first which takes place on the section of a vessel, and its being exposed to the air or other agencies, as heat or cold. And the changes are very marked. The vessels have great power to shrink, and they retract into their sheaths; they diminish in calibre, and they check at once the hæmorrhage.

Next comes coagulation, which always takes place in healthy blood in an open wound; and in the shrinking vessel it takes time for the coagulum to form. It is a familiar fact, no doubt from observation, that on looking over the cut surface during an operation after the bleeding has been checked, and the wound is nearly ready to be done up, that the surface is dotted here and there with minute points, which sometimes project out into the air, and sometimes are covered over with slight bits of muscular tissue: those are clots, coagula formed in the mouths of vessels, which lie there, and seal up the vessel from further bleeding.

Next to these, faintness is a very important factor in checking hæmorrhage, and undoubtedly saves more lives in accidents, where sudden bleeding occurs, than any other agency. The patient is severely cut, bleeds freely, staggers and faints, falls down; perhaps the heart almost ceases; while during that time the blood-current being so extremely slowed and feeble, coagulation readily occurs even in the mouths of large vessels; and it is not infrequent that hæmorrhage is thus stopped, and the patient's life perhaps saved without interference from any person. This, I think, is especially true of those hæmorrhages which take place sometimes quite copiously from the rupture of a varicose vein in a varicose ulcer. The vein ruptures, blood is poured out with great freedom. It runs out in a steady stream until the patient faints. The action of the heart being diminished, the bleeding becomes checked first through the arteries, then through the capillaries, finally through the vein itself. Coagulation readily takes place, and the vein is stopped; and the subsequent recurrence of the circulation is not sufficient to break away the clot: so the majority of cases of ruptured varicose veins are not fatal. The rule is that the patient is taken perhaps in the night, or in the street and falls down, and is found with a large clot lying about the wound; but death rarely ensues.

Shrinking of the vessels, coagulation of the blood and the faintness that ensues from the injury.

Now, also, it has long been noticed that many sorts of wounds which twist the parts, which twist the muscles and twist the vessels and lacerate and bruise, always check the hæmorrhage. A lacerated and bruised wound scarcely bleeds at all. There is rarely any bleeding at all from a wound that has pulpified and torn and wrenched the tissues.

A man was brought into the hospital on Sunday night having been run over by a railroad-train. The leg was crushed up to the middle of the calf in five or six different sections, so that it hung in tatters, three of four wheels apparently having gone over it at different points as the train went on. The parts were thoroughly crushed and mangled. He laid on the track somewhere, afterwards crawled to a neighboring house where he got assistance. The leg was tied up in a useless way, as regards checking hæmorrhage. In that

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These are stenographic lectures, printed from the stenographer's reports. [illegible] They [illegible] part of the regular course.

condition he was brought some three or four miles to the hospital; and he did not bleed, barely stained his clothing. All the vessels were cut off; and this was perhaps as good an illustration as you can see of the fact that torn and twisted vessels do not bleed.

To arrest bleeding, then, we have to do what? Follow solely the dictates of nature. What are these? To encourage shrinking of the vessels; to put the limb in a position to diminish the force of the heart; twist the vessels in imitation of nature, if we do not wish to tie them; and to encourage the formation of a coagulum, and leave it a little while undisturbed. We have in position, in pressure, in styptics, a means of stopping hæmorrhage. We have the application of cold, which causes the vessels to shrink and collapse; the application of heat, which also causes the vessels to collapse.

Now a good deal of distinction is drawn with some justice between hæmorrhage from the artery and hæmorrhage from the vein. They are different, and yet there are circumstances where they appear exactly alike. In the typical case, of course, the blood jets from the artery with every pulsation of the heart. It should be of a bright cranberry color. It is thin, liquid, homogeneous, and thrown with a good deal of force. On the other hand, the blood from the vein, which has not been aerated in the lungs, is darker in color, more approaching a maroon, dark red, which flows steadily and slowly with an even current. It has no pulsation. In the typical case, in the open wound, these distinctions might be quite marked; but there are a good many instances which render it impossible to judge whether a given hæmorrhage is coming from the artery or from the vein. An artery may pump against the sides of a deep cut and then well up, and in that way its jet may be entirely unrecognized and not appear when the blood oozes out from the wound. It may be wholly changed in color from the partial asphyxiation of the patient while receiving an anæsthetic. This is especially true and noticeable in cases of operation where anæsthesia is prolonged beyond the first half-hour, and unless the anæsthesia is used with care. One of the signs of want of sufficient oxygen in the blood is the fact that the arteries are running blood as dark as the veins; and this should at once attract the surgeon's attention to the fact that the patient is not receiving oxygen enough with the vapor he is breathing. Partial asphyxia from long or injudicious anæsthesia, then, may make arterial blood as dark as venous blood; and arterial blood may well up from a great depth without any impulse.

The distinction between the two hæmorrhages is probably of no great importance unless it involves some large vessel, and there is a question of some anatomical peculiarity by which we should be guided to secure a hæmorrhage; but in arteries or veins of the third calibre, the size of the arteries of the palmar or plantar arch, it is not of very much consequence whether hæmorrhage comes from the artery or the vein. It has got to be secured in any event; and that securing is now done by the ligature mostly; and it is applied now, as well to veins as to arteries.

In old times, far back, the means of arresting hæmorrhage were by fire, by heat, destruction of the surface, forming a coagulation of albumen, coagulating blood and albumen and the burnt tissues together, and sealing the vessels up in that way. You are no doubt familiar with the occasional old pictures in which after amputation the iron heated to white heat was applied, or there was poured over the surface of an amputation boiling oil, which scalded the end of the stump, and in that way checked the hæmorrhage.

Although it is asserted, probably with some truth, that the use of other means, such as the ligature, was known to the nations of antiquity, yet, if it was known, it ceased to be known during the dark period of the Middle Ages; and it was not until the year 1536, I think, that, if previously known, it was revived, or, if not previously known, it was discovered and used by Ambroise Paré on some of the battle-fields of the earlier kings of France; and it appears to have been brought into notice about the time of the introduction of gunpowder; for in a historical picture in the French Academy of Medicine, we see a battle-field in the Middle Ages, with tents, and knights in armor, and spears and bows and arrows, and at one side a clumsy cannon being fired, and in the foreground Ambroise Paré surrounded by various mediæval characters, applying the ligature; about this time this event, which marked a great period in surgery, occurred, and Paré proved that one could dispense with oil and with fire in checking hæmorrhage, and instead of mutilating, so to speak, the whole surface of a wound, could tie up the vessels singly in different parts of it, and thereby promote very much the healing, and also check the hæmorrhage more certainly and more rapidly.

Like all new discoveries, if it was new, or like all new revivals, if it was a revival, it usually happens that these are very slowly received. It is said by the old English and French writers that a century ensued before everybody would adopt the new method, and surgeons went on with the old practices many years; but the new method slowly won its way until it became a universal method, and is the universal method of arresting hæmorrhage at this time, though it has been modified to a certain degree. When Ambroise Paré tied an artery, he seized it with a curved hook and drew it out. They had no forceps as we have today. He tied it with a ligature, probably of silk or strong thread, and left the ends hanging out of the wound. These afterwards cut through the vessel and came away. This was the method until a few years ago. The instructions were that in case of the large vessels you should draw the knot down sharply and closely until you felt the middle, brittle coat give way, and secure the knot by another turn, and leave the ends hanging out of the wound. The process which took place was this: the walls of the inner coat of the artery were brought in contact, the middle coat was broken down and the sides forced into contact, and the tough outer coat was folded in. We had, therefore, a closed pouch, into which the heart was pumping blood. Now we know that when arterial blood is pumped against an obstacle it coagulates; its fibrin is deposited; a clot is built up that gradually extends, in a tapering form, some little distance up the artery; and that occurrence having once taken place, the hæmorrhage is effectually arrested; and if this condition of things could be left undisturbed, there is nothing more to be done. Unfortunately, under the former use of the ligature it was always expected, always the rule, that this ligature had got to come away; could not be left there; it always provoked suppuration and ulceration; and could only come away by eating through all the coats of the vessel, leaving it closed as a fibrous cord, and in that way preventing the hæmorrhage. The coming away of the ligature necessarily was a very uncertain event; differed in time as to the size of the vessel. In the small vessel it would come away in five or six days; in the larger vessel, ten days perhaps; in a vessel the size of the femoral or carotid, seventeen to twenty-one days. It frequently hung on three weeks. One was cautioned, then, to tie the ligatures in such a way that the size of the vessel could be indicated by the size of the thread and knots. A large knot indicated a large vessel. A small thread indicated a vessel of moderate size. Why were these distinctions observed? Because you must not touch the larger ligatures, or attempt to separate and draw them out, until sufficient time had elapsed to make it safe to do so; hence it was necessary to indicate the size of the vessel by the size of the thread or knot. One pulled the little cords each day for five or six days to get them loose, but did not touch the larger ones, until a longer time had elapsed.

This is the history of the application of the ligature by Ambroise Paré. This was the mode in which hæmorrhage was arrested; and these the uncertainties and the impediments to union by first intention which, as you must see, was almost impossible of occurrence with a series of suppurating strings lying at various points in the wound, liable to separate prematurely, and thus liable to give rise to secondary hæmorrhage.

The application of the ligature was an immense advance over the old method, which forced the whole surface to heal by granulation. It reduced the thing to this, that you could have partial union by first intention, and have two sinuses through which you gradually draw out your ligatures.

In another sense these ligatures served a useful purpose; and this was in securing drainage, which we seek to secure now by placing in a drainage-tube of rubber or glass. The capillary suction of these strings led all the fluids away from the stump, and drained as perfectly in those old days as we drain now; but beyond that they led to suppuration.

This great improvement of Ambroise Paré finally came into use say about the year 1600, and remained in constant use without modification until about thirty or forty years ago. I do not know the exact date. At that time people began to inquire whether there was not some better way in which all this could be secured without provoking ulceration and suppuration in the wound.

Two methods were proposed. One has fallen into disuse; one is still used. The one that has fallen into disuse was introduced by Simpson in Edinburgh, and called acupressure. This consisted in compressing the bleeding vessels on a steel needle (polished steel, nickel-plated or silver) having an unirritating, smooth surface. This was buried in the tissues, folded over on the vessels, turned and secured very much as you put a pin in the coat to secure the stems of flowers in the buttonhole, the artery being the stem of the flower. This pin was a temporary expedient, and was intended to stay in forty-eight to seventy-two hours. Then it was unpinned and withdrawn; the tissues fell back into place. Forty-eight to seventy-two hours had been sufficient to compress the artery and form a clot, but not to provoke ulceration; and we had healing by first intention, and no hæmorrhage.

This was a great advance; and the method of Simpson for a few years had a great many advocates. It was of very easy application in the stump of an amputation, where you could see all the surface, and pass the pins here and there. It was, however, of rather difficult application in the continuity of an artery; though I have used it, and seen it successfully used, in vessels so large as the femoral. Instead of tying the vessel, expose it and pin over it, through the muscles, and leave it forty-eight to seventy-two hours; then withdraw the needle, and have perfect occlusion of the vessel.

On account of the painfulness and awkwardness of this method, making as it were a pin-cushion of a man's amputated thigh, another method was sought and is still used to a large extent; and that was, simply in imitation of nature's mode, by twisting the arteries instead of tying them — torsion. That is still used in some places and by some surgeons. In some of the London hospitals, Guy's, I think, it is used almost exclusively instead of the ligature. Special forceps have been devised for the purpose of doing it successfully. These forceps have blunt ends. You see them illustrated in all the modern books. In the case of small vessels it is only necessary to seize and twist them around until you are conscious that you have broken the walls of the vessel. If it spurts again, you twist once more. This method is very successful. Hæmorrhage rarely occurs; and it is capable of a very wide application.

Still the ligature was too good a thing to be lost sight of. It was safe. After you had tied up a vessel firmly with a good square knot, you felt that you had done a safe thing for the patient. Turning might untwist; something might occur when nobody was about, and serious results ensue; so that we could not give up the ligature, and attention was next directed to modifying it; and it has been modified so that it is more successful than all the other methods put together, and does not interfere with first intention. That modification is in making it aseptic, so that there is no need of its ulcerating through the vessel and no need of its being withdrawn. The various forms of catgut perhaps have met this indication better than any other, inasmuch as they tie the vessel, and remain in position, and are absorbed themselves without ever showing themselves in any way. The only difficulty about these seems to be this, that in the larger kinds of catgut it is difficult to get perfect asepticism in the centre of the strand. The surface becomes aseptic but the centre is liable to be in an untreated state, in a rough organic condition, in which it will decay; and the other objection, which I think is more serious, is that, in the first place, it is a great deal harder to tie a good knot — you have to tie three knots to be sure — and then it absorbs so quickly, that it is not to be always strictly relied on with regard to the larger vessels. It may give way before firm union of the vessel has really occurred. Other materials, as silk, made aseptic by boiling, or by various treatments, is perhaps preferable, and is now largely used. Perfectly aseptic silk is never heard from again. It probably remains encircling the vessel, or becomes slowly absorbed or encysted, and does not make any trouble. Look at the great advantage these ligatures give us in securing first intention, in avoiding suppuration, in diminishing enormously the chance of what we call secondary hæmorrhage.

What is secondary hæmorrhage? Hæmorrhage which comes on during the period of ulceration and suppuration, — not at the time of the wound, not at the time of reaction a few hours after the wound, when bleeding frequently occurs, but ten to fourteen days after the infliction of the wound, when the suppurative process has fairly set in. As we said the other day, when a ball enters a limb and passes across and bruises the coats of an artery, it is not until this burnt and torn tract has begun to suppurate and the walls of the vessel give way, from the tenth to the fourteenth day, that secondary hæmorrhage occurs. Just so, also, in applying the ligature to a large vessel. It is not until it has ulcerated through and has cut its way off and is coming out, that secondary hæmorrhage occurs there; and it occurs from want of reparative power in the vessel, imperfection in the clot, in its organization, reopening of the vessel at the point where the ligature separates. Secondary hæmorrhage is impossible where an aseptic ligature is put on the vessel which stays without provoking suppuration; which never comes away; never relaxes its grip on the vessel; and around which the reparative material forms just as well as it would if no foreign body were there. It ceases to be a foreign body; becomes incorporated into the tissues, if it is catgut; becomes encysted and slightly changed or absorbed, if it is aseptic silk; and once tied, that is the end of any chance of hæmorrhage, provided the asepticism is perfect and no suppuration occurs. One can see that now, by the aid of this expedient, the modern ligature is far beyond any other possible method of securing hæmorrhages. It is handier than the steel needle; safer than torsion, for the vessels cannot give way; does not provoke suppuration; does not interfere with healing. Consider the great safety of this in certain surgical operations which have to be done in the continuity of a vessel. You can see the importance of it in the large wound made by amputating the breast. You can see if you tie fifteen or twenty of these little threads, and they remain in the breast, if it can be closed up and heal down solid, there is no chance of hæmorrhage, no chance of suppuration, and the advantage is evident. But great as it is here, it is not so great as it is where we have to tie in the continuity of a vessel. Take, for instance, aneurism of the carotid. Here we have to make a wound to reach the vessel; cut down and open the sheath of the vessel, detach it to a slight degree from its minute attachments and the vasa vasorum and the connective-tissue by which it is nourished; pass around the needle; get the thread around; tie it down, and arrest the current by a firm knot; and in a vessel so large as the carotid considerable force has to be used. If this ligature can be made aseptic, and is never to come away, we have merely to close the wound: the carotid is forever occluded so that no pulsation can take place through it, and there can be no danger from secondary hæmorrhage in the separation of the ligature. It is safe to say that by the use of the aseptic ligature the operation of tying arteries in their continuity, to control growths, arrest distant hæmorrhages, control aneurisms — everything of that kind — has been more benefited than any other operation in surgery. One of the great dreads in former times, in the Hunterian treatment of aneurism, was what was going to take place at the seat of the ligature. You had to take not only the chance of suppuration in the sac of the aneurism, not only the chances of gangrene in the limb, if collateral circulation was not established; but was the wound going to do well? Would the ligature come off without giving rise to suppuration and fatal hæmorrhage? Hence it was so much insisted on in former times that if an aneurism of the lower limb was to be treated by tying the artery, no previous treatment whatever should be employed in the vicinity of the spot — Scarpa's triangle — because if pressure had been used there, it was feared the tissues would be thrown into such condition that the ligature might separate prematurely from the artery, the wound slough and suppurate and secondary hæmorrhage of fatal character occur.

So, now, nature stops bleeding by shrinking the vessels, and we stop it on surfaces where the vessels are capillary and numerous and small, by irrigating with hot fluids or irrigating with cold, causing the vessels to shrink up before the flaps are finally adjusted. Nature coagulates the blood in the mouth of the vessel. We imitate that by tying the vessel and causing a clot to form inside, which would not otherwise occur. Nature also stops hæmorrhage by faintness and by position of the limb; and these we imitate, to a certain degree, by perfect rest in the horizontal position after a severe operation, careful regulation of the diet, avoiding anything that will increase the pulsation of the heart, and, perhaps, by elevating the wounded surface itself.

Acupressure and torsion, probably, will gradually become things of the past, so long as the aseptic ligature is as perfect as it is at the present day.

What are you going to do for secondary hæmorrhage? It occurs sometimes. The treatment has to be entirely different from that of primary hæmorrhage. You have got a ragged, sloughing, suppurating, foul wound. You are trying to dress it and make it heal, and suddenly there occurs an oozing from the bottom, a continuous leaking of the blood. The ligature is of no use. It cannot hold upon the vessels. You sponge out this foul cavity, try to clean it out and seize the vessels with forceps and attempt to tie, and the strings cut through and come off as fast as you can put them on. No tissue will hold. You are reduced then, with regard to the wound itself, to adopt pressure and styptics as the sole method of arresting it in the wound; and sometimes these are sufficient. Yet styptics applied in the fresh wound, which has any chance of healing by first intention, are immensely disastrous. They are the last thing that should be used. They irritate the surface, provoke secretions, leave behind them hardened and uncomfortable little coagula, which afterwards have to be thrown off by the suppurative processes. In the hæmorrhage from sloughing and suppurating wounds the effect of styptics upon the surface is of no consequence; the mischief is done; repair has got to be by granulations. A large part of the decayed tissue has got to come away, and a styptic is frequently good to use. Styptics and pressure are the modes of controlling secondary hæmorrhage in the wound itself. Pressure is perhaps the more important of the two.

Of the styptics the least irritating agent that you can use is the ferric alum, which coagulates the blood very quickly, but forms with the clot a sort of sand, which is not very irritating to the tissues. It seems to be quite as good a styptic as the persulphate or perchloride of iron, but the persulphate or perchloride of iron form with the coagula hard, crystalline, irregular clots, which are extremely irritating. The one forms a smooth sort of tissue, and the other hard, brittle, angular masses; so that ferric alum as a styptic is greatly superior in the wound for secondary hæmorrhage: then use pressure and position and rest.

Sometimes the bleeding keeps on. Then it is useless to do anything in the wound; but you have got to tie the upper, supplying vessel, a few inches away, where you can get at it in healthy tissue, and where you can in that way secure the bleeding — a disastrous proceeding, of course; a proceeding especially disastrous in a limb, because, if you have to tie a considerable trunk above a sloughing cavity, you have thereby not only stopped the hæmorrhage, but cut off its nutrition, and perhaps induced gangrene.

In regard to securing primary hæmorrhage, the cardinal rule is that you should attack it and secure the vessels where the bleeding occurs; dilate and lay open the wound, and secure the bleeding points wherever they are. Another cardinal rule, first, I believe, brought to notice by one of those sound writers on gunshot wounds, Mr. Guthrie, was this, that if you are dealing with a hæmorrhage from a large vessel, you must tie both ends in the wound, or near the wound, in order to be secured against recurrence of hæmorrhage. For instance, a large artery is wounded. You tie one end and secure the other end, if it can be done. Why? Because the end that you have tied obstructs just so far the circulation in the limb. That circulation has got to be kept up, and is kept up by collateral circulation, or anastomosis of numerous small vessels, which do not appear to the eye or sight, but permeate about, in and out, among the fascia and muscles, and gradually form a system which supplies the place of the main trunk. This collateral circulation restores the circulation of the blood in the lower part of the limb in a few days. Then what? Then it necessarily communicates with the lower part of the vessel which you did not secure; and in a few days a new hæmorrhage will take place from the lower end, which ought to have been tied at first.

There used to be a great prejudice against tying veins. I think that is almost entirely done away with. It is recognized now that the chance of suppurative phlebitis, or septic phlebitis, from tying veins is not much greater than it is from tying arteries; and that what does take place when a vein is tied is an adhesive phlebitis, which forms a clot, and acts as the artery does; and that usually is the end, not only of the hæmorrhage, but of the process which heals it; a process which bears so close a relation to the inflammatory processes, that it is impossible sometimes to draw the dividing line between repair and inflammation. The adhesive inflammation often does not go any further, just as the adhesive inflammation which seals an artery does not go any further; so that it is relatively about as safe to tie a vein as an artery. We would do better usually if the vein is of considerable size to cut it off, and tie thoroughly at the two ends. In secondary hæmorrhage, then, put styptics in the wound, pack, keep it still and lift the limb. If that does not succeed, tie the vessel higher up. In primary hæmorrhage never attack the vessel anywhere except in the wound itself. Seek for the bleeding points. If it is a vessel of considerable size, also seek for and tie its other end; and tie veins as well as arteries.

It is a very curious fact that the arteries were so named in old times because they were supposed to carry air, and that it is now well-known, not only that the artery does not carry air, but that there is no danger of air getting into an artery; but, on the other hand, air may accidentally get into a vein and cause fatal results. The veins were thought to be the blood carriers; arteries carried air. It was thought so on account of the elasticity of the arteries. The expiring act of the heart in dying drove the remaining few drops of blood out of the artery, and when this vessel was opened after death it was found to be empty, and was supposed to have carried air instead of blood; whereas the vein after death was found loaded with blood, and this was supposed to be the circulation of the blood through the veins, and not through the arteries. Now the elasticity of the arteries — the current is forced through with such force — rarely leads to the admission of air into them when they are cut. On the other hand, the entrance of air into large veins is well recognized as being a serious danger in surgery. The vein is thin-walled, gapes easily, is attached in many places to the longitudinal layers of fascia. If these are drawn apart in doing an operation, and the vein cut, the cut edge of it gapes open; and unless the operation happens to be at a point where there are numerous valves, there is nothing to obstruct the entrance of air into the vein; the movements of breathing sucking the blood back to the heart, and also sucking the air down into the heart with fatal result. It is notorious that wounds of the large veins of the neck and axilla are those most liable to be fatal on account of their nearness to the heart, and the short journey that the air-bubble has to take in order to reach the right side of the heart from the seat of the wound. Most of these troubles have occurred in operations about the neck where surgeons and assistants were so busy perhaps in extracting a tumor, or something of that kind, that they were not noticing the vein underneath; and the vein being thoroughly on the stretch by pulling up the tumor, and then being nicked, air rushed in. It is not, I think, adequately explained what is the cause of death in these cases. One or two small bubbles of air may go in with an audible sound, produce a temporary disturbance, and the patient recover. I have, and every one else who is about hospitals considerably, has seen that occur many times; but if a considerable quantity of air gets in, a fatal syncope is produced. I once witnessed a death from that cause. Sighing and irregular respiration, rapid cyanosis of the face, tumultuous and irregular beating of the heart, are developed in a very short time, — one to one and a half minutes. Now this air goes to the right side of the heart. It either acts by distending the right chamber and rendering the valves incapable of working; or becomes churned up into froth, which interferes with the action of the valves. Those are the two theories by which it is sought to explain the mode by which it kills. A small amount will not kill; but will produce symptoms. A considerable amount will bring on fatal syncope and death in a very short time.

What can be done to prevent the accident? For indeed not much can be done to remedy it after it has occurred, as fatal results come on so rapidly. What can be done to prevent it? Of course, we are cautious about wounding large veins. Pour the wound full of fluid so that air shall be excluded. Better still, try to thumb the vein down by the collar-bone, near the sterno-mastoid, where the junction of the veins occurs. It is a caution sometimes observed by those who are very careful when operating about the neck, to request an assistant to be ready to make pressure at any time, and to consider that a part of his duties during the operation; that is, where there seems to be a probability of exposing so large a vessel as the internal jugular.

Electricity, stimulants, artificial respiration are the measures which would suggest themselves to try to keep up the heart's action and the respiration until the heart could become accustomed to this strange enemy; but if air has gone in, in a considerable quantity, death is usually the result.

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Original Articles.

OBSTETRIC PARALYSIS, WITH REFERENCE ESPECIALLY TO THE PATHOLOGY AND ETIOLOGY.[1]

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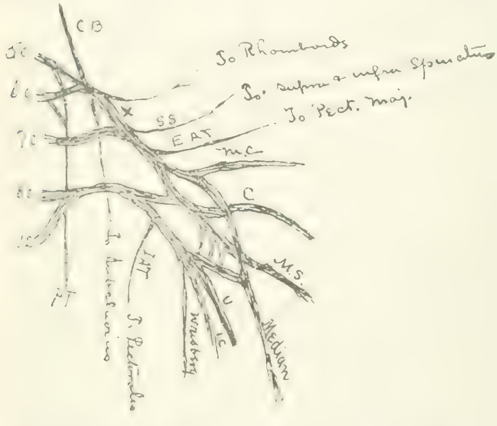
THAT the occurrence of a certain form of paralysis, involving a number of the shoulder and upper-arm muscles, and occasionally extending to some of the muscles of the forearm, as a result of injury during delivery, is of sufficiently frequent occurrence to warrant more attention than has been given by authors thus far, is proven by the frequency with which they have appeared at the Out-Patient Clinic at the Massachusetts General Hospital for treatment during the last few years.



Fifteen of these cases have come under the observation of the writer within the last two years; and a physical examination has revealed certain conditions common to all, with one exception. The affected arm is held by the side in a position of internal rotation, the elbow pointing outward; the fingers are usually semi-flexed; this, however, is not constant.

A careful examination has shown that in every case there has been a paralysis of the deltoid, supra- and infra-spinatus, teres-minor, biceps and brachialis anticus, together with the supinators. In some of the severe cases, there has also been paralysis of some of the extensors of the wrist, or more especially the fingers.

In looking for the location of the lesion we at once think of Erb's paralysis of precisely the same distribution. "Erb found that there is one spot between the scaleni corresponding to the sixth cervical nerve, at which electrical stimulation puts all these muscles in action."[2] Hence, he referred the paralysis to disease of the sixth nerve.

Here, perhaps, it will be well to glance at the derivation of the brachial plexus, from the various nerve-roots. It is made up of the lower four cervical nerves and the first dorsal. It is to be remembered that the fifth cervical receives a branch from the fourth before it unites with the sixth to form the first or highest trunk of the plexus.

Experiments of Ferrier and others, together with anatomical investigations in cases where this type of paralysis has been occasioned by injury to nerves or by pressure from new growths, have definitely proven that the nerve-supply of the muscles most frequently affected by the condition under discussion is derived from the first trunk of the brachial plexus, which is made up by the union of the fifth and sixth cervical roots together with the communicating branch from the fourth.

A reference to the diagram would show that if the fifth and sixth cervical roots were injured at or before their exit from the spinal column, we must necessarily have a paralysis of the serratus magnus, supplied by the posterior thoracic nerve, which arises by two heads from the fifth and sixth cervical roots respectively. This has not occurred in any of the cases coming under my observation, nor in any reported by others, so far as I can learn.

Again, if these roots were injured before their union to form the uppermost trunk of the plexus, paralysis would ensue in the branch to the rhomboids, which does not occur, at least with sufficient frequency to have been noted. The next branch to leave this trunk is the supra-scapular, supplying the supra- and infra-spinatus muscles. This is constantly affected. Hence, since there is neither anatomical nor physiological objection, it is safe to locate the lesion in this trunk somewhere between the branch to the rhomboids and the supra-scapular.

Having located the lesion, we come naturally to the question, What is the manner of production?

Various writers have assigned various causes, the more common of which are:

(1) Pressure in neck from blade of forceps, finger or hook.

(2) Overextension of arm.

(3) Pressure in axilla in extracting.

The first cause, namely, pressure in the neck, would seem the most probable, considering the location of the lesion; and, indeed, one case has been reported where this condition would seem to have obtained; but a careful consideration of the surroundings would lead one to conclude that in order to press deeply and hard enough to produce this condition some external evidences of trauma would be produced, and this was the fact in the case reported.

Furthermore, several of the writer's cases were normal labors, the child being expelled head foremost without the use of forceps, and in one case without the physician's presence. Hence, we must discard this as a probable, while admitting it as a possible, cause, in very exceptional cases.

The second cause, namely, overextension of the arm, may be quickly disposed of, from the fact that this condition always produces paralysis of the muscles of the forearm and hand primarily, in other words, the ultimate branches of the plexus (that is, the median, musculo-spiral and ulnar nerves), and not the trunks, are the parts injured.

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[1] Read before the Boston Society for Medical Observation, February [illegible], [illegible].

[2] Gowers: Diseases of the Nervous System, vol. i, p. 91, Philadelphia, 1892.

The third assigned cause may be as easily disposed of. Pressure in the axilla must produce a condition allied to, if not identical with, the well-known crutch paralysis, and here the nerve affected more than all others is the musculo-spiral.

Another cause which suggested itself to the writer, and of which little or nothing has been said by the various authorities, but which, nevertheless, is not inconsistent with the conditions surrounding any of the cases thus far seen by him or reported by others, is the stretching of the uppermost trunk of the plexus, either by traction on the head, by the hands or forceps of the obstetrician, by traction on the shoulders in extracting the aftercoming head, or by a rapid expulsion of the head from contraction of the uterus when a shoulder has met with some obstruction, as, for instance, the brim of the pelvis, thus widely separating the head from the shoulders, and stretching the nerve-trunks. It is to be borne in mind, that this result can more easily be brought about in the flabby condition of the new-born child, with the comparatively inelastic nerve-trunks.

The degree and extent of paralysis would depend upon the amount of force used in the stretching.

This view seems to be strengthened by two cases shown at the meeting of the Medical Society of London, on February 24, 1890. I will quote the reports of these cases as they appeared in Braithwaite (vol. ci, p. 249):

"Dr. Sidney Phillips showed a case of Erb's paralysis in a man aged thirty-one. The patient had been in good health till January 5, 1890, when, after drinking too much, he fell down stairs and struck the point of his shoulder; afterwards he found himself unable to use it. On examination the deltoid, pectoralis-major (slightly), triceps, brachialis anticus and supinator longus were found affected. They reacted only slightly to faradism, the deltoid not at all. The muscles were recovering slowly under the use of galvanism."

Dr. Beevor showed a somewhat similar case. "A man, aged thirty-seven, on November 21st was pitched off a cab, and fell on the left shoulder and side of head, stretching the neck. He gradually lost the use of the arm. At first there was some anæsthesia about the shoulder-joint. There was at present complete paralysis of the biceps, coraco-brachialis, brachialis-anticus, deltoid, supra- and infra-spinatus. There was no reaction to the strong faradic current, and the muscles gave the reaction of degeneration."

It will be seen at once that both these cases present symptoms almost precisely like those in the case under consideration. The manner of production of the paralysis in the first case is closely allied to that in the cases that are a result of a rapid spontaneous delivery, where the shoulder, presumably, meets some obstruction and is held back while the head advances rapidly.

The second case, on the other hand, closely resembles, in its manner of production, the cases where strong traction is applied to the head, or shoulders, and conversely the head or shoulders are held back by some obstacle.

The question of impairment of sensation in these cases is an important one. Indeed, B[illegible] [illegible] ex-amination of nine cases, failed to discover loss of sensation in any, and concludes that the lesion must be in the anterior horns of the spinal cord, or, in other words, that we had to do with a poliomyelitis, and suggested by the title of his paper the name, "Spinal Birth-Palsies."

Now, on analyzing his cases, it appears that in only five was he able to test the sensation, and these [illegible] in age from three months to two years in four cases, the other being five years old. It will certainly be allowed that to test the sensation, accurately, in a child of two years or younger, is very difficult, if not impossible; and it is a well-known fact that sensation returns excepting in very limited areas, even after section of sensitive nerves, such as the median, or ulnar.

Thorburn,[4] after describing the areas supplied with sensation by the various nerve-roots of the brachial plexus, says: "The exact lateral extent of the bands of skin supplied by each root can hardly be determined, and is, indeed, probably not a fixed quantity; the boundaries are usually ill-defined, and there can be little doubt that vicarious conduction of sensory impressions readily arises, as in other varieties of anæsthesia."

Furthermore, in the second case quoted above from Braithwaite, it was especially stated that "at first there was some anæsthesia about the shoulder-joint," seeming to imply that even this was a temporary condition.

If we need further proof that the paralysis is due to injury of a nerve and not to inflammation of the spinal centres, it is to be found in the clinical history of many of these cases. It is a well-known fact that the paralysis due to a poliomyelitis *rarely*, or probably ***never***, entirely disappears, and that if improvement takes place, it is usually within the first few months from its onset. With the class of cases under discussion, the opposite is the rule.

The diagnosis of this condition is comparatively easy. The paralysis is rarely noticed before the second or third day, when it is noticed that the child does not move the arm, also that it is in a position of internal rotation, the elbow pointing outwards, the forearm hanging listlessly, and if the case is severe, the fingers semi-flexed. After a few days the reaction of degeneration is well marked in the affected muscles; and undoubtedly, if we were able to test carefully, we should find some diminution, not necessarily loss, of sensation over the area supplied by the fifth and sixth cervical roots, namely, the outer aspect of the shoulder and upper-arm and radial side of the forearm as far as the styloid process of the radius or base of thumb.[5]

The prognosis in these cases may be said in a general way to be good, but recovery is frequently exceedingly slow. One patient, now three years and eleven months old, whom I have had under observation since birth, has improved more during the last eighteen months than ever before, and is still apparently gaining. A few cases, on the other hand, recover completely in a few months. That the very great majority of cases get well, or practically so sooner or later, would seem to be indicated by the

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[3] Boston Medical and Surgical Journal, [illegible]

[4] Thorburn: Surgery of Spinal Cord, p. 4.

[5] Gowers: Diseases of the Nervous System, vol. I, p. [illegible]

fact that none of the physicians connected with the nervous department of the Massachusetts General Hospital has ever seen the condition, dating from birth, in an adult patient; and so far as the writer has been able to discover, only one case (Lovett's[6]) has been reported where the paralysis has persisted to adult life.

The treatment in these, as in all cases of injuries of nerves, is important, although simple. It consists in the use of passive movements, massage and electricity. Galvanism over the affected muscle and through the region of the brachial plexus, frequently applied (two or three times weekly) for months, seems to be the best means at our disposal for combating the contractures which take place in the offending muscles, and regenerating the affected nerves.

Lovett's suggestion as to the use of the Velpeau bandage to prevent the relaxation of the ligaments of the shoulder, is undoubtedly a very valuable one.

I have tabulated, as well as possible, the cases reported by Lovett and Burr, together with my own.

Case I by Lovett, and Case IV by Burr, are apparently the same.

LOVETT'S CASES.

No.	Side.	Presentation.	Duration.	Remarks.
1	Right	Head	9½ hours	"Strong traction on the head combined with pressure on the fundus was necessary."
2	Right		. .	"The labor was a particularly easy one."
3	Right	Head		"A difficult labor, forceps were used." Patient now 19 years old, arm not very useful.
4	Left	Head		"Long tedious labor and forceps delivery."
5	Left			"Cross birth, possibly central paralysis."
6				No account of labor or distribution of paralysis.
7	Left	Footling	.	Forceps applied to after-coming head.
8	Right	Head	.	"The labor was not a very hard one, but forceps were used."
9	Left	Head		"Forceps were used."

BURR'S CASES.

No.	Side.	Presentation.	Position.	Duration.	Remarks.
1	Right	Head	.	2 days	Forceps.
2	Right	Head	.	Day and night	Forceps. (Sister of preceding.
3	Right	Brow		3 days	Forceps. Distribution of paralysis different. Extraction of shoulder difficult, strong traction on an arm.
4	Right	Head	. . .	7 hours	Forceps.
5	Right	Head	. .	2 hours	Forceps. "Extraction of shoulders difficult, necessitating additional traction by the head."
6	Right	Head	O.R.P. Gradual change to R. transverse.	20 hours	Forceps. "Extraction of shoulders difficult, accoucheur being obliged to pull on head so forcibly that he was afraid the vertebræ would dislocate."
7	Right	Head	. . .	[illegible] hours	Forceps. "There was some delay in the delivery of the shoulders, and the accoucheur wrapped a towel about the infant's head and pulled."
8	Right		. . . .		Forceps.
9	Right	Head	O.L.A.	9½ hours	"Strong traction on the head combined with pressure on the fundus was necessary.

My own cases are as follows:

No.	Sex.	Age.	Side.	Presentation.	Position.	Time of Labor.	Remarks.
1	M.	2 mos.	Left	Breech	. .	.	Mother etherized.
2	F.	7 wks.	Right	Head	. .	. . . .	Forceps.
3	F.	2 yrs.	Both	Breech	.	Long	Improving.
4	M.	4 mos.	Right	Head	. .	7 hrs.	Forceps. (Died August, 1892.)
5	M.	5 wks.	Left	Head	. .	Long	Forceps.
6	M.	5 wks.	Left	Head	. .	. . .	Forceps.
7	F.	3 mos.	Left	Shoulder	. .	3 or 4 hrs.	Version. Both arms affected first. Right well in 2 mos., left improved rapidly of late. Now 3 yrs. old.
8	M.	4 wks.	Right	Head	. .	. . . .	No operative interference.
9	M.	3 yrs.	Right	Breech	. .	Long Dif.	Much improved of late.
10	M.	1 yr.	Right	Head	. .	Short	Born before arrival of physician.
11	M.	10 wks.	Left	Head	. .	11 hrs.	Forceps.
12	F.	2 dys.	Left	Head	O.R.A	14 hrs.	Forceps. Now 4 yrs. old. Has improved more in last two yrs. than before.
13	M.	3 wks.	Right	Head	. .	9 hrs.	Traction on head in extracting shoulders.
14	M.	6 wks.	Right	Head	. .	. . . .	Forceps.
15	F.	1 mo.	Right	Head	. .	. . . .	No operative interference.
16	M.	2 mos.	Right	Head	O L A	. . . .	Forceps high up. Some improvement of fingers.

I am indebted to Dr. J. J. Putnam for notes in Case 16.

Lovett's Case VI has no history, hence we have statistics in thirty-two cases. Forceps were used in twenty cases, having been applied in one case to the after-coming head. It is therefore apparent that they are not a necessary factor in the production of the condition in question.

There is no direct history of traction by the arm except in Case III reported by Burr; and here we have a different type of paralysis. There are three breech cases. In one, both arms were affected; the others were one right and one left. In the one case where version was performed, we have the history of disturbance in both arms, one of which quickly recovered and the other improving rapidly at the end of three years. In Lovett's Case VII, a footling, the left arm was affected. Here forceps were applied to the after-coming head, an operation which would probably not be performed until traction on the body had been pretty thoroughly tried.

In Lovett's Case VI, the labor was characterized as a "particularly easy one," and in Case X, my own list, the child was born without assistance and before the arrival of the physician. In these cases, it seems to me, that the only explanation one can offer is, that in the rapid advance the shoulder met some resistance, for example, the pubic arch, and the strong contraction of the uterus caused the stretching of the nerve trunk.

It is especially noted, in several of the cases, that there was strong traction by the head, and it is fair to assume that in the breech, footling and version cases there was traction on the body in extracting the after-coming head; hence, may we not conclude that in all, or nearly all the cases of this type, this one necessary factor, namely, stretching the trunk, composed of the fifth and sixth cervical nerves with the communicating branch from the fourth, exists, either produced by traction on the head or shoulders with the forceps or hands, or by pressure from behind when the shoulder has met some obstruction.

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[6] Boston Medical and Surgical Journal, vol. cxxvii, p. 8.

If our conclusion is correct, under ordinary conditions we expect to find the right shoulder affected in cases where the position was O. L. A., and in other cases where the right shoulder met the obstruction; and it is interesting to note in this connection, that in the few cases when the position has been ascertained this rule follows. In the two cases where the position was O. L. A., also in the one case of O. R. P., we find the right shoulder affected; on the other hand, when the position was O. R. A. the left shoulder is the affected one. In the case (X) where the labor was short and delivery spontaneous, the right shoulder was affected. Is it not fair to assume that this was an O. L. A.?

In the breech and other presentations involving the birth of the head last, we might expect to find either or both sides affected, as was found to be the fact above.

While I am well aware that the statistics here presented are too meagre to establish any rules in the matter, may we not formulate the following provisional conclusions?

(1) The upper-arm type of obstetric paralysis is due to a stretching of the upper trunk of the brachial plexus, during process of delivery.

(2) This is brought about by traction on the head or pressure on the breech when the shoulder is retarded, or by traction on the shoulder when the head is retarded.

(3) The prognosis, as a rule, is good, although recovery may be delayed months or years, permanent disability being rare.

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LAPAROTOMY IN TUBERCULAR PERITONITIS.[1]

BY S. J. MIXTER, M.D.

In choosing the above subject for a paper, I have two distinct points in mind: first, to call out opinions as to the relative frequency of cases of true tubercular peritonitis or those of so-called granular peritonitis, and the curability of either or both by operation; and second, to report a single case selected from a number in my practice, but one which seems to illustrate better than any that I found reported, a perfect example of true tubercular peritonitis cured by operation.

On talking with some of the students in my clinics, I have found that there is an impression prevailing among some of them at least, that cases of chronic peritonitis cured by laparotomy are not cases of a true tubercular process; that they are so-called granular peritonitis and the bacillus of tuberculosis is not present. This idea they gathered, and whether or not it has been intended to be conveyed by the lecturer, it is certainly a prevalent one among these men. On looking up reported cases I find no reason to think this a correct view of the matter, and I should rather incline to the belief that most of these cases were true tuberculosis, and that the exceptions were the granular cases, whether recovery followed operation or not. Osler, in his very thorough article on this subject speaks of cases resembling in general appearance and in certain ways, tubercular peritonitis, where the nodules found scattered over the peritoneal surface are not tuberculous, but are either fibrous, syphilitic, lymphomatous, or even carcinomatous in character. Cases are also mentioned where, following operation (the patient having died of some acute disease some time after), the nodules have been found to be undergoing a degenerative process; and it is possible that cases of so-called granular peritonitis may be the results of a previous tubercular process. On this point I have no opinion to offer, but simply make the suggestion that the line of distinction between the two is not at all a sharp one.

In looking up the literature of the subject I am impressed by the fact that a large number of cases is reported where careful microscopical examination of small portions of the peritoneum, removed for that purpose, has been made, and that in almost all such cases, true tuberculosis was found. I say "true tuberculosis" advisedly; and my statement may be questioned by those that only accept the demonstration of the presence of Koch's bacillus as a sure proof of tuberculosis, but to those I say that, though I find many reports of the presence of the bacillus, I find very few indeed where it is stated that it was sought for and not found. This may be negative evidence, but I wish to state after a study of the subject from its surgical and historical side (by the latter, meaning reported cases), that the evidence, negative and positive, points to the presence of a tubercular process even in the majority of the chronic peritoneal inflammation cured by opening the peritoneal cavity. I am told by one good authority in pathological matters, that it is absolutely necessary to prove the presence of bacilli in these cases to show that the process is a tubercular one, and by another authority, also a good one, that any one should be able to distinguished between the tubercular and the non-tubercular process on inspection of the interior of the affected abdomen.

It is to clear up some of these doubtful points that the reader reports a case to-night which may be used as a central point around which to group various theories and conjectures as to the pathological nature of these processes; and also to call attention to certain differences in the surgical treatment, and to the results following laparotomy which have certainly been as brilliant as those following any operation devised by modern surgery, for the relief or cure of a disease formerly considered fatal in most cases. Osler has written so clearly and so well upon the whole subject of peritoneal tuberculosis that there is little need of further work in that direction at present.

It is not intended to refer here to the subject of encysted tubercular peritonitis or to the question of tuberculosis of the tubes in the female as causing a general peritoneal infection. There are, perhaps, cases of this kind where a cure, or disappearance of symptoms, may take place without surgical interference of any kind, but they are certainly far from common. It is also true that a cure may follow one or more aspirations or tappings of the abdomen; but the best treatment is without doubt the opening of the abdominal cavity, separation of adhesions as far as possible, perhaps followed by washing out the belly with warm water, salt solution, or even some antiseptic.

The following is an abstract from the Carney Hospital reports:

Sylvina Q., age thirteen, born in Portugal, entered the Carney Hospital July 10, 1892. Previous history could not be fully obtained as the child's English was limited, and the mother could speak only Portuguese. The father died of unknown cause. Patient always well till the year before, when she had measles; and since then she had not been robust. About a week previous to her entrance to the hospital she began to have pain in the abdomen, paroxysmal in character, and, soon after, swelling of abdomen, vomiting, diarrhœa and headache. On entrance, the diarrhœa had ceased, and there was constipation instead. Temperature 104.4°, pulse 135. Physical examination by Dr. J. J. Minot and myself showed that the patient was a thin, poorly-nourished girl, features pale and pinched. Tongue slightly coated and dry. Heart and lungs negative. Abdomen markedly distended and containing fluid — very sensitive to pressure. An ill-defined mass could be felt in the umbilical region, extending to the right flank. Patient weighed on entrance sixty-five pounds.

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[1] Read before the Boston Society for Medical Observation, February 6, 1893.

July 13th. Condition much the same as on entrance. Operation performed under ether. An incision was made in the median line about six inches in length. Upon opening peritoneal cavity, it was found filled with serous fluid slightly reddened by blood. Both the parietal and visceral peritoneum were found studded with small, millet-seed nodules; and a little to the right of the umbilicus was found a hard, irregular-shaped mass covered with similar nodules, and which on examination proved to be omentum closely matted together and thickened. The intestines, which were held together by soft adhesions, were separated by the hand, and a small piece was snipped off the parietal peritoneum for microscopical examination. The abdominal cavity was then thoroughly flushed out with warm salt-solution, and the wound closed with sterilized Chinese-silk suture, iodoform and baked-gauze dressing. Patient made a good recovery from ether; but towards evening there was considerable shock — the the temperature rising to 104.4°, pulse 150 and weak. Stimulants were freely given by rectum, and about midnight the temperature began to fall a little.

Her condition improved rapidly in the next few days; and in about two weeks she was sitting up and having full diet. Some days later a little pus appeared at one of the stitch-holes; and in a short time every one broke down, making a series of connecting tubercular sinuses. These were thoroughly curetted, under ether, by Dr. Munro, and the cavities packed with iodoform. In two weeks the wound had entirely healed. After this there was a steady gain in strength and weight. Her weight, July 10th, was 65 pounds; September 12th, was 68 pounds; October 18th, was 71 pounds; November 23th, was 86 pounds.

Microscopical examination by Dr. B. F. Mallory of the piece of parietal peritoneum removed at the time of the operation, showed miliary tuberculosis with bacilli. The granulations from the stitch sinuses were examined by Dr. Coggeshall, who also found the tubercle bacilli.

This case seems to be as complete a one of apparent recovery, as can be reported. At every stage we have careful microscopical and bacillary examinations by competent men; we have the weights of the patient and her temperature; and the patient is present to-night to show what the operation of laparotomy can accomplish in a severe case. The great relief following the opening and washing out of the abdomen, the healing of the wound followed by the appearance of a tubercular process creeping up along the tract of the stitches through the abdominal wall, its disappearance after thorough scraping and plenty of iodoform, and the presence now of the patient in perfect health, make it complete.

One point very strongly emphasized here is that drainage should never be used unless it is of absolute necessity on account of the pressure of pus or a very large amount of cheesy detritus, neither of these conditions being found, as a rule, in cases of general tubercular peritonitis. The benefit or harm done by drainage in this class of tubercular disease is determined by the same, or nearly the same, rules and conditions as in other parts of the body. Personally, I most thoroughly believe in closing without drainage every cavity resulting from an operation on tubercular processes not already suppurating. This rule applies not only to serous cavities but also to other sites of the disease. If through faulty asepsis or other reasons pus forms, it is then time enough to drain by gauze or tube. I am not prepared to say whether the introduction of iodoform into a wound to be closed by suture is of benefit or not. My results with and without it are about equal.

König states that the cases in his list show that those washed out with antiseptics show the best percentage of results. I am not ready to introduce into the abdominal cavity any known antiseptic in sufficient quantity or of sufficient strength to produce any action on the micro-organisms present, especially as so many cases have been cured without their use.

In conclusion, I quote the words of Osler whose article must, in the main, stand as the most useful one that we have on the subject:

"The important practical point, however, is the relief and cure of these cases by laparotomy; and the surgeons may well leave to the pathologist the minor question of determining the nature — whether fibroid, lymphomatous, or tubercular — of the chronic peritonitis."

Clinical Department.

A CASE OF PLACENTA PRÆVIA LATERALIS.

BY HUBERT G. WILBUR, M.D., FALL RIVER, MASS.

Mrs. V., age thirty-five, of good personal and family history, the mother of four children, when about three months pregnant began flowing at irregular intervals. The hæmorrhage was slight at first and painless. Later on it was more abundant, so that she felt weak, and became alarmed. On March 13th, just a few days before I saw her, the flowing was unusually profuse. She was then apparently about six months along. The fœtal heart was heard. Vaginal examination was negative.

A consultation was held with Dr. Gifford; and in view of the recent severe hæmorrhage, operation was decided upon. The expectant method did not seem wise, since the parents did not care especially to save the child.

Ether was given, and the vagina cleansed by a douche, 1–5000 bichloride; then with aseptic precautions the os was dilated manually. Version was performed, and the fœtus extracted rapidly. The placenta was felt in the left side just about at the margin of the inner cervical ring.

The hæmorrhage during and after the operation was considerable. The uterus did not contract well, presumably from the ether. I think there was some concealed hæmorrhage, for the patient was blanched, the pulse small and weak; and the flowing for two or three hours after the operation was very profuse. I was unable to give ergot at once owing to the partially unconscious condition. Stimulants were given freely, however, subcutaneously; and a large enema of salt solution was introduced, so that gradually the patient revived.

Ten hours later she was seized with severe pain in the left side, which was controlled fully by a subcutaneous injection of morphia. Subsequently, for two or three days, there was a little temperature, which gradually disappeared. Hot vaginal douches (1–3000 bichloride) were given twice daily after the operation until the temperature subsided. With supportive treatment and abundant nourishment, the patient is now entirely well.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

PENTAL AS AN ANÆSTHETIC.

THERE are collected 226 cases where pental was used for anæsthesia, and there has already been a fatal case recorded. Schede[1] advises that its use should be restricted.

LOCAL ANÆSTHESIA BY DILUTE SOLUTIONS.

In order to avoid danger from the toxic effects of cocaine as ordinarily used, Schleich,[2] of Berlin, endeavored to learn by personal experimentation the weakest solution of cocaine that was effective. This was a one-fiftieth-per-cent. solution. He found that distilled water injected subcutaneously was able to cause local anæsthesia, thus confirming the observations of Dawbarn, of New York. The water caused pain during injection, which was not noticed when a two-per-cent. salt solution was used. When the salt solution was combined with cocaine, a solution in distilled water of two-per-cent. salt and one-hundredth-per-cent. cocaine was found to give local anæsthesia enough for practical purposes. The advantage of this solution is that a large amount can be used, and without danger of toxic effect; also large areas can be affected.

ON PARASITIC PSOROSPERMS IN CANCEROUS TUMORS.

Ruffer[3] states that since his first note on this subject, in conjunction with J. Herbert Walker, they have been able further to confirm the opinion expressed at that time. He describes the intranuclear stage of the parasite. They are usually found in groups of two or three, and sometimes as high as twenty. When filled with spores the nucleus appears as a hard, dark-brown mass with irregular outlines. The psorosperm first appears in the nucleus in the cancer-cell. As it develops, it becomes more transparent, and each parasite has in it a small nucleus. They are found most commonly in the extremely soft cancer of the breast.

PYOKTANIN FOR THE CURE OF CANCER.

A recent review of the literature on this subject, by Idelson,[4] of Berne, seems to indicate that the value or efficiency of pyoktanin in the cure of epithelioma is not yet established, and that the successes are outnumbered by failures.

ARE BULLETS STERILE?

This question which has so frequently been answered in the affirmative has been investigated by Messner,[5] of Wiesbaden, and his conclusions are that the heating of the bullet during the discharge of the gun is not enough to destroy any bacteria which may be adherent to it nor even to impede their development. His experiments were made by shooting a bullet into a tin can filled with sterilized Koch meat peptone-gelatine. A full charge of powder was exploded. The range was 125 and 250 metres. The conditions were as follows: (1) A non-infected bullet, can sterile. (2) Bullet infected (pure culture), can sterile. (3) Bullet non-infected, can sterile, but covered with a flannel covering which was infected with a known coccus, pure culture.

The results are given thus:

(1) The shot canal through the gelatine, showed no change or more frequently a more or less vigorous growth of "scheinmelpilz," or those varieties more commonly found in the air.

(2) Without exception did the gelatine contained in the can show the development of the specific germ with which the bullet was infected.

(3) Here also the shot canal was infected with the same germ with which the flannel covering of the can was infected.

Although the experiments in the third class are not wholly convincing, still enough data is furnished by the rest of the work to decide the question in the negative.

CEREBRAL TUMORS.

At the German Surgical Congress, Twenty-first Session, 1892, Bramann, of Halle, reports two successful cases of removal of cerebral tumors. One was a small, round-cell sarcoma, in a man forty-six years old, on whom three operations were performed. The other was also a man, age twenty-six; tumor weighed nine ounces.

In the resulting discussion it was found that the frequency of cerebral tumors was one in eighty-four autopsies (Seydel, Munich), and one in fifty-nine (Hale White, London). The latter's records include more children; hence more tubercular tumors and the difference. Seydel's list of one hundred cases showed 27 tuberculous, 39 sarcomas (gliosarcomata and gliomata), 2 cysticerci, 1 actinomycosis, 3 cholesteatoma, 2 cysts, 2 carcinomata, 2 psammommata, 6 syphilitic, 16 not specified. The discussion with reference to the percentage of cases suitable for operation, that is, where the tumor was not too large, not metastatic, not multiple and was situated on the surface of the brain, is of interest. The conclusions were that the percentage of such cases is quite small. Seydel found three in one hundred; Hale White nine, of which v. Bergmann rejected seven, reducing the number to two; Starr sixteen in three thousand. There are at present on record five hundred cases of brain tumors (post-mortem statistics), of which eleven (2.2 per cent.)

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[1] [illegible]

[2] Annals of Surgery, 1892, vol. [illegible].

[3] British Medical Journal, 1892, vol. [illegible].

[4] Annals of Surgery, 1892, [illegible].

[5] Münchener med. Wochenschr. 1892, xxxix, [illegible].

were operable; and this is about the result of everyday experience.

SURGICAL TREATMENT OF INTRA-CRANIAL TUMOR.

McBurney and Starr[6] have contributed an interesting paper on this subject regarding three cases of intra cranial tumor in which operation was attempted. In all the cases there was no benefit derived.

McBurney has collected 87 operations for brain tumors, 74 cerebral and 13 cerebellar. In 16 cerebral and 7 cerebellar there was no tumor found. In 1 cerebral and 2 cerebellar the tumor was found but not removed. In 38 cases of cerebral and 2 cerebellar the tumor was removed with recovery. In 19 cerebral and 2 cerebellar the tumor was removed, with death of patient. The percentage of recovery was 46. In 34 cerebral cases the tumor affected the motor area.

Failure has been due to the lack of sufficient localizing symptoms; the inaccessibility of the tumor; the wide infiltration of the brain; and to the operation having been undertaken only to relieve intra-cranial pressure.

RETRO-PHARYNGEAL ABSCESS.

Phocas[7] advocates the treatment of retro-pharyngeal abscess by incision through the skin and not through the mouth; this method, which he points out, has been adopted by Watson, Cheyne and Pollard, is preferable for several reasons. He quotes cases to show the danger of wounding the carotid, which may be displaced by the abscess, and the possibility of immediate asphyxia from aspiration of pus into the lungs, or of broncho-pneumonia at a later date owing to the same accident. As to the site of the cutaneous incision, he recommends that posterior to the sterno-mastoid, and does not use the scalpel after the cutaneous structures have been divided. In one case which he records he washed out the abscess cavity, and recovery was rapid. The operation by incision through the skin has the further advantage that there is no difficulty or danger in giving chloroform.

EXTERNAL ŒSOPHAGOTOMY.

Meyer[8] considers that the operation of œsophagotomy can be performed with antiseptic precautions. He believes that first a gastrostomy should be performed and an external œsophagotomy; then the cardiac orifice can be tamponed off to prevent regurgitation of the food, and then by placing a tampon in the upper portion of the œsophagus, infection from the mouth is prevented. The œsophagus is cleansed by an antiseptic solution, and then the stricture is dealt with as with an internal urethrotomy. Bougies could be passed, and the patient nourished per rectum or directly into the stomach.

OPERATIVE TREATMENT OF EMPYEMA.

The present methods appear to be as follows: If of recent origin, and the intercostal space is wide enough for removal of coagula and for free drainage (as is found in adults), a simple incision is sufficient. Where the intercostal space is narrow, as in children, or where the ribs overlap, resection of the rib is indicated. This is also necessary in the long-continued cases (six months or more), where the organized exudation prevents the expansion of the lung and the obliteration of the cavity with free drainage.

ADHESIONS AND OMENTAL BANDS AS THE CAUSE OF VIOLENT AND PERSISTENT COLIC.

Lauenstein reports twelve cases in which long-continued suffering from violent colic was relieved by operation. The exploratory incision showed adhesions or bands in every case, uniting the stomach or intestines to the abdominal wall or adjacent organs: and their separation or removal resulted in relief. One case ended fatally from collapse. Hence this method of treatment is not advised till other means have failed. The bands frequently follow affections of the gall-bladder, stomach or Fallopian tubes. Lœbker and Winniwarter have observed similar cases. In one, where an extensively adherent ovarian cyst was removed, colic and severe pain necessitated three separate laparotomies to separate the new adhesions. After the fourth operation the patient was permanently relieved.

OPERATIVE TREATMENT OF TUBERCULAR PERITONITIS.

Lindner,[9] Berlin, has investigated a series of 205 cases of this affection where the treatment was operative. The mortality was 7.5 per cent. from the operations done, death resulting in most cases from collapse due to a prolonged operation or the exhausted condition of the patient — in a few cases to peritonitis and sepsis. Lindner sought to learn if a simple laparotomy-cut with evacuation of the exudation can result in a complete cure in these cases. He found this extremely difficult on account of the great difference in the methods reported by different surgeons and lack of similarity for comparison. He concludes, however, that the most influential factor for recovery is the power for absorption of the peritoneum. By removal of the exudation, pressure is removed, and the function or absorption power of the peritoneum is increased. The best results are where there is a large amount of exudation. Next favorable are the encapsulated cases. The chances of recovery are proportionate to the extent of peritoneal surface still capable of performing its function of absorption.

Hartmann and Aldibert[10] report 48 cases of tubercular peritonitis treated by laparotomy, with 46 cures and 2 deaths (4.16 per cent. mortality). Ten were well at the end of one year and three after three years. They consider that laparotomy is beneficial, but offer no satisfactory explanation. Complete removal of the tubercular fluid is considered important. Drainage, except in suppurative cases, is contraindicated, and is useless.

THE RADICAL CURE OF HERNIA.

Kocher, in a well-written monograph, which is a reprint from the *Correspondenzblatt für Schweizer Aertze*, 1892, has described a method which has failed to cure his patients only twice in seventy-six operations. These failures occurred in patients where the herniæ were of unusual size; and even in these cases Kocher thinks a truss would have prevented a recurrence. His method, which is well illustrated by cuts, requires only a brief description, since an excellent translation of Kocher's *brochure* has already been published in this country.[11] After making the usual incision of the skin and tissues, the sac is reached through the external ring; and after its careful isolation, it is pulled out through a small slit in the aponeurosis of the external oblique muscle at the internal ring. It is then twisted, turned down over the inguinal canal and sutured in place by silk sutures, which also includes the deep muscles, the pillars of the ring, and Poupart's ligaments. Kocher emphasizes the following points as essential to a successful result: That the peritoneum at the internal ring should be as smooth as possible. To accomplish this, the sac is completely isolated. It is then drawn out as far as possible. It is then twisted till no funnel-shaped dimple in the peritoneal surface remains. By pulling it out through the described slit at the internal ring, the peritoneum is brought close against the superjacent tissues. It is of great importance to firmly close the inguinal canal. He claims an improvement of the Bassini and Macewen method, in that he does not cut open the inguinal canal. A feature in Kocher's treatment is that his patients are not kept in bed, except when suppuration occurs, longer than one to two weeks. In the latter case (11 per cent.) twenty, three-days. A marked contrast to the Macewen custom. No trusses were worn except where very large herniæ had existed.

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[6] New York Medical Journal, January 21, 1893, British Medical Journal, February 18, 1893.

[7] La Semaine Médicale, December 24, 1892, British Medical Journal, January 28, 1893, p. 14.

[8] New York Medical Journal, November, 1892.

[9] Deutsch-Ztschr. f. Clin., 1892, xxxiv, p. 448.

[10] Annales de Gynecologie, Paris, June, 1892.

It is also of interest to record the results of Kocher's investigation of the mortality of this operation, since danger to life has been extensively advanced as a contraindication for a radical operation. It is practically nothing.

Svensson and Erdmann	106 cases	1 death . . .	Nephritis.
Lucas-Championnière	120 cases	1 death . . .	Nephritis.
Macewen	98 cases	1 death . . .	Scarlatina.
Bassini	250 cases	1 death . . .	Pneumonia.
Kocher	119 cases	1 death	Pulmonary Embolism.

INTESTINAL ANASTOMOSIS.

Murphy[12] describes an "anastomosis button."

It consists of two small circular bowls made of bone. In one bowl is fitted a small cylinder with a female screw-thread on its entire inner surface. In the other bowl is fitted a smaller cylinder, of a size to slip easily into the female cylinder. On the inner surface of the lower end of the male cylinder two small brass springs are fixed, which serve to hold the bowls together when the male cylinder is pressed into the female cylinder. In the side of each bowl are four openings which serve for drainage. The whole button has the form of two hemispherical bodies held together by invaginating cylinders. These hemispheres of the button are inserted in slits or ends of the viscera to be operated upon. A running thread is placed around the slits in the viscus, so that when it is tied it will draw the cut edges within the clasp of the bowl. A similar running thread is applied to the slit in the viscus into which the other half of the button is inserted, and the bowls are then pressed together. The pressure-atrophy at the edge of the bowl is produced by a brass ring supported by the spring. The opening left after the button has liberated itself is the size of the button. For this device the inventor claims the following advantages: (1) It retains its position automatically; (2) it is independent of sutures; (3) it produces a pressure-atrophy and adhesion of surfaces at the line of atrophy; (4) it ensures a perfect apposition of surfaces without the danger of the displacement; (5) it is applicable to the lateral as well as to the end-to-end approximation; (6) it produces a linear cicatrix, and thus ensures a minimum of contraction; and (7) it is extremely simple in its technique.

Three cases of cholecysto-enterostomy with this device are reported, with apparent good results. In one case the time occupied by the operation was eleven minutes. Other experimental operations on animals are reported as having been done successfully. These include cholecystic-enterostomy, gastro-intestinal anastomosis and entero-intestinal anastomosis.

EXPERIMENTAL RESEARCH ON THE IMPLANTATION OF THE URETERS INTO THE RECTUM.

Reed[13] has performed some interesting experiments in this direction, and arrives at the following conclusions:

(1) That the unilateral implantation of the ureter into the rectum is a possible and practical procedure.

(2) That the bilateral implantation of the vasa deferentia into the rectum is not followed by any serious or detrimental results, further than rendering the dog sterile.

(3) That the simultaneous implantation of both ureters into the rectum is still a questionable procedure, as shown by the experiments made on a dog, and also by Kuster's double implantation of the ureters in man.

(4) That the presence of the urine with the fæces in the rectum does not produce pathological irritation of the latter, but that the rectum will readily accommodate itself to its presence.

(5) That the passing of frequent liquid stools cannot be depended upon as resulting from implantation of the ureters into the rectum, and the presence of urine in that receptacle.

(6) That these experiments have suggested the probability of a portion of the water of the urine being absorbed by the rectum leaving the salts, etc., of the same to be eliminated from the economy with the fæces.

(7) That the ligation of one ureter, and the consequent production of hydronephrosis, is not necessarily followed by inflammation and destruction of the wall of the ureter or the substance of the kidney, and suggests one of two things: either arrest of the secreting powers of the kidney, or reversal of the natural physiological process of elimination for those of absorption.

RECENT EXPERIENCE IN THE OPERATIVE TREATMENT OF CARCINOMA OF THE RECTUM.

The work of Czerny, at Heidelberg, in this branch of surgery since 1886, has been investigated and published by G. B. Schmidt,[14] and gives interesting results. During six years (1886 to 1891 inclusive) 82 cases of rectal carcinoma requiring radical operations have been collected.

Number of radical operations	[illegible]
Number of palliative operations [illegible] . . .	[illegible]
Refused operation	[illegible]
Total number of cases	[illegible]

The operations performed were (1) "Lisfrancs'" (circular incision of anus), 17 cases; (2) "Dieffenbach's," 15 cases; (3) "Kocher's" (post-vertical incision and excision of coccyx), 2 cases; (4) Kraske's resection of sacrum, 34 cases.

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[11] Annals of Surgery, [illegible], vol. [illegible].

[12] New York Medical Record, 1892, vol. xlii, p. [illegible].

[13] Annals of Surgery, [illegible].

[14] Beitrage z. klin. Chir. 1892, Bd. ix, [illegible].

Mortality. — Perineal extirpations, 32 cases, one death from hæmorrhage ($3\frac{1}{10}$ per cent). Sacral method, 36 cases, 7 deaths ($19\frac{4}{10}$ per cent). Total, $11\frac{7}{10}$ per cent. Cautery, colotomy, curetting — mortality 0.

The results are given as follows:

Perineal Operation. — There have been 30 cases, and 16 deaths since leaving hospital ($53\frac{3}{10}$ per cent.). Average duration of life two years; longest, four years. Four patients not heard from. Remaining 10 cases ($33\frac{3}{10}$ per cent.) reported alive and well.

Sacral Method. — There were 36 cases and 9 deaths (31 per cent.) after leaving the hospital; from local recurrence or metastasis, etc., 18 (62 per cent.) are reported well two years after operation. Most of these patients are reported as at work.

Functional Results. — An ideal result (absolute continence and perfect function of sphincter) resulted only in a few sacral cases where it was possible to make a circular suture of the gut. Bandages and pads are used to temporarily close the new anus. Hochenegg's pad, made after a plaster-of-Paris cast of the new anus, is best adopted for the sacral ani.[15]

(To be continued.)

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, February 6, 1893, DR. J. W. FARLOW in the chair.

DR. CARTER read a paper on

OBSTETRIC PARALYSIS, WITH ESPECIAL REFERENCE TO THE ETIOLOGY AND PATHOLOGY.[1]

DR. J. J. PUTNAM: I have been long interested in these cases, and I am aware that some of the obstetricians consider them to be of rather slight importance, and almost certain to do well. In our experience at the hospital some of them have been very serious, although it seems highly probable that most of them finally recover. We have, however, a very conspicuous instance of only a partial recovery, it is said, in the present German Emperor, and where the recovery is long delayed, arrest of development would be likely to occur. In regard to the mode of production of the paralysis, it seems to me that Dr. Carter is entirely correct in supporting the theory of stretching of the cervical root. It was always unsatisfactory to me to adopt the old theory of pressure. It seemed impossible that the forceps should slip down so far as to reach the upper branch of the brachial plexus and that they should always injure the same point. The spinal theory is, one of my friends has told me, taught to some extent in Germany, but I have not been able to find any definite reference to it.

In regard to the case to which Dr. Carter referred, it was a case of Dr. W. L. Richardson's; and in his absence I will say that Dr. Carter's statements are correct, and that the child at the end of two months has recovered so as to extend the fingers, although feebly. I presume that the other muscles will recover in time.

There is one other point that seems to me of importance, and which is exemplified by the case to which I have referred, and that is, that occasionally, in consequence of partial injury to some of the nerves — at least I presume that to be the case — the paralysis of certain muscles is complicated by the spasm of other muscles not entirely paralyzed. This little child had at one time quite a strong spasm of the flexor muscles of the fingers, which I was afraid was going to give considerable trouble, and also spasm of the pectoralis, which still persists to some extent. The most marked instance of this which I have seen was in a case brought to the Massachusetts Hospital about nine months ago. The arm with the elbow flexed was drawn up into the position of a boxer defending his face, and although it could be pulled down without great difficulty it almost immediately returned to its former position when it was released. I think that Dr. Carter's observations are valuable in several particulars, particularly as pointing out the real explanation of the pathology, an explanation which it is possible may lead now and then to the avoidance of the trouble, and also in pointing out the probability, which I hope represents the truth, that the long-delayed recovery, as a rule, makes its appearance at last.

DR. C. M. GREEN: I have been a good deal interested in this class of cases ever since the papers of Dr. Lovett and Dr. Burr; and I am glad to have heard Dr. Carter's presentation of the subject this evening. Dr. Carter's explanation of the probable cause of obstetric paralysis of the arm is to me very convincing. It seems quite improbable that the paralysis can result from undue pressure of the forceps on the child's neck, for even in face presentations the blades need rarely, if ever, impinge upon the neck, but are properly kept from doing so. But in the delivery of the after-coming head, and in the extraction of the shoulders after the fore-coming head is born, strenuous traction is often necessarily exerted upon the neck, and apparently in some cases the brachial plexus is thereby unduly stretched and paralysis results. That great traction on the neck is not necessarily followed by paralysis is, of course, quite evident; I have never had a case of brachial paralysis following labor in my own experience, and yet I have often been obliged to exert great traction on the neck in the delivery of the after-coming head in difficult cases.

The case cited by the reader as occurring in Dr. Richardson's practice I had the opportunity of seeing; in fact, I assisted in the delivery of the child. Interference was indicated when the head was in the superior strait, O. L. A. The high forceps operation was performed, and the head was delivered without extreme difficulty: but the child was very large, it was found to weigh eleven and three-quarters pounds, and the extraction of the shoulders seemed almost impossible. A good deal of force was necessarily exerted upon the neck, that is to say, the neck was subjected to much stretching from traction on the head, in order to accomplish delivery of the shoulders, or even to bring the shoulders low enough to enable the operator to extract the arms. In this case, the neck was certainly subjected to sufficient traction to stretch the brachial plexus: but it was a question of possible injury to the child, or the loss of it altogether. And it must be remembered that to save fœtal life the obstetrician must work rapidly; for a child presenting by the head can no more breathe after the birth of the head while the shoulders are still undelivered, than he can in breech cases while the head is arrested in the superior strait. As I understand Dr. Carter, he has found that in head presentations the paralysis affects the anterior arm; that is, the right arm in O. L. A. cases, and the left arm in right positions. Is this explainable by the fact of greater pressure on the anterior shoulder against the symphysis?

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[1] See page [illegible] of the Journal.

[15] Pick: Annals of Surgery, 1892, vol. xvi, 554.

Dr. Carter: That is a question I have not been able to decide. That is my theory.

Dr. C. P. Putnam: What is the proportion of cases in which forceps was used?

Dr. Carter: Twenty out of thirty-two.

The object of this paper was to show that the forceps was not responsible for this form of paralysis, that the injury was done after the head had passed out where it was not meeting with resistance, but the shoulders were being held back and there was traction on the head.

Dr. Walton: I am afraid I cannot add anything to what has been said. I can only say that I thoroughly endorse Dr. Carter's views regarding the etiology. It has never seemed to me that the previous explanations were satisfactory. The pressure of the forceps may be almost at once eliminated for certainty. As Dr. Carter has said it would seem almost impossible that one could produce such pressure on these yielding parts as to produce a lasting paralysis without some external signs. The explanation offered of spinal lesion it seems to me we can practically throw out, although we can imagine a disease or lesion at that point in the spinal cord where the fifth and sixth roots arise, yet the prognosis would militate strongly against such a theory inasmuch as such a pathology would leave a permanent residue. We are really left with this explanation of Dr. Carter's as the only satisfactory one, and he is certainly to be congratulated for working it out so carefully and satisfactorily. This theory also explains those cases where a similar paralysis occurs in the adult following a fall on the shoulder which separates the shoulder violently from the head. Here there is no dislocation to cause brachial paralysis, no local pressure, and no other cause excepting stretching of the plexus to explain the trouble. As far as the prognosis goes it is rather surprising that there is such a difference of opinion. Some obstetricians treat this subject very lightly, and tell the family it will rapidly recover and does not amount to much. Whereas we have on the other hand, the views of certain writers who state that the prognosis is very bad. My experience would lead me to place the prognosis somewhere between these two extremes. I have never seen an adult with remnants of obstetrical paralysis. I did not know, by the way, that it was certain that the Emperor's paralysis was obstetrical paralysis. I think we may fairly say the prognosis for ultimate recovery is good, but that the trouble may persist many years.

Dr. C. R. Burr: I am apparently the only advocate here to-night of the spinal origin of this disease.

Dr. Carter has rather doubted my ability to test sensation in the young child, but even an infant is quite capable of determining whether or not it feels a pin-prick and of expressing its feelings in a forcible manner. In the five cases so tested I got not the slightest evidence of impaired sensation.

Another point which attracted my attention, was the irregular distribution of the paralysis, that is, all the muscles supplied by a common nerve were not necessarily paralyzed. This was very evident in two of the nine cases which I reported. In the first of these, three of the muscles supplied by the posterior interosseous nerve were paralyzed, namely, the extensor primi internodii pollicis, the extensor secundi internodii pollicis and the extensor indicis; while two were operative, namely, the extensor communis digitorum and the extensor minimi digiti. In the second case, of the three muscles supplied by the musculo-spiral nerve, namely, the coraco-brachialis, the biceps and the brachialis anticus, the first was the only muscle which could be moved.

A pressure neuritis, as I have seen it, runs a definite course of a few weeks; or at most, of a few months' duration; but several of the cases which I reported, had already lasted many months and one five years. I do not think, therefore, that until our knowledge of the pathology of this affection is fuller than at present we are warranted in considering it other than a form of acute anterior poliomyelitis. If any autopsy had ever been obtained, this theorizing as to the nature of the lesion would be unnecessary.

After my paper had been written, there was brought to the Children's Hospital an infant nine months old. It had the characteristic symptoms of obstetric paralysis. The thumb was folded across the palm, the fingers flexed over it; the forearm extensors were paralyzed, also the upper-arm flexors; the elbow was turned to the front. I examined the child with considerable interest. There was not the slightest history of obstetric paralysis. Three weeks previously the mother had noticed for the first time that the child could not raise the left arm. This was a second child and there was a history of instrumental delivery. It occurred to me: Is this an obstetric paralysis? The symptoms were identical, but the history was different. There had been no illness since birth save a "bronchitis" six weeks before, and it is inconceivable that had the arm been paralyzed at birth it should have remained unnoticed for nine months.

As long as the theory has been ascribed to me, I am pleased to hear it has also been advanced in Germany.

In brief, this theory is that since there is at birth a physiological congestion of the fœtal brain and cord, which is directly proportionate to the obstacles encountered, and since also the gray matter of the cord and that of the anterior horns in particular, is more vascular than the contiguous tracts, it is conceivable how traction at this juncture might result in capillary extravasation and subsequent degeneration of the ganglion cells. This I conceive to be the common etiology of the affection, though of course, along with this, there may be a forceps paralysis as well.

Dr. J. J. Putnam: I believe there is not the slightest question that poliomyelitis of this type occurs both with adults and children; and within two months we have had at the hospital a man fifty years old with a typical paralysis of this sort. Furthermore, I believe it is possible that poliomyelitis may occasionally occur in fœtal life, but the upper-arm type of birth-palsy is seen far too often to admit of its being ascribed to that cause. Then, moreover, as this case of mine shows, the reaction of degeneration sometimes does not come on for several weeks after birth; whereas after poliomyelitis occurring in fœtal life we should probably have the child born with the reaction of degeneration. Of course, it might occur just at the moment of birth could be due to capillary hæmorrhage; but it seems almost incredible that we should have a hæmorrhage limited to such a small portion of the spinal cord, and yet occurring so often in that same portion.

Dr. Walton: It has struck me that an additional argument against the spinal origin is that in some cases the lesion is bilateral. It would certainly be surprising to have a double lesion of the cord whereas stretching of both brachial plexuses, for example in a breech presentation, is not at all improbable.

Dr. Carter: With regard to the case Dr. Burr mentions, a reference to the anatomy will show that there is a branch from the musculo-spiral which supplies the muscles paralyzed; injury of that branch would paralyze just those muscles, hence I would suggest that the injury may have been purely a local one and not an injury to the plexus or nerve roots.

Dr. S. J. Mixter read a paper on

LAPAROTOMY FOR TUBERCULAR PERITONITIS.[2]

Dr. Fitz: The patient shows that Dr. Mixter has succeeded in relieving this person of tubercular peritonitis: that he has cured the patient is quite another question. When the surgeon opens the abdomen and finds things he calls tubercle, he gives no evidence that tubercles are present or that the case is one of tubercular peritonitis. In this case the diagnosis is established by the essential evidence, but there is a possibility of doubt in most of the reported cases of recovery after laparotomy, whether they were cases of tubercular peritonitis or not. During the past ten years many cases have been published all over the world, of recovery from tubercular peritonitis after laparotomy. Unfortunately an important element is lacking in most of these cases and is also lacking in Dr. Mixter's case, that is the element of time. There are but few cases which have been followed a number of years after the operation, and in these the results are not so favorable as Dr. Mixter assumes or infers from Dr. Osler's paper. In but one case on record is there a period of more than three and a half years between the operation and the subsequent report of the case. This was a case of probable tubercular peritonitis. The next longest interval is about two and a half years. The patient was operated on for another abdominal disease and the peritonitis instead of being cured was found existing. In a third case in which the interval was eighteen months, the child died of tuberculosis after the case was reported as cured by the operation. Undoubtedly great relief results from the operation, but the question of cure is another matter. The same successful results have followed tapping as have followed laparotomy. I present this side of the question. Dr. Osler's admirable paper referred to by Dr. Mixter does not represent the last word upon the subject; it was written some two years ago and considerable evidence has accumulated since then.

Dr. Richardson: This year I have operated upon several interesting cases, followed by immediate benefit and recovery. In some no source for the tuberculosis was found, while in one (the specimen of which I showed some weeks ago) there was enormous dilatation of the Fallopian tubes due to a tubercular process. This patient was operated on early in the summer and has been well ever since.

As to the method of operating, I have closed the abdomen after removing all the fluid, with good results, but in some cases I have left in a drainage-tube. One case recovered, temporarily at least, where I opened in the median line, and having put large drainage-tubes both in the middle and through both flanks, I flushed out with boiled water. Regarding the methods of operating, I cannot see why it is necessary to open the abdomen if the same results can be accomplished by the use of a trocar. The last case I saw I sent into the hospital, where the man has been treated by tapping. It seems to me that the same principle applies whether you make an incision and drain, or whether you wash out through a trocar.

Dr. Fitz: With reference to the general question of the surgical treatment of tubercular peritonitis, the weight of evidence as to the ultimate prognosis for the patient is, that it is extremely grave. The immediate result of the operation may be very favorable, but physicians are rather more concerned with the relief to the patient than with the success of the operation.

Dr. Mixter: I find all sorts of theories advanced as to why this operation should do good, but none of them seem tenable. One man goes so far as to speak of the influence of light on the bacillus. It is the same point that comes up in this as in other cavities. Take the knee-joint, the tendon sheaths, etc., when they are the site of tuberculosis and when they are opened and a large part of the tubercular mass is removed, in a great many cases the process is arrested and the patient recovers apparently. I happen to have had quite a number of cases of tuberculosis of the tendon sheaths of the wrist in the last year, and, without exception, they have been severe ones. It has been impossible to remove all the tubercular masses and they have been all closed without the use of iodoform in the bottom of the wound and they have all been followed by very good results. There has been no sinus, no discharge following; the swelling has disappeared and the patients have good motion in the hand and fingers. In every case I think both deep and superficial flexors or extensors were involved, and at the time of operation one could not understand why the process should not go on. It certainly did not go on, and I think every one who operates much on tubercular processes finds that to be the case, that even partial removal of the tubercular masses causes apparent disappearance of the rest and good result follows. The correct explanation of this result I think has not yet been given.

Dr. Richardson: I have operated on a good many tendon sheaths and the disease has always recurred. If that is true of tendon sheaths I do not know why it should not be true of the peritoneum.

Women with Moustaches. — Dr. Brinton, in *Science*, remarks upon the prevalence of hair on the faces of women in certain races and its absence in others. In Constantinople about ten per cent. of the women met on the streets, between eighteen and fifty years of age, had visibly hirsute upper lips. In the streets and stores of Philadelphia, he found less than three per cent.; but in America, he considers the statistics unreliable on account of the wide sale of different depilatories and the common use of the electro-puncture. In Madrid, the number of such women is very large; but in negroes and mulattoes it seems quite absent.

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[2] See page [illegible] of the Journal.

Recent Literature.

A System of Genito-Urinary Diseases — Syphilology and Dermatology. By various authors. Edited by Prince A. Morrow, M.D., Clinical Professor of Genito-Urinary Diseases, Formerly Lecturer on Dermatology in the University of the City of New York, Surgeon to Charity Hospital, etc. In three volumes, with illustrations. New York: D. Appleton & Co. 1893.

Volume I, Genito-Urinary Diseases. — The first of these three volumes — which has recently appeared — gives ample evidence of the liberality and thorough workmanship of its publishers, and of care and thought on the part of its editor, to whom great credit is due for the admirable manner in which he has accomplished the arduous task involved in the preparation and production of such an important work as this is.

The volume contains 1064 pages, comprising articles written by thirty-two well-known American Specialists and Surgeons. These articles are handsomely and very fully illustrated, and are arranged — generally speaking — in the natural sequence of the anatomical distribution of the organs treated of, beginning with the diseases of the penis and ending with those of the kidney; the whole being preceded by an excellent treatise on the "Anatomy and Physiology of the Genito-Urinary Organs," by Dr. George Woolsey of New York.

The comprehensiveness of this work may be seen by a glance at the list of the subjects in the table of contents.

There are two features which are especially noteworthy: the stamp of originality and of the personality of the authors that many of the contributions bear, and the presence of a number of subjects, exhaustively treated, which are but cursorily mentioned or are not to be found at all, except in monographs and special articles scattered through the medical journals. As examples, may be mentioned the following: (1) "Diseases of the Penis," by Guiteras; (2) "Endoscopy," by Klotz; (3) "Gonorrhœal Ophthalmia," by Andrews; (4) "Gonorrhœal Rheumatism," by Hartley; (5) "Diseases and Injuries of the Urethra," by Brown; (6) "Gonorrhœa of the Rectum, Nose, Mouth, Ear, Umbilicus and Axilla," by Tuttle; (7) "The Functional Disorders of Micturition," by Bryant; (8) "Diagnostic Significance of Pathological Modifications of the Urine (including the most practical method of urinary analysis)," by Fuller; (9) "Cystoscopy," by Meyer; (10) "Tuberculosis Uro-Genitalis," by Bryson; (11) "Diseases of the Seminal Vesicles," by Thorndike; (12) that portion of Cabot's article on "Stone" which relates to stone in the prostate, urethra and ureters; (13) that part of Belfield's article which treats of the operative treatment of prostatic hypertrophy.

The work is far too extended to allow of a detailed consideration of its individual contributions, each of which deserves a separate review; we can only refer briefly to a very few of the many notable features which it contains, such, for instance, as the following:

The account of the various abnormities of, and injuries to, the penis; the paragraphs devoted to "Diabetic-Balano-posthitis," and the "Diseases of the Corpora Cavernosa," in the article by Guiteras.

In Brown's article, the chapters on "Urethral Ulcer and Erosion," and "Wounds and Lacerations of the Urethra" — in the first of which are descriptions and illustrations of the author's "Urine" and "Bivalve Urethral Speculums" present much that is original and interesting.

The observations of the rare instances of gonorrhœa of the rectum, mouth, nose, etc., presented by Tuttle, afford an interesting and curious study which will be novel to many readers.

The treatises of White on "Stricture of the Urethra" and of Cabot on "Stone," are among the most thorough and valuable contributions to the work.

The latter part of Cabot's article is devoted to the consideration of "Stone in the Ureters," and much that is new and suggestive — including the reference to the author's proposed application of Kraske's sacral operation for the removal of rectal cancer, and to the removal of stones from the ureters in a certain class of cases — is to be found in it.

Belfield, to whom is due much of the advancement and success of the operative treatment of prostatic hypertrophy that has taken place in recent years, gives a valuable and instructive review of what has been accomplished in this field of work up to the present time.

Bryson treats of tuberculosis uro-genitalis in a very full and masterly manner, and his work should receive careful study; this affection of the genito-urinary tract being the most obscure and misleading of all the diseases that occur in this region, and but little understood by general practitioners. That part of the article devoted to the "Avenues of Infection" is especially noteworthy.

Of the work as a whole, we do not hesitate to say that it is the most complete and best single publication of all of those which profess to cover the ground of genito-urinary diseases, with which we are acquainted, and recommend it cordially to the favorable consideration of the profession.

Cancer of the Mouth, Tongue and Œsophagus: Their Pathology, Symptoms, Diagnosis and Treatment. By Frederic B. Jessett, F.R.C.S., Eng. Surgeon to the Cancer Hospital, Brompton. 183 pages, 9 illustrations. London: Ballière, Tindall & Co. 1892.

This book is a revised portion of a treatise originally published in 1886. The importance of cancer affecting the organs designated in the title has caused the writer to publish this subject separately. The disease is considered separately as affecting the lips, gums and antrum, jaws, tongue, tonsils, pharynx and œsophagus. Operative procedures are in some cases illustrated by wood-cuts. The book is interestingly written. It contains much statistical information relative to the frequency of cancer classified according to its site, tabulated reports of cases, operative procedures and results, age, hereditary influence, causation, etc. The description of treatment, both operative and otherwise, is apparently a complete review of the subject.

On March 13th the Tennessee legislature passed a pharmacy law for that State, to take effect November 1st. It does not apply to towns of less than 3,200 inhabitants. The State association will submit ten names to the governor, five of whom (or others) will be appointed a board of pharmacy.

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POLITICS IN INSANE ASYLUMS.

FOR a number of years physicians and others interested in medical and social problems have watched with much interest the experiments made at the Kankakee Asylum for the insane, in Illinois, to provide for their patients in separate buildings and to furnish occupation to such as are capable of benefiting by it. Thanks to Dr. Dewey's professional skill and practical sense, the new plan has been an eminent success, and like Dr. Godding's work in Washington, has exercised a great influence in putting an end, in other institutions also, to many of the objectionable features of the old system of one monster building for herding together hundreds, or even thousands, of insane patients in gregarious inactivity.

Dr. Dewey, as medical superintendent of the asylum, has organized its details of management most admirably, so that trained and skilled nurses and attendants supplement the duties of an excellent corps of physicians, thereby making a difficult experiment so marked a success as to attract attention and receive general commendation in this country and in Europe.

Unfortunately, thirty-five years of supremacy at the polls of the Republican party had placed the Kankakee and other asylums of Illinois in the exclusive control of politicians of that party, who, it is claimed, have used their power to employ only partisans of the dominant party from the highest to the most subordinate positions. It is even asserted that medical officers have been assessed for election expenses to keep their party in power. An excuse, or a pretext, has therefore been given the Democratic party, at the turn of the political wheel, to turn out trustees, physicians, nurses and other employés, to put in good Democrats.

In Dr. Dewey's case, at least, we are informed that the proposition was made that he might remain medical superintendent of the asylum, if he would discharge his subordinates throughout the institution and appoint others from the party in power, but that he properly refused to retain his position at the cost of sacrificing his patients to so harmful and demoralizing a change in the service.

In Massachusetts, where the welfare of the sick and suffering is not subordinated to party interest, where public opinion would not tolerate the idea of making the salaries of officers and employés in insane asylums simply rewards of political activity, it is difficult for us to conceive why the friends of the insane, not to say the whole medical profession and the community in general, can allow such a mischievous and pernicious system to exist.

It is no disparagement to Dr. Dewey's successor to say that he will find great difficulty in filling his new office. At the hospital at Anna, the recently-appointed superintendent is reported not to have earned the reputation of being lukewarm in his political partisanship, although not possessing such attainments as an alienist as to give him a wide celebrity.

The evils of such a practice are so obvious that it is not necessary to point them out. They are great enough where the result of making offices the rewards of political merit is simply to make plunder of the hard-earned taxes of the people, and to demoralize both those who benefit by, and those who endure, such degrading customs. But when so unfortunate and helpless a class as the insane are made the victims of political bossism, there should be a most vigorous protest against it.

It is to be hoped that the newly-formed American Medico-Psychological Association, taking the place of the old Association of Superintendents of Insane Asylums, will have, and will exercise, some power in reforming this great abuse. We fear that Illinois is only one of many of our States where it exists, and that even the conscience of the medical profession is not yet sufficiently aroused to prevent such gross injustice to their colleagues, if nothing more.

◆

INTESTINAL ANTISEPSIS IN TYPHOID FEVER.

SINCE Eberth, in 1880, discovered in the lymphatic glands, Peyer's patches, spleen, liver, kidneys and lungs of typhoid fever patients a peculiar bacillus, now called by his name, and which he regarded as etiological; and since the causal connection of this bacillus with dothienenteritis has been affirmed everywhere by competent bacteriologists whose experimental researches and conclusions are entitled to the highest respect, there has been a preponderant desire to institute a successful antiseptic medication of typhoid fever. Such treatment is strictly in accordance with the leading indication in this, as in all other diseases, namely, to attack and remove the cause. The antiseptic treatment of typhoid fever, if possible of realization, must necessarily dominate every other, and become (by destroying pyretogenous toxines) the most effective antipyretic treatment.

As far as typhoid fever has become a general disease (the blood being poisoned by the specific toxines, and organs inaccessible to direct medication, as the spleen, being the seat of active bacterial proliferation), so far it will always be difficult if not impossible to effect causal therapeutics by the introduction of antiseptic medicines. The sick organism has natural defences of its own against the microbes and their poisons, and on the integrity and efficacy of these defences the main hope and reliance must always be placed. It is doubtless possible to augment and reinforce these natural curative resources, and here the traditional stimulant and supporting treatment will ever find its sufficient warrant.

But besides the general infection in typhoid fever, there are the local effects. The most remarkable are the intestinal lesions, consisting in ulceration and gangrene of certain parts of the intestine, then in the putrefactions which develop and which manifest themselves by the meteorism and fetid diarrhœa. Bouchard, who has written much on this subject, finds reasons for the belief that these putrefactions are largely dependent on the presence of the pathogenic organism.

As these putrefactions and the other symptoms and lesions referable to the intestines are a large factor in the morbid syndrome of this disease, the importance of intestinal antisepsis becomes obvious. It would seem that much might be gained if the intestines could be kept disinfected, if the morbid fermentations there taking place could be arrested, if the microbes there rioting could be impeded or thwarted in their depredations. Moreover, if the intestinal lesions are the primary lesions (as there is some reason to think), it would seem that if intestinal antisepsis is to be attempted, the earlier it is attempted the better.

Bouchard may almost be regarded as the founder of intestinal antisepsis. He rightly reasoned that remedies to reach the intestinal mucous membrane must be insoluble in the stomach. He early experimented with charcoal, magnesia, chalk, bismuth, naphthol, iodoform, naphthalin, salol, salicylate of bismuth from the point of view of intestinal antisepsis. He obtained seemingly good results from powdered charcoal. He found that with large doses of this remedy he could completely deodorize and decolorize fæcal matters and diminish their toxicity. The quantity required was large, a tablespoonful every two hours. "Statistics based on more than three hundred cases," he says, "showed a mortality reduced from twenty or twenty-five to fifteen per cent."

Bouchard seems to have been ignorant of the fact that, more than twelve years ago,[1] Sir William Jenner recommended the same treatment. "A teaspoonful of charcoal may be given two or three times a day. . . . Other correctives of fetor or antiseptics will have as good an effect, but this has given me such satisfactory results that I have not resorted to other remedies."

Latterly Bouchard has tried iodoform, with some success; he thinks highly of salicylate of bismuth, which is very insoluble and innocuous, and "might be expected to transverse the whole intestinal tract without decomposition." (If this be the case, it must act only by its mechanical presence.) He has, in his last published utterance, given the preference to beta-naphthol, which he thinks is the ideal remedy, and is to be given in doses of seven and one-half grains, in capsules, every three hours till the stools are completely deodorized and disinfected.

Five grains each of bismuth, salicylate and beta-naphthol may be given, in capsules, every three or four hours; it is better not to give the naphthol in powder suspended in liquid, being acrid to the fauces.

Dr. J. Mitchell Clarke[2] has experimented favorably with beta-naphthol and hydro-naphthol. His results were: (1) "Reduction of the average duration of the fever; (2) less offensive stools; (3) less abdominal distention; (4) early cleansing of the tongue, and less dryness of lips; (5) absence of albuminuria; (6) convalescence more rapid and strength less reduced; (7) less risk of propagation of the disease; (8) diminished tendency to secondary complications."

Salol, which may be given in five-grain doses every two hours,[3] combined with an equal quantity of bismuth-sub-nitrate in chalk mixture, is open to the objection of being soon split up. According to the above writer, however, it corrects the fetor of the stools, controls abdominal pain and arrests diarrhœa. There is, in the medical literature of the past two or three years, much testimony in favor, and against, salol in typhoid fever.

Oil of eucalyptus and oil of turpentine are both highly antiseptic; and the benefits which have been claimed for both these remedies (and especially the latter) in typhoid fever, are, by recent writers, thought to be due to the arrest both of microbic proliferation and of putrefactive changes. "More lives would be saved," says Prof. H. C. Wood, "if the oil of turpentine were more freely used in this disease." The latter remedy was first recommended by Dr. George B. Wood, nearly fifty years ago.

The use of camphor in typhoid fever, not only as an antiseptic, but as a cardiac stimulant, has been highly commended by Dr. Janeway of New York. "Its very slight solubility in water ought to insure its local antiseptic action on the intestine (Yeo)."

Thymol has been given by F. Henry with the same intent; he gives a grain and a half or two grains, made into a pill with soap, every six hours. Owing to its insolubility he thinks it passes into the intestines and there neutralizes toxic ptomaines which result from gastro-intestinal catarrh. He has found it to lessen diarrhœa and lower temperature. Testi, an Italian physician, has also given thymol in one hundred and fifty cases of typhoid, with good results (Yeo). He noted a lowering of the temperature, disinfection of the intestinal tract, a diminution of diarrhœa and tympanites; also a notable decrease in the products of putrefaction developed in the intestine and eliminated in the urine.

Professor Grancher has experimented much with these and similar modes of treatment. He relies much on the internal administration of quinine "to antagonize the infective agent in the blood; giving even to young children, fifteen to twenty-five grains a day, in divided doses."

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[1] Lancet, November 15, 1879.

[2] Practitioner, December, 188[illegible].

[3] Fussell: Therapeutic Gazette, [illegible]

Dr. J. Barney Yeo [4] claims remarkable success from a mixture of chlorine and quinine. His method of preparing the mixture is as follows: "Into a twelve-ounce bottle, put thirty grains of powdered chlorate of potash and pour on it forty minims of strong hydrochloric acid. Chlorine gas is at once rapidly liberated. Fit a cork into the mouth of the bottle and keep it closed till it becomes filled with the greenish-yellow gas. Then pour water into the bottle, little by little, closing the bottle, and well shaking at each addition until the bottle is filled. . . . To twelve ounces of this solution, I add, for an adult, twenty-four or thirty-six grains of quinine, and an ounce of syrup of orange peel, and give an ounce every two, three or four hours, according to the severity of the case. . . . I have for the past few years treated all my typhoid fever cases, except the very mild ones, on this system, and all have done well."

Yeo affirms that under this treatment the tongue keeps clean and moist, the temperature low; there is a greater power of assimilating food, a complete deodorization of the evacuations, and a more rapid and thorough convalescence.

This writer gives some good hints as to the feeding of typhoid patients. Such patients are too often systematically stuffed, and diarrhœa and putridity are kept up by the decomposition of accumulations of food that cannot be absorbed. If undigested milk-curds appear in the stools, it is an indication that the patient is overfed. He advises, in common, with others, that milk should never be given undiluted to a fever patient, and that it should be made distinctly alkaline by lime-water, Vichy water or soda. He urges the importance of the free administration of water to carry off the products of metamorphoses, as an eliminent and antiseptic. The diet, in short, should be limited to the amount of liquid nourishment which the patient is able to absorb. These remarks seems to be just and such care in diet will doubtless contribute much to the limitation of putrefactive processes in the digestive tube in typhoid fever.

This whole question of intestinal antisepsis is an attractive one to the clinician; but it is evidently still open to experiment and criticism. More is guessed at and hoped for than is known or determined.

◆

MEDICAL NOTES.

Cholera Epidemic in Paris. — Cholera has been rife in Paris eight times since it was first brought there sixty-one years ago, and each epidemic appears to have affected a smaller percentage of the city's population. The following figures furnished by the special correspondent of the *Lancet* do not refer to the actual number of cases, but give the proportionate number affected out of each one hundred thousand people during the different cholera years. The proportion in 1832 was 2,345 per 100,000; in 1849, 1,861; in 1854, 732; in 1865, 354; in 1866, 289; in 1873, 46; in 1884, 44; and in 1892, 39.

Cholera at the Eleventh International Medical Congress. — At the request of the Indian Government, the Organizing Committee of the Eleventh International Medical Congress, to be held at Rome in September, has decided to have a Section to be devoted to the consideration of the subject of cholera, to discuss its origin, the means of arresting its diffusion, and its treatment.

Quadruplets. — A young woman living near Blairstown, N. J., is reported to have given birth recently to quadruplets, two boys and two girls, all alive and apparently well. The mother is but sixteen years old, and this is her first venture. The prospects of her having a large family seem to be exceptionally good.

He has not found it. — The report that Dr. Koch's recent experiments with a "new antituberculosis liquid," not administered by injection like lymph, but by inhalation, have shown marvellous efficacy, is pronounced untrue.

A Bullet-Proof Dress. — A good deal of speculation has been aroused in Europe by the report that a dealer in cloth has invented a bullet-proof material. The coat, which would be a little over half an inch thick, weighs only six pounds. Billroth points out that protecting the body only and not the limbs will by no means do away with the dangers of battle. It does not sound probable that material of this weight and thickness could possibly be made to resist the enormous velocity of modern bullets.

A Glasgow physician is the defendant in a curious breach-of-promise case. His courtship was progressing smoothly enough until his *fiancée* requested his services for treatment of a fistula. The trouble was of tuberculous origin. He treated the case, but lost his affection for the fair but unfortunate patient. Perhaps if he loses his case, he can offset the damages by a bill for professional services.

BOSTON AND NEW ENGLAND.

Lectures by Dr. H. C. Wood. — The remaining lectures by Professor Wood will be on the following subjects: May 4th, "Cardiac Depressants"; May 11th, "Opium"; May 18th, "Belladonna."

Another Typhoid Epidemic Due to Milk-Cans. — The epidemic of typhoid fever which suddenly appeared last July in Springfield, Mass., has been traced to the milk-supply. It appears that at one farm from which about two hundred quarts of milk were daily sent into Springfield there had been a case of typhoid fever in March. This farm and dairy was as well kept as the average dairy farm of the State. The milk, however, after being placed in the cans was set, for the purpose of cooling it, in a shallow well which had been sunk near the barn for the sole purpose of refrigerating the milk. The cans were made to hold ten quarts of milk, and were stopped by hard-wood plugs. These plugs were driven in as tightly as possible, but it was noticed that the older cans had become battered about the neck and when inverted that the milk readily escaped. All the cans were sunk under several feet of water at the bottom of the well. It was evident that if these cans remained long in the water more or less contamination must occur, as the water was very foul and full of bacteria of various kinds. The excreta from the person who suffered from typhoid fever at the farm in the month of March were transferred, without adequate disinfection, to the common privy, and thereafter, removed to a tobacco-field, and became a part of the material used for fertilizing the ground. It appeared that the farmers commenced to work the tobacco in the latter part of June, and that after working in the field they were accustomed to go to the well and pump from it a tubful of water. Over the well were loose planks covered with earth and dirt from their boots, and the splashing and overflow from the pump would daily wash some of this loose material into the well. It was evident then how typhoid germs *might* have travelled from the house to the milk-cans. This milk was purchased by a corporation in Springfield, and by them sold, with other milk, to the retail dealers. It appeared from their books that the larger part of this milk must have been purchased by the dealer who supplied the infected families.

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[4] Lancet, April 18, 1891.

NEW YORK.

The College of Pharmacy. — The sixty-third annual commencement of the College of Pharmacy took place at Carnegie Music Hall on April 26th, when there were nearly 140 graduates. Addresses were made by Prof. Samuel W. Fairchild, Ph.G., and the Rev. Dr. E. S. MacArthur.

Exhibitions of Cholera Bacilli. — Dr. J. H. Gottlieb, Professor of Microscopy in New York Medico-Legal Laboratory, having recently exhibited some cholera bacilli at the American Museum of Natural History, the matter was reported to the Board of Health, and Dr. H. M. Briggs, pathologist to the Board, was asked to make an investigation. On his report the Board passed a resolution at its meeting April 26th prohibiting public exhibitions of such bacilli in the future.

The Mortality of the City, which was so unusually high during the greater part of March and April, has of late shown a gratifying decline, and during the week ending April 29th the number of deaths reported was only six above the average for the corresponding week of the past five years. Pneumonia has proved notably less fatal, and the deaths from it showed a decrease of 85 from the preceding week. Typhus fever still continues to prevail to some extent, and there were four more deaths from it than in the week ending April 22d.

Miscellany.

ANNUAL REPORT OF THE BOSTON LYING-IN HOSPITAL.

During the past year the number of women received and treated at the hospital has been 500, a decrease of 27 from the number treated during the preceding year. This decrease may be accounted for by the more limited number of patients from a distance, who under ordinary circumstances are not received as free patients; and fewer exceptions to this rule have of late been made.

The daily average number of patients in the hospital has been 23.1, being an increase over that of last year, which was 22.4. The average stay of patients in the hospital has been 16.9 days, an increase also over that of last year, which was 15.4.

The number of out-patients treated was 1,079, an increase of 344 over the number treated last year.

The total number of patients has therefore been 1,579, an increase of 317 over that of last year.

The current general expenses of maintaining the hospital proper was $15,636.52; the cost of the out-patient department was $406.35; and other current general expenses have amounted to $353.70, making the total cost of carrying on the hospital for the year, $16,396.57.

The average cost of each house-patient treated has been $31.98, an increase over last year of $7.55. The cost per week for each patient has been $13.23, an increase over last year of $2.13. The average cost of each out-patient has been a fraction under thirty-eight cents.

The income from paying patients during the year has amounted to $2,125.50, from fees, etc., $432.42, from cash donations $3,995, and from invested funds $7,976.85, a total current income of $14,529.77. In addition to this the treasurer has received as interest, from temporary loans of the portion of the building fund remaining in his hands to meet the accruing payments to the contractors, $2,163.73. The total income from all sources has therefore been $16,693.50.

The number of patients who have contributed to the expense of their maintenance has been 114, being a slight increase over last year. The total amount thus paid has been 2,122.50, an average of $18.64 being paid by each paying patient. Last year, the total amount paid was $1,958, an average of $17.80 by each paying patient.

No changes have occurred in the medical staff: but the number of house-officers has been increased from two to three, and the term of service has been extended from four to six months.

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A PATENT MEDICINE ACT.

The following proposed legislation in Massachusetts is worthy of careful study:

An Act relative to the Sale of Proprietary Medicines or other Compounds sold by Pharmacists.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. The provisions of chapter two hundred and nine of the acts of the year eighteen hundred and eighty-eight shall not apply to proprietary medicines or other compounds sold by pharmacists, except as hereinafter provided. When the State Board of Health is satisfied from knowledge, obtained after due and proper investigation, that a proprietary medicine contains the poisonous ingredients mentioned in said act, in such quantities as to be dangerous to the public health, said board shall cause notice, stating that such medicine contains poisonous ingredients and comes within the provisions of said chapter two hundred and nine of the acts of the year eighteen hundred and eighty-eight, to be published once a week for three successive weeks in at least two newspapers in each county of the Commonwealth, and shall also send by mail, postpaid, to each dealer in such proprietary medicine in the Commonwealth known to said board; and thereafter any dealer who, having received such notice by publication or otherwise, sells such proprietary medicine without the label required to be affixed to poisons by said act, shall be liable to the penalties therein provided.

SECT. 2. This act shall take effect upon its passage.

The twenty-eight county newspapers mentioned in this bill will derive a pretty good revenue from the State, if the patent medicine industry continues to flourish in the future, as it does at present.

The last clause presupposes a degree of honesty on the part of defendants, which such defendants are not often found to possess in the face of a criminal prosecution. The government must necessarily prove that the defendant received a notice in order to maintain its case.

◆

BLACK TONGUE.

THE condition in which the dorsum of the tongue is more or less covered by a black patch is not very uncommon.[1] It has been called "hyperkeratosis," with the idea that the superficial layer of epithelium becomes hypertrophied, undergoing horny degeneration, with atrophy of some of the cells and a development of black pigment. Drs. Ciaglinski and Hewelke, writing in the *Kronika Lekarska*, describe a case in which they were able to find a mould in the black patch somewhat resembling mucor rhizopodiformis, which contained black pigment. The case was that of a woman who a fortnight previously had had some kind of feverish attack — most probably influenza. The tongue looked as if it had been covered with blacking, the discoloration extending as far back as the circumvallate papillæ. By means of borax washes the tongue became clean in a couple of days. Examination showed a black mould which could be well cultivated on bread or on potatoes at the temperature of the room, but which did not grow at 37° C. It was apparently of a harmless character, for it was injected into the veins of rabbits without effect. They distinguish two kinds of black tongue — the chronic, due to anatomical changes in the epithelial layer, and the acute, which depends upon the presence of a mould. This is harmless apparently to internal organs, as it does not develop at the temperature of the body.

◆

RUNNING AMUCK.

THIS peculiar form of madness, which occurs among the inhabitants of the Malay peninsula, is described by Dr. Ellis.[2] Fright, grief, brooding over imaginary wrongs, the sight of blood (especially the person's own), and a peculiar state of nervous depression are the exciting causes. During the paroxysm the patient rushes through a crowded street, stabbing right and left. The outbreak may last from a few hours to a few days; and after it is over there is no remembrance of it, except that the patient's head felt giddy, and that everything appeared either red or black. The author believes that in some Malays strong emotions bring on explosions in the motor portions of the cerebral cortex, the result of which is an unconscious paroxysm of homicidal mania. The subjects seem entirely unable to restrain themselves, and should not be held responsible for any action that they may commit. But, on the other hand, there are some who from some cause or other wilfully work themselves into an uncontrollable rage, and then "run amuck," although at the time they are unconscious of their actions. Such are at least partially responsible. A verdict of "not guilty" was recently awarded in a case of double murder, in Paris, the case being a Malay liable to this form of insanity. Having become very much angered at his wife and her family, he killed them both and wounded another and then defied the world, but soon repented and became overwhelmed with remorse. Whether it would be safe to follow this precedent of law to any extent in our northern cities admits of serious doubt.

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VISCERAL TUBERCULOSIS IN LEPROSY.

DR. BEAVEN RAKE, the medical superintendent of the Trinidad Leper Asylum, has studied the tuberculosis found in cases of leprosy.[1] For some time past it has been well known to observers that tubercles generally diffused through the viscera and often breaking down into large cavities in the lungs are frequently found in necropsies on lepers. Caseous bronchial and mesenteric glands are also by no means uncommon. Speculation has naturally been aroused as to the nature of these tubercles, and various opinions have been expressed.

By the insertion of this tuberculous tissue in guinea-pigs the author has obtained interesting results. Attempts to inoculate guinea-pigs with leprosy have always failed, and it therefore seems justifiable to conclude that all these guinea-pigs suffered from tuberculosis set up by inoculation with tuberculous material from the lungs of lepers.

There remains a much larger question, Are leprosy and tuberculosis due to the same bacillus, modified perhaps in the case of the former by some difference of environment? This theory was advanced tentatively by Danielssen some time ago, and certainly every year the difficulty in differentiating the two bacilli seems to increase. They respond to almost the same color tests and the alleged difference in size cannot be relied on if, as Danielssen asserts, leprosy bacilli from Spain are larger than those from Norway. Dr. Rake has already called attention to the frequency with which in cases of tuberculated or mixed leprosy there is rapid absorption of cutaneous tubercles during the last few weeks of life. In these cases the necropsy shows the viscera to be full of miliary and yellow tubercles.

The present position may be stated as follows: Inoculation experiments have shown that the visceral nodules in lepers are tuberculous and not leprous. It is quite possible that leprosy and tuberculosis may be caused by the same bacillus, but this has not yet been proved.

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[1] Lancet, March [illegible].

[2] [illegible] Medical Journal, March.

[1] Lancet, April 1st.

METEOROLOGICAL RECORD,

For the week ending April 22, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date	Barometer Daily mean	Thermometer Daily mean	Thermometer Maximum	Thermometer Minimum	Relative humidity 8.00 A.M.	Relative humidity 8.00 P.M.	Relative humidity Daily mean	Direction of wind 8.00 A.M.	Direction of wind 8.00 P.M.	Velocity of wind 8.00 A.M.	Velocity of wind 8.00 P.M.	Weather 8.00 A.M.	Weather 8.00 P.M.	Rainfall in inches
S..16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.E.	[illegible]	[illegible]	[illegible]	[illegible]	
M..17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	N.	[illegible]	[illegible]	[illegible]	[illegible]	
T..18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	12	1	O	C	
W..19	30.01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	N.	[illegible]	12	C	C	
T..20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	E.	13	[illegible]	O	R	[illegible]
F..21	29.87	[illegible]	[illegible]	[illegible]	100	92	96	E.	E.	[illegible]	15	R	O	[illegible]
S..22	29.78	[illegible]	[illegible]	[illegible]	92	[illegible]	[illegible]	N.E.	N.W.	4	[illegible]	O	O	[illegible]

[illegible] R., rain [illegible] ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 22, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	[illegible]	358	11.70	28.80	1.08	[illegible]	1.71
Chicago	[illegible]	—	—	—	—	—	—	—
Philadelphia	1,092,168	474	[illegible]	[illegible]	[illegible]	2.31	[illegible]	[illegible]
Brooklyn	[illegible]	[illegible]	166	10.08	24.99	.21	[illegible]	[illegible]
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	11.76	36.12	1.26	3.36	[illegible]
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	[illegible]	[illegible]	41	12.46	24.03	5.34	[illegible]	—
Cleveland	[illegible]	113	[illegible]	[illegible]	—	[illegible]	[illegible]	—
Pittsburg	[illegible]	[illegible]	[illegible]	14.42	21.63	—	2.06	—
Milwaukee	[illegible]	69	[illegible]	[illegible]	[illegible]	1.45	[illegible]	[illegible]
Washington	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.66	.83	—
Nashville	[illegible]	31	11	6.46	22.61	—	—	—
Charleston	56,048	[illegible]	[illegible]	—	—	—	—	—
Portland	[illegible]	17	[illegible]	—	[illegible]	—	—	—
Worcester	92,313	31	15	12.92	25.84	[illegible]	[illegible]	—
Lowell	[illegible]	48	10	12.48	16.64	4.16	2.08	—
Fall River	82,128	44	11	13.62	20.43	[illegible]	2.27	6.81
Cambridge	[illegible]	[illegible]	12	[illegible]	[illegible]	—	2.70	—
Lynn	[illegible]	13	2	—	[illegible]	—	—	—
Springfield	[illegible]	29	9	[illegible]	[illegible]	—	—	3.45
Lawrence	[illegible]	—	—	—	—	—	—	—
New Bedford	[illegible]	[illegible]	11	9.10	9.10	—	[illegible]	[illegible]
Holyoke	40,099	—	—	—	—	—	—	—
Brockton	32,783	[illegible]	[illegible]	12.50	[illegible]	—	—	[illegible]
Salem	31,495	17	[illegible]	11.76	17.64	—	—	—
Haverhill	30,065	9	6	—	44.44	—	—	—
Chelsea	29,479	[illegible]	1	—	18.18	—	—	—
Malden	[illegible]	14	[illegible]	14.28	14.28	—	—	—
Newton	[illegible]	6	2	—	—	—	—	—
[illegible]	26,464	12	—	[illegible]	75.00	8.33	—	—
Gloucester	26,008	7	[illegible]	—	—	—	—	—
Fitchburg	25,444	7	1	14.28	[illegible]	—	—	—
Waltham	20,942	[illegible]	1	—	[illegible]	—	—	—
Quincy	18,669	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—
Pittsfield	18,294	[illegible]	2	33.33	66.66	—	—	—
Northampton	[illegible]	[illegible]	—	—	20.00	—	—	—
Everett	[illegible]	[illegible]	2	—	66.66	—	—	—
Newburyport	[illegible]	6	1	—	—	—	—	—
Amesbury	[illegible]	1	[illegible]	—	—	—	—	—

Deaths reported 3,227: under five years of age 1,032; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 357, [illegible] diphtheria and croup 116, typhoid fever 47, scarlet fever 45, diarrhœal diseases 43, cerebro-spinal meningitis 30, whooping-cough 28, measles 25, erysipelas 13, malarial fever 7, small-pox 3.

From typhoid fever Philadelphia 11, New York 10, Pittsburgh 5, Boston 4, Washington and Lowell 3 each, Cleveland 2, Brooklyn, Cincinnati, Milwaukee, Nashville, Fall River, Springfield, Salem, [illegible] 1 each. From cerebro-spinal meningitis New York 16, Brooklyn 6, Washington 3, Worcester 2, Brockton, Malden and Brookline 1 each. From whooping-cough New York and Philadelphia 8 each, Brooklyn 6, Cincinnati 2, Nashville, Fall River, Springfield and Salem 1 each. From measles [illegible], New York [illegible], Boston and [illegible], and Quincy 1 each. From [illegible] New York [illegible].

In the thirty-three greater towns of England and Wales, with an estimated population of [illegible], for the week ending April 15th, the death-rate was [illegible]. Deaths reported [illegible] [illegible] 122, whooping-cough 110, diphtheria 64, scarlet fever 47, diarrhœa 42, fever 21, small-pox [illegible] Manchester and Bradford [illegible].

The death-rates ranged from [illegible] Derby, Birmingham [illegible], 20.2, Leeds 24.6, Leicester 20.0, Liverpool 27.1, London 20.4, Manchester 26.0, Norwich 15.0, Portsmouth 17.1, Salford 23.8, Sheffield 19.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL [illegible], TO APRIL 28, 1893.

The leave of absence granted **Lieut.-Col. Charles C. Byrne**, deputy surgeon-general, U. S. A., is hereby extended one month.

Captain Wm. P. Kendall, [illegible], from duty at Fort Douglas, Utah, and ordered to Willets Point, N. Y., for duty.

Captain Wm. F. Carter, assistant surgeon, is relieved from duty at Willets Point, N. Y., and ordered to Fort Sill, Oklahoma Territory, for duty.

Captain B. D. Taylor, assistant surgeon, is relieved from duty at Fort Sill, Oklahoma Territory, and ordered to Fort Bliss, Texas. Par. 14, S. O. No. 89, A. G. O., April 21, 1893.

Captain Wm. O. Owen, Jr., assistant surgeon, is relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Bayard, New Mexico, for duty.

Captain Edward T. Comegys, assistant surgeon, is relieved from duty at Fort Bayard, New Mexico, and ordered to Fort Wadsworth, New York, for duty.

Captain A. S. Polhemus, [illegible] duty at Fort Monroe, Va., and ordered to report at Fort Douglas, Utah, for duty. Par. 14, S. O. 89, A. G. O., April 21, 1893.

Captain Wm. B. Banister, assistant surgeon, is relieved from duty at Washington Barracks, D. C., and ordered to Fort McIntosh, Texas, for duty.

Captain George McCreery, assistant surgeon, is ordered to Fort Sidney, Nebraska, for duty.

Captain Louis S. Tesson, assistant surgeon, is relieved from duty at Fort Sidney, Nebraska, and ordered to Jefferson Barracks, Mo., for duty. Par. 14, S. O. 89, A. G. O., April 21, 1893.

Leave of absence for one month on surgeon's certificate of disability, with permission to leave the limits of the department, to take effect when Assistant Surgeon **Ware** shall have returned to Fort Supply, Indian Territory, is granted **Captain Marlborough C. Wyeth**, assistant surgeon, U. S. A.

Leave of absence for twenty days, to take effect after May 1, 1893, is hereby granted to **Major Ezra Woodruff**, surgeon, U. S. A.

First-Lieut. Francis A. Winter, assistant surgeon, U. S. A., is relieved from duty at Fort Wingate, New Mexico, and will report in person to the senior commissioner of the International Boundary Survey Commission at Yuma, A. T., for duty, relieving **First-Lieut. Harlan E. McVay**, assistant surgeon.

First-Lieut. McVay, on being relieved by **First-Lieut. Winter**, will report in person to the commanding officer, San Carlos, A. T., for duty at that station, relieving **Captain Paul Shillock**, assistant surgeon. Captain Shillock, on being relieved by First-Lieut. McVay, will report in person to the commanding officer, Fort Wingate, New Mexico, for duty at that post.

PROMOTION.

First-Lieut. Ogden Rafferty, assistant surgeon, to be assistant surgeon, with the rank of Captain, from March 26, 1893, after five years' service, in conformity with the act of June 23, 1874.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 29, 1893.

J. H. Clark, medical director, ordered as President, Naval Medical Examining Board.

A. A. Hoehling, medical director, detached as President, Naval Medical Examining Board, and placed on waiting orders.

L. L. von Wedekind, passed assistant surgeon, detached from U. S. Receiving-ship "Wabash" and to the U. S. S. "Alliance."

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, May 8, 1893, at the Medical Library, 19 Boylston Place, at 8 o'clock, P. M.

Dr. J. H. McCollom: "Typhoid Fever in Boston."

Dr. Charles Harrington: "The Present Condition of the Boston Water-Supply."

Dr. S. H. Durgin: "The Sanitary Condition of Boston."

John T. Bowen, M.D., *Secretary*.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, May 10th, at 8 o'clock, P. M.

Papers: "Malignant Endocarditis," Dr. G. M. Garland.

"A Case of Dysphagia with Dilatation of the Œsophagus and Pneumatosis," Dr. G. Liebmann.

F. C. Shattuck, M D., *Chairman*.

Henry Jackson, M.D., *Secretary*.

The Colorado State Medical Society. — The twenty-third annual meeting will be held in Denver, June 20, 21 and 22, 1893.

A. S. Lobingier, M.D., *Corresponding Secretary*.

AMERICAN GYNECOLOGICAL SOCIETY.

Programme of the Eighteenth Annual Meeting to be held in the College of Physicians, Philadelphia, on May 16, 17 and 18, 1893.

Tuesday, May 16th.

(1) Abdominal Fistula after Cœliotomy; its Prevention and Treatment. By Dr. Paul F. Mundé, of New York. (2) A New Operation for Uterine Fibroids, with Report of Cases. By Dr. Franklin H. Martin, of Chicago. (3) A Further Report upon Supra-vaginal Hysterectomy by the New Method. By Dr B. F. Baer, of Philadelphia. (4) Two Cases of Supra-vaginal Hysterectomy by Baer's Method. By Dr. Archibald MacLaren, of St. Paul. (5) Congenital Dilatation of the Urethra. By Dr. William H. Baker, of Boston. (6) Operations upon the Uterine Appendages with a View to Preserving the Functions of Menstruation and Ovulation. By Dr. William H. Polk, of New York. (7) The Treatment of Septicæmia with Oxygen. By Dr. Andrew F. Currier, of New York. (8) Puerperal Eclampsia; the Experience of the Boston Lying-in Hospital during the last Seven Years. By Dr. Charles M. Green, of Boston. (9) A Case of Inversion of the Uterus. By Dr. Edward P. Davis, of Philadelphia. (10) Ovarian Tumors Obstructing Pregnancy. By Dr. A. F. A. King, of Washington.

The President's Address will be delivered at 8 p. m.

Wednesday, May 17th.

(11) Membranous Dysmenorrhœa. By Dr. Thaddeus A. Reamy, of Cincinnati. (12) The Operative Treatment of Uterine Fibro myomata. By Dr. Hermann J. Boldt, of New York. (13) The Dangers and Complications of Uterine Fibroids. By Dr. S C. Gordon, of Portland, Me. (14) Internal Crossing of the Ovum. By Dr. Henry C. Coe, of New York. (15) Hystero-epilepsy: Report of Seven Cases cured by Cœliotomy. By Dr. H. Marion Sims, of New York. (16) The Operative Treatment of Prolapsus Uteri et Vaginæ. By Dr. George M Edebohls, of New York. (17) The Origin of Dermoid Tumors of the Ovary. By Dr. Arthur W. Johnstone, of Cincinnati. (18) The Pathology and Treatment of Injuries of the Pelvic Floor. By Dr. Alexander J. C. Skene, of Brooklyn. (19) The Elastic Ligature *versus* the Wire Serre-nœud in Supra-vaginal Hysterectomy. By Dr. R. Stansbury Sutton, of Pittsburgh. (20) The Surgical Treatment of Abortion. By Dr. Egbert H. Grandin, of New York.

Executive meeting, with closed doors, at 8 P. M.

Thursday, May 18th.

(21) Clinical Report of Cases of Pyosalpinx treated by Uterine Drainage, with Subsequent Conception. By Dr. Robert A. Murray, of New York. (22) Vaginal Enterocele in Pregnancy and Labor. By Dr. Barton C. Hirst, of Philadelphia. (23) Calcified Tumors of the Ovary. By Dr. J. Whitridge Williams, of Baltimore. (24) The Results of Aseptic Cœliotomy. By Dr. William H. Wathen, of Louisville. (25) The Uterine Curette. By Dr. William H. Parish, of Philadelphia. (26) Retention of Menstrual Fluid in Cases of Bicornate Uterus. By Dr. Charles J. Cullingworth, of London, Eng. (27) Some Elements of Success in Cœliotomy. By Dr. A. Lapthorn Smith, of Montreal, Can. (28) Practical Methods in Dress Reform. By Dr. Robert L. Dickinson, of Brooklyn. (29) In Memoriam – Dr. A. Reeves Jackson. By Dr. Henry T. Byford, of Chicago. (30) In Memoriam – Dr. Charles P. Strong. By Dr. Egbert H. Grandin, of New York.

Physicians are cordially invited to be present.

Theophilus Parvin, *President*, Philadelphia.

Henry C. Coe, *Secretary*, New York.

RECENT DEATH.

Benjamin S. Shaw, M.D., M.M.S.S., died yesterday in Boston, after a short illness.

BOOKS AND PAMPHLETS RECEIVED.

The Creation of God. By Jacob Hartmann, M.D. New York. 1893.

What is Man's Natural Food? By Charles E. Page, M.D. Reprint. 1893.

Transactions of the American Pediatric Society, Fourth Session, Boston, 1892.

The Clinical Examination of Breast-Milk. By L. Emmett Holt, M D. Reprint. 1893.

Fifteenth Annual Report of the Board of Health of the City of Lowell for the Year 1892.

Third Biennial Report on the Vital Statistics of Minnesota for the years 1890-91. Minneapolis. 1893.

Thirty-second Annual Report of the Cincinnati Hospital for the Fiscal Year ending December 31, 1892.

Fonctionnement de la Maison D'Accouchements Bandelocque: Année 1892. Dr. G. Lepage, Paris. 1893.

The Treatment of the Insane Outside of Asylums. By Frederick Peterson, M.D., of New York. Reprint. 1893.

Ripening of Immature Cataracts by Direct Trituration. By Boerne Bettmann, M.D , Chicago. Reprint. 1893.

Methods of Precision in the Investigation of Disorders of Digestion. By J. H. Kellogg, M.D. Battle Creek, Mich.: Modern Medicine Publishing Co. 1893.

An Introduction to the Study of Diseases of the Skin. By P. H. Pye-Smith, M D., F.R.S., Physician to Guy's Hospital. Philadelphia: Lea Brothers & Co. 1893.

Naphey's Modern Therapeutics, Medical and Surgical. Ninth edition. Vol. II. General Surgery, Gynecology and Obstetrics. Philadelphia: P. Blakiston & Son. 1893.

System of Diseases of the Ear, Nose and Throat. Edited by Charles H. Burnett, A.M., M.D. Vol. I. Illustrated. Complete in two volumes. Philadelphia: J. B. Lippincott Co. 1893.

Modern Gynecology, A Treatise on Diseases of Women. By Charles H. Bushong, M.D., Assistant Gynecologist to the Dewitt Dispensary, New York, etc. New York: E. B. Treat. 1893.

The International Medical Annual and Practitioner's Index for 1893. Edited by thirty-eight department editors. P. W. Williams, M.D., Secretary. Eleventh year. New York: E. B. Treat.

Original Investigations in Cattle Diseases in Nebraska. Southern Cattle Plague. Third edition. By Frank S. Billings, Director of the Patho-Biological Laboratory of the University of Nebraska.

The Elements of Human Physiology. By Ernest H. Starling, M.D., M.R.C.P., Joint Lecturer on Physiology at Guy's Hospital, London. Philadelphia: P. Blakiston, Son & Co. 1893. Reprint. 1892.

Clinical Lectures on Abdominal Hernia, Chiefly in Relation to Treatment, Including Radical Cure. By William H. Bennett, F.R.C.S., Surgeon to St. George's Hospital, etc. London: Longmans, Green & Co. 1893.

Hospitals, Their Work and Their Obligations, the Valedictory Address Delivered at the Commencement Exercises of the Miami Medical College, Cincinnati, March 30, 1893. By N. P. Dandridge, M.D. Cincinnati: Robert Clark & Co. 1893.

Report of Cases of Moral Imbecility, of the Opium-Habit and of Feigning, in which Forgery is the Offence Committed. Traumatic Myelitis; A Clinical Lecture delivered at the Arapahoe County Hospital, October 1, 1892. By J. T. Eskridge, M.D., of Denver, Col. Reprints. 1893.

The Therapeutical Value of the Mercurial Salts in General Surgery. Something More on the Pathology and Treatment of Hemorrhoids, Fissures, Fistulas and Ulcers in the Ano-Rectal Region, with a few Notes on Prolapsus-Ani and Neoplasm. By Thomas H. Manley, M.D., New York City. Reprints. 1892.

Archivo della Scuola D'Anatomia Pathologica, diretto dal Prof. Giorgio Pellizzari. Volumi III e IV. Osservazioni Continue della Elettricità Atmosferica Memoria di Dott. Franco Magrini; L. Pasqualini ed A. Ròiti. Saggio Sperimentale, Sul Meccanismo dei Movimenti Voluntari, nella Testuggine Palustre, del Dott. Giulo Fano. Firenze, Col Tipi dei Successori le Mounier. 1884-85-86-88.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-book, specially adapted for Students of Pharmacy and Medicine. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, Baltimore, and Professor of Chemistry in the Maryland College of Pharmacy. Fourth edition. Philadelphia: Lea Brothers & Co. 1893.

Lecture.

LECTURES ON SURGERY.

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VII.

FRACTURES.

It seems to be quite well proved that in the repair of broken bone the amount of reparative material that is thrown out is directly proportionate to the displacement of the ends; that if the bone is broken square across, is not pulled out of place, if the ends lie in contact, if nothing has occurred to distort the limb, then the amount of reparative material thrown out to mend the break and establish new bony union is extremely small; but if displacement occurs, that nature makes a greater and greater effort to repair the injury by throwing out large quantities of what used to be called provisional callus. This callus is a soft material which cements together and covers over the broken ends of the bone; unites them by an adhesive and pretty firm material, which finally undergoes certain changes. Hence the name provisional callus, meaning not a permanent callus, but a temporary one. This provisional callus is finally reabsorbed; so that although the patient on first getting well from his fracture and going about has an enormous lump over the seat of the fracture, after a few months, or a year or two, it is almost all gone; it tapers out into a smooth spindle-shaped enlargement, which is not very noticeable under the muscles. The outer part of the callus is absorbed; and only that part remains permanent which was necessary to hold the bones together. This seems to be a law of nature. No displacement, little callus; great displacement, immense callus; provisional or temporary, that is, to be absorbed, after a while.

Where does this material come from? Great disputes have occurred with regard to this point; some people, thinking that the periosteum was the feeding membrane of the bone, the part that nourished it, argued that the periosteum was the membrane which furnished all the elements of repair. Others have proved by investigations that there are a great many other sources from which this reparative material comes: that it is poured out from the Haversian canals, from the broken surface of the interior of the bone itself; that it comes from the medullary cavity we know, because how otherwise could a fractured bone unite solid all through, and have its central shaft restored at a very much later day? It must then be partly formed by the membrane — "endosteum," I sometimes call it — of the medullary canal, or the inner periosteum; it must be formed partly by that. We know it is thrown out by the Haversian canals themselves; and we know also, of course, that it is largely supplied by the periosteum outside. More than that, some authorities go so far as to assert, as the result of experiments on the lower animals, that the neighboring tissues are capable of throwing out reparative material; for instance, the neighboring blood-vessels, etc., as well as the periosteum, bone surface, medullary membrane and Haversian openings. Probably from all these sources, then, reparative material comes.

Now it is a very curious fact that some bones unite with a very little callus, no matter whether displaced or not. This is especially true of the lower jaw and ribs. Fracture of the lower jaw has very little provisional callus thrown out to mend it; but union mostly takes place from surface to surface without much subsequent irregularity, or nodulation, so to speak, of the surface of the bone. The same is true of the rib. Other bones, which are not bones really, that is, they are not bones in the sense of having all the functions of bones, but are called sesamoid bones, inasmuch as they are merely osseous developments in the sheaths of the tendons; other bones of this class, such as the patella more particularly, cannot succeed after a fracture in reuniting by bone, unless the process is assisted by wiring the bones together; but if left to the natural processes of nature, a fracture of the patella does not unite by bone, never passes beyond the ligamentous stage.

Bones shorten when they join. That is an important point. The amount of shortening depends upon the obliquity of the fracture, the amount of displacement, etc. Bones shorten, however, when they join, although the fracture be transverse. How is this? Because in the majority of cases of transverse fracture the fragments are not afterwards put in perfect position, and although they may be broken square across, still they become displaced from muscular action in the majority of cases, and shortening takes place. It seems to be a universal rule that in fractures of the lower extremity shortening takes place in the repair of a break. This is especially true of the femur (where it is most noticeable) and the tibia (where it is not so noticeable). If, however, only one bone of the lower leg be broken, if the tibia alone be broken, and the fibula remain unbroken, then you must see that the opportunity for shortening to occur is very much reduced, that the fibula answers as a splint to the tibia, holds at full length the limb, and allows the bone to repair. You will also notice that shortening in breaks of the upper extremity would be much more likely to be overlooked and not detected than it would be in fractures of the lower extremity, because it does not matter if one arm is one-half or three-fourths inch shorter than the other, if it is strong and useful. More than three-fourths of an inch in the lower extremity entails first a limp, then tilting of the hips, and then curvature of the spine and deformity of the whole length of the spinal column.

At first the reparative material is thrown out in soft condition; then it hardens down into something resembling cartilage; finally it becomes bone. It is said by some authorities that it does not always pass through the cartilaginous stage, but passes more directly from the soft state to that of the forming of bone salts and bone cells. In the ordinary run of fractures you will find that there is a very great difference in the time that must elapse in the union of a bone like the femur, so that it is reasonably strong and useful and firm. Such union takes place in the femur in six to eight weeks; but the deposition of bone salts and the restoration of the bone itself, is a matter of many months; and sometimes is not completed under six months.

To what is the shortening due? If a bone is broken off and has not much to knock it out of place, why should it so obstinately go out of place as it does? We can only explain this on the theory of muscular contraction; and just how the bone is going to be dis-

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[illegible]

placed, in what direction the two ends are going depends of course upon the very complicated attachment and energy of the muscular fibres which surround the limb. In the femur, for instance, the bone is surrounded by an immense mass of powerful muscles. It is a small bone, but it is buried very deeply beneath a large mass of flesh and muscles. The muscles mostly pull in a longitudinal direction, up and down. At the upper end the rotators twist the fragments in various directions, and even the psoas and iliacus tilt the fragment upwards and outwards. Muscular contraction makes the displacement; and it is greater of course where there is but one bone as the femur or the humerus, than it would be where there are two; and the direction in which the fragments will go when they ride by each other depends entirely upon the way in which the muscles happen to pull. Hence, of course, a cardinal point of treatment is to restore the bone to its natural position. The limb must be drawn until the two ends of the bone are put in position, and held so; and the muscular contraction must be overcome in some way. This was done in former times partly by splints compressing the muscles, and partly by various apparatus which acted by means of the screw. In modern times we use extension, the pulley and weight to overcome the contraction of the muscles and draw the part down.

Bones join whose ends are not brought in contact. We see this in cases of fracture of the femur that have occurred and apparently never been treated at all. They will join finally; but with the fragments drawn by each other in the most extraordinary directions. Yet nature will bridge the whole thing over, without the ends of the bone ever coming in contact at all. We see the same thing in the lower animals. We know that a chicken, a young dog, or a lamb will run about with a broken leg dangling, and in a few weeks it will join, with the fragments far up, ridden by each other, and yet it will be solid. Nature accomplishes the same thing in man, but by longer effort.

Sometimes it happens that perfect union does not occur. Those are the cases that are called non-union of fractures. It is, however, rather a false use of words I think, inasmuch as non-union of a fracture never occurs. The fracture always unites, but the point is this, that the cases that are called non-union should rather be called, I think, imperfect union, that is to say, the bones join by a plastic material, but the material never passes beyond the plastic stage, never hardens into cartilage, never ossifies into bone, and the bones are merely fastened together by a soft, flexible material which makes what is called a false joint. Now the bones may be so ridden over each other and deformed that the false joint allows the bones to play about each other like the two pieces of a flail, or play upon each other by a species of false socket. Those are what are called ununited fractures. They are ununited by bone, but they are united by other material. I wish to impress upon you the fact that some sort of union always takes place. With persistent care and judicious measures to assist, almost all the cases of imperfect union, or delayed union of bone can be carried along beyond that stage of imperfect union, and can be made to join in the end. "Non-union," says Hamilton, in his treatise on fractures, "can practically be overcome by patience; and most of these cases, by a proper use of means persisted in long enough, will finally unite by bone."

Nature, then, makes an effort to repair broken bones always. If they are in contact, she has to make very little effort; the reparative material thrown out is small in amount. The callus-lump about the bone, is proportionate to the amount of displacement. If the displacement is small, the callus is small. If the displacement is great, the callus is great. It is not permanent; it is subsequently taken away and absorbed, leaving only enough to support the bone. Nature sometimes fails in carrying out the process, but never fails in securing some union of the bone; she sometimes fails in securing bony union, in which case we have what is called the ununited fracture, which means merely a ligamentous, or fibrous union, instead of a bony union.

No one can doubt, I think, after looking at these specimens of old fractures which I now show you, that nature possesses almost inexhaustible powers of repair, if we give her the slightest chance to put these powers into action. She does not, however, immediately begin to repair the bones on the receipt of an injury, but a considerable time elapses before repair begins, usually from a week to ten days after the receipt of the fracture. This time is consumed in getting over the shock of the injury and restoring the soft parts to their state before the injury, before repair can take place.

Let us consider what must occur when even a simple fracture of a bone like the humerus or the femur takes place. The same violence which broke the bone must necessarily have inflicted first severe injury and bruising on the soft parts, otherwise the bone could not have been reached and broken. Every fracture, even of the simplest kind, must be accompanied necessarily by a great degree of contusion of the soft parts. Contusion means tearing of muscular fibres, laceration, to a certain extent, of tissue, rupture of small vessels, capillaries and veins, sometimes the rupture of nerves, but not often; and much extravasation of blood about the part. In addition to this, there is almost always a badly bruised skin, which after the fracture becomes mottled with spots and ecchymoses, and also becomes blistered in blebs and large serous exudations, which take a week or two to subside after the receipt of the injury. All these damages, then, are extraneous to the fractured bone. In the midst of this seat of destruction and injury lie the two fractured ends, which speedily, on account of the tetanic spasm of the muscles, become drawn by each other, imbedded in the soft parts, pricking all the delicate tissues, rupturing still further veins, setting up most intense nervous excitement by their presence and sharpness, and in that way much aggravating the injury produced at first. Although these bones be promptly reduced, the fracture treated and dressed, it is too much to expect that nature can repair the injury of the bones themselves by plastic material until she has had time to remove the products of effusion and inflammation which takes place in the contused parts around. In proof that a certain condition analogous to inflammation always precedes this repair, we can instance the fact that the bruised parts always swell the first few days after the receipt of the injury. The injury is received, a fracture produced, the soft parts lacerated. At first the limb only appears scarred, and black and blue, but speedily begins to swell. This swelling increases, reaches its height about the third day, stands still a little while; and it is usually six to eight days from the receipt of the injury before the swelling has gone, and the limb has returned to its original size.

The cause of the swelling is an effusion of serum, partly of blood-cells, partly of plastic material in a semi-inflammatory state thrown out into all the neighboring tissues, muscles, fasciæ and cellular interspaces. The skin becomes enormously stretched. The blebs which are formed rupture, and the fluids drench the limb with their secretion. The skin gets irritated and excoriated, and that, together with the increasing blackness and discoloration of the part, due to the slow coming out towards the surface of the effused blood from the deep vessels which have been ruptured, constitute a limb which sometimes looks as if it could hardly recover, and might pass into a state of gangrene and be lost; that is, in a well-marked case of fracture. All this has got to subside. The limb has got to be returned in temperature and size very nearly to the aspect of the other limb before nature can finally take up vigorously the repair of the broken bone. She has got to repair the other things first. The other things are repaired very quickly. Effusions are taken up almost as fast as poured out. Clots lie indolent in the part and eventually are taken away, and finally only a discoloration remains. The ruptured fibres speedily reunite, and, just as in the ordinary bruise, the limb repairs all its soft parts within the first ten to fourteen days; but the bone does not begin to repair until these changes are well under way, and it comes on as a secondary step, a much longer step and more important; but nature cannot undertake it until she has restored the soft parts first.

If, then, a bone is not going to unite or begin to unite under a week to ten days after the receipt of the injury, of what consequence is it, it may be asked, that the limb should be set, or the parts be put in permanent position, until the changes which unite the ends of the bones are about to begin. There are several very important reasons why the earlier the fracture is treated and set the better is the probable prospective result. In the first place, you diminish the amount of nervous shock and pain. The bones drawn into place and held there immediately cease to prick the soft parts and produce that violent tetanic pull of the muscles which is so painful and exhausting. In addition to this, it is much easier to get the ends into position at this time than after a considerable time has elapsed; so that, although we do not expect them to mend at once, the sooner they are set and put in position the better. At the same time this rule must not be held as being too absolute, because in cases which threaten to become sloughing or gangrenous, where the limb swells enormously, as it does in the little child, it is not always safe to put the part in a firm dressing, not allowing for swelling and subsequent extravasation; therefore there are badly lacerated cases where it is wiser, at first, not to attempt to compress the limb, or to hold the bones firmly in position, but to treat it in some soft apparatus in an easy position, relaxed and turned on the side, so that the muscles may not pull strongly. At first treat it by an application containing laudanum, glycerine and dilute alcohol. That is a very good application; laudanum and dilute alcohol (equal parts), and a small proportion of glycerine to make it soft and comfortable to the skin; or a simple evaporating lotion composed of muriate of ammonia, dilute acetic acid and alcohol and water; or a lead wash — something of that kind; putting the limb on the side, not compressing it in any way, covering it with these evaporating lotions and waiting for the swelling to subside. That is not a desirable way to treat a fracture. We do not do it unless we are afraid to use the other method. But there are instances where, if you draw the limb immediately into place and hold it firmly, you will produce such pressure and tightness that the limb will swell and slough badly, and mortification and subsequent amputation may occur. This is no fancied danger. In older times it has occurred a great many times, and I have seen one instance of it myself. This would be especially true in the treatment of fractures of the forearm, where you have a very peculiar state of things as regards the position of the blood-vessels and nerves. The forearm is covered with blood-vessels, and the two bones lie closely together, joined by a firm interosseous membrane, and it is extremely easy, unless caution is used, to get a destructive amount of squeezing upon these tender parts by the application of splints in the early treatment of fracture of the forearm. The swelling parts are confined between the bones and interosseous membrane on the one side and a firm splint on the other. But one result can follow. Neither of these can give way. The tissues die for want of circulation, and a slough is the consequence.

After a week or ten days commences plastic union of the bones. How long does it take to repair them? This varies very much with the locality. The smaller bones unite very quickly; the collar-bone in two to three weeks, the rib in even a shorter time, the lower jaw in sixteen to seventeen days, the tibia in four weeks, and the femur in six weeks. These, of course, are only averages. You cannot apply these, any more than any other rule of statistics, absolutely to any one individual case; but the rule is that union may be expected to take place in about such a length of time, in such a bone.

Does age make any difference? The differences between adult and old age seem to be very slight. The bones of the very aged unite in favorable localities, when broken not too near to joints. They unite very slowly, but there is not much distinction between adult age and old age. There is, however, a great difference in the length of time required to repair a fracture between adult age and childhood or infancy. About one-half the time is required in childhood or infancy to mend a broken bone, that is required in the adult; and the femur, which takes six weeks to unite in the grown person, will unite in two, two and a half, or three weeks at the outside, in the little child.

How often may we fear that what is called non-union will take place? That is a very serious matter because it can hardly occur without reflections in the minds of the patient and his friends upon the care which the patient has received from the surgeon; and they are very prone to think that, inasmuch as other people's bones join, his bones ought to join, if he had had the proper attention paid to them. Statistics prove that ununited fractures fortunately are very rare, about one in five hundred cases; and why they occur in this particular one person out of five hundred we are at a loss to say.

The favorite localities where non-union occurs are, first, the middle of the humerus. That is very apt to fail of union if any bone does; then the femur, and then the tibia. Some bones never fail to unite; the collar-bone, for instance; the jaw almost never; and the radius, near the wrist, almost never fails to unite; but the humerus and the femur sometimes fail. Fanciful reasons have been given for it. I do not know whether there is any truth in them or not; but the position and the distribution of the nutrient artery of the bone have been supposed to have something to do with the want of vigorous repair in the long shaft of the humerus, or the femur. As I have said before, there is not any such thing as non-union. There is always some union, but union of such a soft and flexible character, that in the lower limb it makes a limb useless unless supported by a splint or crutches; and in the upper limb it gives an additional joint between the elbow and the shoulder.

We know that all fractures tend to shorten, some more than others; the oblique fractures more than the transverse, and the long bones naturally more than some of the others, but all tend to shorten. We endeavor to estimate how much the shortening is by measuring. Measuring on the human body with the flesh and the various outlines to deceive us is a very uncertain sort of process; and the only way in which we can approach accuracy is by taking three or four different measurements from different points, taking the mean result, and dividing the error, and estimating by that, just as we should in other mathematical experiments. It is a common thing to measure from the anterior superior spine of the ilium to the inner malleolus. We may measure from the anterior superior spine to the outer malleolus, and from the anterior superior spine to the top of the patella, that is, for fractured femur. A very valuable measurement is from the umbilicus to the internal malleolus. Some, or all of these measurements can be made, their variations divided, and a very close estimate to an accurate result got. I say a very close estimate; we never get it accurate. We never can tell, for example, that there may not have been originally some asymmetry of the limbs, so that one was one-eighth or one-fourth of an inch shorter than the other, from birth. Such asymmetry has been shown by Professor Humphrey and others to be very common; and a perfect man with absolutely symmetrical parts is very rare. Absolute measurements, therefore, to determine positively down to the fraction of an inch the amount of shortening in a fracture are impossible. We can get good approximate measurements, and, fortunately for the result to the patient, anything that is not beyond one-fourth of an inch does not make very much difference in the subsequent utility of the limb, or cause a limp; so that we are not reduced to these minute fractions except as a point of diagnosis; and more especially as a point of diagnosis in trying to estimate the nature of an injury which a middle-aged or old person has received near the neck of the thigh-bone. Such fractures are very much to be judged of by the amount of shortening that occurs; and here the most accurate measurements possible are desirable.

When long bones are broken, the muscles will pull the ends apart and deform the limb. Even in this position, and in all positions, if they are given any chance at all, they will unite, and unite in the end by bone.

What measures of treatment should be adopted to produce good position and to promote union? They are very simple indeed. They are that the limb should be drawn down into place until the ends of the bones match each other and are opposite, and that after they are got there they should be kept in position and kept absolutely still; *apposition* and *immobility*, then, express the two cardinal points in the treatment of fractures. If you can get the ends into their natural places and hold them still a sufficient length of time, they will unite with a good limb; with the least amount of provisional callus, with the least amount of deformity, and with the most symmetrical looking limb.

Now the drawing down must be done by some mechanical force. Usually it is done by the hands of an assistant pulling the upper fragment in one direction, the hands of the surgeon pulling the lower fragment in the other direction, until the length of the limb is restored, and the parts look like the other side of the body. To keep it so, some sort of extension must be kept on, especially in the lower extremity; and that is now done by extending by a weight over a pulley, and a plaster bandage applied over the lower fragment up to the seat of the fracture. In addition to pulling down the part and holding the muscles in this way, we have to contend with the muscles that immediately surround the bone, and must hold them quiet by some different means than the direct extension and counter-extension. This we do by pressing upon the parts themselves — paralyzing the muscles; preventing contraction by firm, direct pressure; by splints, properly padded, and called coaptation splints. The fact is they compress the muscles which surround the fracture, and keep them from slipping the fracture out of place.

Apposition of the broken parts, immobility secured long enough, coaptation, — those are the cardinal points in the treatment of fractures.

Now, perhaps, we had better take up another part of the subject, and enumerate very briefly the different sorts of fractures, describing what we mean by them.

Simple Fracture. — In the first place, the word simple fracture means a bone broken under the muscles and skin, having no access to the air, and being entirely a subcutaneous injury. This simple break is almost sure to have its effused inflammatory products around it absorbed without suppuration, and to be restored to its original state, so that repair of bone will take place without any chance of the formation of an abscess. You may perhaps think it surprising that it is almost sure to. Yet sometimes, even in simple fractures, embolism, septicæmia, and formation of abscesses, do occur, in very feeble individuals, even where there has never been any communication with the external air; and, also, I may add, what I hope none of you will ever see, that I have seen in a severe condition of hospital gangrene prevailing in hospital wards, simple fracture rot the bone without any external break of the skin when the patient was brought in. That condition of foul sepsis we hope can never visit us again so long as we practice antiseptic surgery. The fact that a simple fracture of the tibia, instead of healing in the ordinary way, should melt down in a foul slough, rot in the middle and lead to amputation, without any other injury, is a remarkable illustration of the virulence of the poisons, which, at that time, must have been floating about.

An aseptic fracture absorbs the inflammatory product, heals easily and never suppurates, because shut away from the external air. In the early days of subcutaneous surgery and tenotomy, when the practice was first introduced of cutting the tendons under the skin, no suppuration took place; and it was then found possible to inflict wounds without a chance of their failing of first intention; and subcutaneous surgery enabled surgeons to cut the tendons in cases of club foot and other deformities with impunity, because done under the skin. A little knife was slipped in, the tendon divided; no air, no germs entered, and no suppuration took place. This was subcutaneous surgery. A similar condition of things takes place in simple fracture; and the reason why suppuration does take place in compound fractures, unless they are treated successfully by antiseptics, is the admission of the air, with the various floating spores of germs and low forms of life which it contains.

Compound Fracture. — Compound fracture means that the bone has broken through the skin and communicates with the air. It may have been pushed through; or the same blow which broke the bone may have cut the flesh and lacerated down to the bone. We may find a patient with a small hole through the skin over the tibia, and recognize by moving the limb that there is a fracture beneath. On investigating closely we find that the tibia is broken very obliquely, that a very sharp point projects upwards; and that was the little point which pushed through the skin and has dropped back into place. We may find a patient with a broken femur. On examination it may be found that the fracture is almost wholly transverse, no spiculæ, no sharp points, but leading down to the seat of the fracture is a sinus which goes from the outer air in. In this case the patient fell upon some external object, the bone itself never having been pushed out into the air. It makes no difference as regards prognosis. In either case air has been introduced; is still present in the wound. In either case we can often feel a little emphysema around the fracture; and in either case the fracture is what is called a compound fracture. Compound fracture as distinguished from simple fracture, means a bone broken so that it communicates with the external air.

The word comminuted, when applied to fractures, means that the fragments are broken up into several pieces. It may be simple or compound. It may be broken up into fragments under the skin; or into fragments which communicate with the wound through the skin and with the external air.

Complicated Fracture is a term often used. It means, that, in addition to the break of the bone, there is an injury to some other structure, as a lacerated nerve, torn artery or vein, ruptured muscles, — something of that kind.

Tranverse and *Oblique Fractures*, of course, speak for themselves.

Green stick or *Partial Fracture* is another term which is quite descriptive. It can only occur in the bones of the young where the organic is in excess of the inorganic material, and the bone is flexible, not yet having become fully ossified. In that case, when violence is inflicted on it, it bends and breaks partially, as the green twig bends and partially breaks. The bone preserves its bent form, and when the child with one of these partial fractures is seen, you will find a little roughness at the apex of the fracture, the bone bent down, almost a bow, and still not broken off.

It is almost inevitably the case that in setting such a fracture and drawing the part into place you complete the fracture. You find the same thing occurs in the twig. So that green-stick fractures which are severe enough to require treatment — some of them are not — will be pretty sure to be converted into complete ones by your handling. That is of no consequence; and it is much better to get the limb into shape and symmetrical than allow it to go with a partial fracture, and not corrected.

Some of these fractures are so slight as not to be worth the attention of being pushed back into place. This is especially true of the green-stick fracture of the clavicle. You find no break off, no crepitus. That collar-bone had better be left alone. It will settle down again. It is not much deformed, has not broken off. There will be for a while a lump of callus, which will be absorbed.

Complete and *Impacted Fractures.* — By complete fracture we mean a bone broken entirely across, free motion between the ends, and an additional joint in the limb.

By impacted fracture we mean that the shaft, or some portion of one of the bones, is driven into the cancellous tissue of the other end near an articulation; and this impaction is especially liable to occur in that fracture at the lower end of the radius, about three-fourths of an inch above the joint, known as "Colles's fracture," and at the neck of the femur in middle-aged and elderly people. These are impacted fractures as distinguished from complete ones. Impacted fracture often cannot be diagnosticated; but may be suspected when an unnatural degree of lameness persists after an injury about the joint, where we cannot make out that there has been an absolute fracture — sometimes in the wrist, occasionally in the shoulder. In a few cases, autopsies made at this time, where the patients have happened to die of some other disease, have shown a radiating crack at the carpal end of the radius, where the scaphoid and semilunar bones may have been driven up against the radius in some violent fall. This fracture gives rise to long-continued lameness, and pain, — a stellate fracture.

A most interesting class of fissures occur in the skull, because they are there of more importance, and may or may not mean a crack extending through both tables; and may possibly mean in some cases that the tough outer table has been merely cracked, while the brittle inner table has been splintered up into fragments on the inner side.

Occasionally, bones which have become united in very bad positions, are brought to the doctor to be refractured — broken over, and set straight. This is accompanied always with a good deal of force and difficulty in its accomplishment; it is sometimes very hard to do it. Occasionally the bone gives way in its sound part above the fracture, rather than break through the seat of a large osseus effusion and callus, which has mended the original injury. Moreover, if broken across through the original injury, they are much more slow to join again; and we have got to run a certain amount of risk of non-union, when we meddle with an old fracture of this kind. If the case is brought recently after the fracture, there can be no hesitation in doing this under ether, and expecting a good result; but, as the weeks go by, the chances of accomplishing this become less and less; and after the normal period, so to speak, has long passed when bones join, as three or four weeks for the radius, six to eight for the femur, etc., and we are going into the second or third month, or later, after the injury, it becomes a serious question whether we are going to benefit the patient by attempting it. It is better, perhaps, in some cases that the patient should risk an excision, rather than a re-fracture and non-union. We cut down upon the part, saw out the deformed bits, match the parts nicely, wire them; and we are quite sure that we will get a strong limb. United fractures, broken over again, are slow to re-join.

How does the treatment of compound fractures differ from that of simple fractures? The old cardinal rule used to be: reduce the compound fracture to a simple fracture; make it imitate a simple fracture as closely as possible. In old times that was done by sawing off and smoothing any spiculæ of bone which might project, washing out the part, and putting it well down into place, and sealing up the small compound opening which leads down to the bone, either with a blood-clot and bandage, or compound tincture of benzoin; setting the limb, and trusting to time to reduce it to a simple fracture.

In these times we enlarge, if necessary, the wound; irrigate and wash out in the most thorough manner with some antiseptic solution; see that there are no broken fragments; get out the clots; give it an absolute cleanliness as far as possible; then replace it into its position, and do one of two things — either do it up simply with the wound left open and covered with antiseptic dressing, and the limb done up in plaster; or else, going a step further than that, and having reduced the parts, smooth off the edges of the laceration and unite the skin by a continuous suture, sewing up the compound fracture, forcing it into a simple one, shutting it up with antiseptic dressing or plaster, and not opening it for three or four weeks, when it is expected to be healed.

The modern treatment is by far more successful than the old treatment. The old treatment, however, involved one or two principles which, I think, are, nowadays, sometimes neglected; for instance, the sawing off of ragged fragments very thoroughly before reducing the parts; sometimes making counter-openings and allowing drainage, or irrigations, in that way. Unquestionably, very many limbs were saved in that way that would otherwise have been lost; but we expected a certain amount of suppuration. We provided as far as possible against the chance of suppuration becoming a burrowing cellulitis by incisions, counter-openings, drainage or irrigation; but did not use the antiseptic method. The latter is the preferable method; and most cases of compound fracture are converted into simple ones, and get well. A curious problem sometimes presents itself to the surgeon — what to do with the fragments. Is it necessary to dissect them all out or not? Well, it seems not. It seems that those which have a good attachment to periosteum and muscles can be safely pushed down, and will consolidate and heal and agglutinate together, and that necrosis rarely occurs; but if detached, or small and rough or irritating, they had better be taken out.

Diagnosis of Fracture. — What are the signs that a bone is broken? They are usually stated to be three in number: that there is mobility, that there is deformity, and that there is what is called crepitus; and to this many add a fourth condition, namely, loss of function, or inability to use the limb. The leg, for instance, is deformed and looks crooked. It is more movable and hinged than it is in the normal state. The ends of the broken bone may be rubbed together and produce a grating, which is called crepitus; the patient cannot stand or walk upon it, and this constitutes the disability.

Now, in the classical case, all these may be present. In the occasional case, some of these will be wanting. Deformity may be wanting in a fracture of the tibia where the fibula is unbroken. The fibula acts as a splint, and the tibia cannot get out of place, except that one fragment sinks back a little and the other rides up a little, and we can feel through the skin that there is a place where there is a notch; and that is the only deformity we can find. Deformity, where there are two bones and one broken, may be almost wanting. Mobility may be almost wanting, too. Crepitus cannot exist in an impacted fracture. That follows, of course. Consequently, crepitus is frequently wanting in Colles's fracture; and we may get rotation of the head of the radius in an impacted fracture, to a fair degree, because the fragments are wedged together — the bone twists, and they hold firmly.

Disability, impossibility of walking on the limb, is also not always present. In the fracture of the fibula alone the patient can walk. In the fracture of the neck of the thigh-bone in old people, where it is impacted, they frequently walk some little distance before they finally give up, and in some cases have been known to go up a flight of stairs. In ordinary cases we do get deformity and mobility, which last distinguishes fractures to a marked degree from dislocations, where the part is stiffer and less movable than in the normal state; and we generally get crepitus. If not at first, we generally get it by moving the fragments a little; by rotating we frequently get the crepitus.

Some things may deceive us with regard to crepitus — a diseased condition of the neighboring tissues, especially the rheumatic joints of old people; what is called rheumatoid arthritis, where the articular surfaces are covered over with little protuberances which grate and rub. You will be surprised to find how this rubbing is transmitted along the bone, so that if you take a rheumatic joint and rotate it about, it feels as if the crepitus had gone down the whole length of the bone; and it may be absolutely impossible to distinguish, in case of a fracture, the rubbing here and the rubbing of the fracture itself. When a fracture is very near the joint, we may be deceived somewhat by it; or when the injury is very near the joint, we may be unable to tell whether it is a fracture or not, on account of the slipping about and grating of the tendinous surfaces after the bruise. You can get quite a marked crepitus among the tendons of the shoulder and hip; and although after you have felt the real grating of the bone a few times, you can distinguish, yet, at first, it is not so easy. Dislocation is immovable and stiff. In it you have deformity; generally lengthening instead of shortening; you have immobility, instead of mobility, as in fracture.

THE ORIGIN OF INFLUENZA. — The *Medical Record* calls attention to the different names given to this disease in different countries, showing a universal desire to put the responsibilty of its origin upon some one else. The Russians call it the "Chinese catarrh"; the Germans call it the "Russian pest"; the English call it the "German disease"; the French call it the "Italian fever"; the Italians the "Spanish catarrh." The Americans, not to be invidious, call it "—— on earth."

Original Articles.

THE CARE OF WOMEN IN LABOR.

BY CHARLES M. GREEN, M.D., BOSTON.

In December, 1891, I had the honor of reading to this Society a paper on "The Care of Women in Pregnancy."[1] The communication which I offer this evening is intended as a continuation of that paper, or rather as an extension of it to the consideration of the care of labor. It is not proposed, of course, in the brief space at my disposal, to speak of the pathology of parturition, but rather to treat the general management of essentially normal labor. It is assumed that the patient has sufficient pecuniary means to provide herself with trained nursing and all needed appliances; but I shall endeavor to point out how expense may be materially reduced, if circumstances demand it. It is assumed, further, that the patient has received adequate supervision during pregnancy, that due attention has been paid to her nutrition, the condition of her skin and bowels, her habits of sleep, her nervous strength, — in brief, that her general condition is as satisfactory as may be fairly expected of her constitution, temperament, and material circumstances.

At some convenient time during the latter part of the pregnancy, it is my custom to furnish the patient with a list of materials which I deem necessary for her comfort and for the convenience of physician and nurse. Success in most phases of human activity is largely dependent upon attention to details, but in none more so than in the practice of obstetrics: it has always, therefore, seemed desirable to me that the preparations for labor should be as complete as possible in all important particulars. I give this list herewith, with such comments as seem necessary:

(1) Rubber-cloth for the protection of the mattress.

This can be obtained in the shops one and one-half yards wide, and this width is sufficient for use lengthwise on the bed: a sufficient length is required to cross the mattress and to tuck under each side, where the rubber should be confined with safety-pins. The edges of mattresses are liable to be soiled unless this precaution is observed, especially in operative cases. Another piece of rubber-cloth, one yard square, is also desirable, to be placed between the folds of a sheet upon which the patient should lie during the second stage. The removal of this sheet and rubber after labor leaves the patient on a clean, dry draw-sheet. The use of old comforters to absorb the discharges is pernicious, and abhorrent to aseptic work. If the patient is unable to provide herself with rubber protection, an enamelled table cloth, commonly found in the houses of the poor, may be made to answer the purpose in view, or failing this, several layers of newspapers.

(2) A bedpan.

It is not material with which of the various kinds of this utensil the patient provides herself, except that the crockery pan is preferable to the inflated, soft-rubber variety, on the ground that the former is more easily kept aseptic and inodorous. The so-called "Eureka" pan is said to be more comfortable that the old-fashioned type with which all are familiar. In the absence of a bedpan, the bottom of a toilet soap-dish, or some similar utensil, can be made to serve for receiving the urine: among the poor the patient usually rises from bed for the purpose of evacuating bowels and bladder, in spite of advice to the contrary.

(3) A new syringe.

It is extremely difficult to render soft-rubber syringes aseptic. It is therefore important that the parturient should have a syringe that has never been used. I have found the Davidson syringe preferable. If the patient is unprovided, or if her syringe is open to suspicion from previous general use, the physician must rely on the one in his obstetric bag; but this should not be used in successive cases without careful sterilization.

(4) Material for abdominal bandages.

Whatever the differences of opinion as to the utility of the abdominal bandage in supporting the uterus and the abdominal wall, and in promoting the involution of the latter, there is no question, I think, but that a properly adjusted swathe conduces to the comfort of the patient. Unless advised to the contrary, women commonly provide themselves with binders of insufficient width, gored to fit the waist, and of at least two thickenness of cloth: such binders are often worse than useless. Several yards of medium-weight, yard-wide, unbleached cotton cloth should be provided, which the nurse can tear into strips eighteen inches wide and about forty-five inches long: hemming is unnecessary. Such binders are wide enough to extend from the ensiform cartilage to below the trochanters, and, when snugly pinned, fit the figure well. If the woman has broad hips and a small waist, it may be necessary to take a pleat on each side with safety-pins when the bandage is applied. Few patients are unable to provide several yards of cloth, and these will afford a fresh bandage every day during the first week of convalescence.

(5) Materials for the obstetric pads.

In the evolution of the obstetric pad the original, somewhat complex, affair, still sold in the shops, consisting of canton flannel, cheese-cloth, oiled-silk, cotton-waste, and absorbent cotton, has gradually given way to one of extreme simplicity. The pads now used in the Boston Lying-in Hospital and they answer their purpose admirably, are made as follows: A quantity of cheese-cloth is boiled, partly to insure its cleanliness, and partly to render it more absorbent. A yard is then cut into four pieces eighteen inches square; allowing an inch on each end for folding over, the pad is then made about four inches wide with absorbent cotton-lint wrapped in the cheese-cloth; the ends are folded over and basted. These pads, then, are about fifteen or sixteen inches in length, long enough to pin by each end to the binder, and more efficiently protect the vulva than the shorter pads originally employed. In the hospital the pads are made in large quantities, are sterilized by steam, and packed away in a large tin receptacle. In private practice, where the appliances for steam sterilization are not usually available, the pads should be soaked in a 1 to 2000 sublimate solution, dried, and packed away in a sterilized towel or in paper. A patient requires about four dozen pads. She should therefore provide twelve yards of cheese-cloth. She also needs, for the pads and other purposes, five pounds of absorbent cotton-lint. These materials are quite inexpensive; but for those unable to make this provision, the common menstrual napkins will serve, provided they are boiled, soaked in a 1 to 2000 sublimate solution, and laid away rough dry.

(6) Sundry utensils.

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[1] [illegible]

Two large, and two small, wood fibre or agate-ware, basins should be provided for use at the bedside, for corrosive or carbolic solutions, for the reception of the placenta or of vomitus. Common China washbasins will, of course, answer these purposes; but they are heavy and inconvenient, and liable to be broken. Two buckets, one for hot water and one for cold, should also be at hand, for use in the treatment of possible asphyxia of the new-born infant. A feeding-cup is needed for the administration of liquid food or medicine during the early part of the convalescence, when it may not be desirable for the patient to raise her head from her pillow; failing this, a bent, glass tube may be obtained at a small cost. A rubber hot-water bottle, of two quarts capacity, may also be needed; but glass bottles will answer for heaters, if securely corked. It is desirable that some provision should be made for heating water or food without resort to the kitchen range, especially for use at night: a small gas stove in an adjoining room, or a spirit-lamp, will serve this purpose. A new nail-brush should be provided for the use of physician and nurse: failing this, the brush to be found in a well-appointed obstetric bag should be used.

(7) The patient's wardrobe.

A wrapper adapted to the season is necessary for the first stage of labor and the later weeks of the convalescence; a bed-jacket is also convenient when the patient sits up in bed. It is convenient to have the night-dresses open the entire length in front, and it is prudent to have these garments neither new nor elaborate. A supply of sheets, towels, safety-pins, and tape should naturally be provided.

(8) Supplies from the apothecary.

These should include two half-pound cans of ether, returnable if unused, six ounces of carbolic acid (95 per cent.), 50 seven-and-one-half grain corrosive-sublimate tablets, brandy, alcohol, and an ounce of fluid extract of ergot. An ounce of white vaseline for the nipples, and a like quantity of eucalyptized vaseline (1 to 8), for the examining finger should be added. Among the poor such of these articles as may be needed must be furnished from the obstetric bag.

(9) Articles for the infant.

The selection of the baby's wardrobe, toilet-basket, and bassinet I have always considered the mother's prerogative, and I never offer advice on these matters unless it is sought. Whether the baby is to wear silk or woolen shirts [2] I leave to the mother to decide; but I desire her to provide suitable flannel bands for the early months. The toilet-basket should contain a skein of bobbin for tying the cord (although, of course, twine will answer), and a small package of plain absorbent, or borated, cotton, for dressing the same; a supply of small safety-pins; a small, soft sponge, and hair-brush; soap and toilet-powder. It used to be thought that white castile soap was best adapted to the infant's skin; but this has seemed too harsh, and some of the milder toilet soaps are preferable. A powder of oxide of zinc and starch, one to seven, makes a good dusting-powder, although the mother may naturally prefer one more elegant. The so-called "velvet skin powder" now sold in the shops I have found excellent, and it is dispensed in convenient boxes with perforated inner covers, whereby the powder can be dusted where needed without resort to a puff-ball. A bottle of fresh olive oil should be provided for the first bath. In case the baby is premature or too delicate to be washed and dressed, it is prudent to have at hand one or two rolls of common cotton-batting, in which he may be wrapped and then placed between heaters or in an incubator.

The baby can be bathed in a large wash-basin, or in a foot-tub of tin or wood-fibre; but the bath made of sheet rubber, supported on folding legs, is to be preferred. It is desirable that an accurate scales should be provided for the baby. The initial weight can, of course, be ascertained with the obstetric scales carried in the physician's bag; but the nursery should contain a suitable balance whereby the infant's weight can be regularly taken and recorded, for the guidance of the physician in the subsequent management of its nutrition. A comfortable bed can be made for a young infant on a sofa, in an easy chair, in a market basket, or even in a bureau drawer; but a bassinet on legs, to raise the infant from the floor, and provided with curtains to shelter from undue light and drafts of air, is much to be preferred.

THE CHOICE AND PREPARATION OF THE PATIENT'S ROOM.

Except in hot weather it is desirable that the lying-in room should be exposed to ample light and sunshine. If possible a room should be chosen in which there is no plumbing. A fireplace promotes cheerfulness and good ventilation, and enables the nurse to more carefully regulate the temperature of the chamber. When possible the nurse should have an adjoining room, where she may sleep apart from the patient, where the baby may be attended, and where the case-records, medicines, and other supplies may be kept: in short, the patient's chamber should not bear the appearance of a sick-room, and the necessary appliances of the lying-in room should be kept out of sight, when not in use.

The patient should, if possible, have a single bedstead of sufficient height: the low, broad bedsteads are very inconvenient for physician and nurse. The bed should be so placed as to be accessible on both sides, and if possible so that the patient does not face a window: in city houses this latter condition is easy of accomplishment. During the labor the physician should have a direct light on the right side of the bed: if gas or electric fixtures are not so arranged as to afford this, a lamp should be suitably placed. In general, the room should, of course, be swept and garnished, and draperies which obstruct sufficient light and air should be temporarily removed from bedstead and windows. Otherwise the room should be disturbed as little as possible: it is quite undesirable to lead the patient to suppose that she is about to undergo a capital operation.

PREPARATIONS OF THE NURSE.

It is desirable that the nurse should be in the patient's house one week before the predicted date of labor: by this arrangement not only is suitable attendance provided in case the labor occurs a few days sooner than expected, but the nurse has thereby an opportunity of making certain final preparations. Moreover, it is a comfort to the patient, especially if a multipara, to know that, in the event of the sudden onset of a precipitate labor, she has an attendant competent to receive and care for the baby, in case the physician does not arrive in time. Further, a well-trained nurse is generally able to discriminate between true and false pains, and to know when it is necessary to summon the physician.

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[2] [illegible], with very delicate skins, fine linen or cotton shirts [illegible] preferred.

While the nurse is waiting, besides giving attention to the general comfort of the patient and adapting herself to the customs of the household, she sees that the various articles needed are at hand and properly disposed. She makes and sterilizes the vulvar pads, prepares the binders, and makes with some of the absorbent lint several dozens of so-called charpie-balls for use as sponges during the labor and convalescence; these she sterilizes, as she does the pads, by steaming or soaking in a 1 to 2000 sublimate solution. On the invasion of labor she prepares the bed, protects the carpet on the right side of the bedstead with a strip of oil-cloth or piece of old carpeting, and, if the bedstead is of wood, places a sheet folded lengthwise over its side to prevent staining with blood. She also prepares a suitable, light table to be placed, when needed in the second stage, at the foot of the bed on the right side convenient to the physician's hand. On this table would be placed the sublimate solution and nail-brush, a basin of charpie-balls, the lubricant for the examining finger, and scissors and bobbin for the funis. She would also prepare for the physician's convenience a place for the ergot, brandy and other needed articles. She would make an ether-cone, and provide a "receiver" for the baby. As the second stage advances she would assure herself that hot water could be quickly obtained; she would cause to be brought a basin of pieces of ice as large as the fist; and she would see that the two buckets for hot and cold water were ready for use in an adjoining room, in the event of asphyxia of the new-born infant.

GENERAL MANAGEMENT OF THE FIRST STAGE.

During the first stage of normal labor, the duties of the physician are few. At his first visit he assures himself of the patient's general welfare, makes his diagnosis of the fœtal position and presentation, and satisfies himself that all preparations have been made. He is then able to leave the patient and go about other duties, visiting her occasionally to ascertain the progress of the case. Meanwhile the nurse secures for the parturient a free movement of the bowels, by the use of an enema, if necessary, and administers the ante-partum vaginal douche of 1 to 3000 corrosive solution to insure an aseptic passage for the infant's eyes. The better class of patients, who take daily baths, need no further preparation; but sometimes the nurse may think it wise to assist the patient to a needed ablution, and some patients desire to have their hair braided to prevent snarling, as a preliminary to their long confinement in bed.

If the patient is in good general health, and if she has a reasonably stable nervous system, the pains of the first stage ought not to seriously disturb her. It is much better for her not to take to her bed until towards the end of the stage; if she does so, she naturally puts her mind on her labor, her pains are harder to bear, and she is liable to become impatient at what seems to her inexplicable delay: she is also more inclined to clamor for anæsthetics. Of course, if this stage occurs in the night, it is well for her to remain in bed, and with chloral, if necessary, obtain some sleep if possible; but in the daytime it is much to her advantage to be up and about her room and to occupy her mind and fingers with some amusement or occupation as a diversion. A sensible woman will often write letters, read, sew, or play cards, to while away the time. During this time the nutrition of the patient must not be forgotten; while she may be indisposed to partake of much solid food, milk, bouillon, soup, and bread and butter should be offered by the nurse at proper intervals: it is not easy to bear pain with an empty stomach.

MANAGEMENT OF THE SECOND STAGE.

Towards the end of the first stage the patient should take her bed, as she is then approaching the probably most painful part of her labor, and as it is injudicious for her to be upright when the membranes rupture. The nightdress is rolled up to the breasts, and confined with tapes passed under the roll and tied over each shoulder. A sheet folded once is then tied with tape around the waist, to supply warmth and protection; the opening in the sheet being adjusted at the right thigh. To assist the patient in making full use of her voluntary muscles in straining, it is well to arrange a sheet on which she may pull, during the pains, and to place a hassock or some hard object at the foot of the bed, on which she may brace her feet.

From this time the physician's attendance is continuous. He makes occasional visits to the lying-in room to satisfy himself with the progress of the case; but the patient does far better, as a rule, if she is left alone with her nurse. Whether or not the husband should be in the room at this time must depend largely upon the wife's wishes and the effect of his presence or absence upon her. It is certainly proper to respect the wishes of the patient in this matter, when the physician's judgment is not seriously opposed.

When the presenting part has reached the inferior strait, the post of the physician is at the bedside: his coat is removed, his shirt-sleeves rolled above the elbows, and his clothing protected with a sheet folded once and confined about his body under his arms. As at all previous examinations his hands, now both hands and arms, must have been thoroughly scrubbed with soap, hot water, and nail-brush, before the corrosive disinfection: the nails should have received careful attention. Now, as in previous examinations, the vulva must have been carefully cleansed with a charpie ball and corrosive solution, before the introduction of the fingers. During this stage the patient lies alternately on her back or side at her pleasure; but when the head engages in the vulva, she should turn upon her left side, that the physician may properly observe the perinæum and most effectively restrain the passage of the head until the perinæum is sufficiently dilated: meanwhile the head is kept well flexed, and finally allowed to extend out at the very end of a pain, or it is extracted manually in the interval between two pains. To assist the physician during the expulsion of the child, the nurse takes post on the opposite side of the bed, and supports the patient's right knee in such a way as to widely separate the thighs at the time of the passage of the child. In this position the nurse is also able to support and follow down the fundus uteri from the time of the birth of the head until she is relieved by the physician after he has received, separated, and laid aside the baby.

If the patient is not under ether, the physician carefully explains to her what he wishes her to do at the proper time to assist him in avoiding, if possible, a tear of her soft parts; namely, that at his warning she cease to strain and fix her diaphragm and abdominal muscles, but rather, by a hurried or panting respiration, that she avoid all voluntary effort in order that she may not forcibly expel the child inopportunely.

After the birth of the head, the physician assures himself that the funis is not coiled about the neck (or frees it, if found so coiled), and wipes the eyelids with a charpie-ball wrung out of warm corrosive solution or boiled water: he then extracts the body, unless it is speedily expelled. As the treatment of asphyxia neonatorum is foreign to the purpose of this paper, it is assumed that the child breathes, cries, and expands his lungs: then in four or five minutes the funis is tied with sterilized bobbin about an inch and a half from the umbilicus, and again, for the sake of cleanliness and to avoid the possibility of bleeding an unsuspected twin, a short distance nearer the placenta. Between these ligatures the cord is cut with aseptic scissors, and after satisfying himself that the vessels are secured the physician rolls the baby in his "receiver" and lays him in his bassinet on his right side. It should be remembered by both physician and nurse that the funic ligatures sometimes become loosened, and to avoid serious hæmorrhage one of them should inspect the baby at frequent intervals, pending the further conduct of the labor. After the separation of the child, a towel wrung out of a warm corrosive solution is laid over the vulva, until the time arrives for the delivery of the placenta.

MANAGEMENT OF THE THIRD STAGE.

The physician now relieves the nurse from her care of the uterus. The patient is turned upon her back, warmly covered, and a hot-water bottle placed at her feet if she is chilly. The physician seats himself, places his left hand over the fundus, and assists the pains of the third stage. If these are tardy, he exerts gentle friction over the uterus. If after five or six pains, and the lapse of half an hour, the placenta is not expelled, he may express it by the method of Credé. As the placenta emerges from the vulva, it is received with the aseptic right hand, revolved to ensure the twisting of the membranes, and placed in a basin for subsequent examination: it is wise, however, if there is any doubt of the integrity of the secundines, to place the uterus temporarily in the charge of the nurse and to examine directly and with care, both the placenta and the membranes, in order that any considerable missing portion may be removed from the uterus before the administration of ergot, a dram of which should be given when the uterus is empty. The physician continues to hold the uterus until he is assured of its sufficient retraction: he is then free to examine the perinæum and make any needed repairs. The skilful management of the third stage of labor is the physician's most important duty in normal cases. This stage must not be hurried in the absence of hæmorrhage; but ample time must be allowed for the uterus to contract and adequately retract, before the placenta is expressed; and the trained hand should not leave the uterus until all danger of a primary hæmorrhage has passed.

THE POST-PARTUM TOILET.

The vulva is thoroughly cleansed with a charpie-ball and a freshly made, warm, corrosive solution, and the long hair on the vulva is trimmed off with aseptic scissors: this latter act enables the nurse to more easily keep the vulva clean and free from adhering blood-coagula in the convalescence. A 1 to 3000 warm corrosive douche is then given, the perinæum, if torn or repaired, is dusted with iodoform or aristol, and the vulvar pad is applied. All soiled parts of the body are cleansed and dried, the patient being turned upon her side to facilitate the bathing. It should be remembered, however, that when the patient is lying on her side at this time, with her abdominal wall relaxed and unsupported, and her labia gaping, the uterus is liable to drop away from the pelvis and there is danger of the entrance of air within the parturient canal by what is known as negative pressure. To avoid this possible risk it is my custom to hold the uterus and keep it firmly pressed to the pelvic brim, while the patient is turned about in the post-partum bath.

The temporary draw-sheet and other soiled linen are now removed, the binder snugly applied, and the vulvar pad pinned in position. If necessary, the uterus is supported with folded towels above the fundus: this is not usually required unless there is a tendency to relaxation of the uterus, and unless the abdominal wall is much relaxed. The night-dress is rolled down, the bedding is arranged, heaters are placed at the feet, if necessary, and a warm drink may be administered, if the patient desires. The various utensils employed in the labor are then removed, the room is put in order and darkened, and the patient is left to rest and sleep.

THE CARE OF THE BABY.

The nurse is now at liberty to attend to the baby. After thorough inunction with olive oil the infant is carefully bathed; but this first bath should not be prolonged beyond ten minutes, as the new-born infant needs chiefly rest and sleep, and is the better with little handling. If the baby is at all delicate, it is wise to give simply the oil inunction and to roll him in his blankets, deferring the bath for twenty-four hours.

After the bath the physician examines the infant for any defects, not forgetting the palate: he then puts another ligature on the cord, dusts the dried stump with aristol, envelopes it with plain absorbent, or borated, cotton, and adjusts the flannel bandage. The baby is now weighed and measured, and handed over to the nurse to be dressed and laid in his bassinet on his right side to favor the closure of the valve of the *foramen ovale.*

By this time two hours will have elapsed since the birth of the baby, and the physician after a final inspection of the mother, assuring himself that the uterus is well contracted, that there is no undue flowing, that the bladder is not distended, that the pulse has fallen, and that his patient is resting comfortably, may safely leave the house.

THE QUESTION OF ANÆSTHETICS IN NORMAL LABOR.

In approaching this subject it is well to bear in mind that parturition is a physiological process, and physiological processes ought not to require the assistance of anæsthesia. While willing to admit that modern woman is not perhaps the physical equal of her prototype, I am not prepared to grant that she is so degenerate as some writers would have us believe. The changed conditions of modern civilization have certainly wrought some changes in womankind: her nervous organization is not perhaps in many instances so stable and unimpressionable. It is a question whether the modern, higher education of women does not make demands upon their nervous systems which render them less able to bear without anæsthesia the shock and pain of maternity. Be this as it may, I am not yet prepared to range myself with those who regard the use of anæsthetics a necessary accompaniment of labor. Not that I believe, by any means, that woman should bear the curse of Eve, and submit to the pain of labor as an hereditary punishment; but because I believe that, as a rule, a girl with a healthy mental and physical inheritance, who has been well brought up, who has been well managed during pregnancy, and who approaches her labor in good condition, does not *need* anæsthesia. Having said this much I hasten to remark that I am always ready to administer anæsthetics on any reasonable indication, and do, in fact, employ them in moderation in many normal cases, partly to gratify the imperious demand, in the face of no contra-indication, and partly for other reasons which will be stated later.

During the first stage of normal labor it is only exceptionally that I find anæsthesia either necessary or demanded by the patient. If this stage is well managed, if the patient is well fed, and her attention properly diverted, she generally passes through the stage with equanimity and composure. If the stage is protracted, if the soft parts are unduly rigid, if the patient is decidedly hyperæsthetic, if, in short, the labor is no longer normal, the indications must be met with appropriate therapeutics. Chloral hydrate is the drug, par excellence, for needed anæsthesia in this stage, administered in fifteen-grain doses, at half-hour intervals, until three doses have been given, if necessary; the effect is satisfactory, and not injurious, if the heart is not weak. I usually give the drug by rectum to avoid disturbing the stomach, which may be already affected with the physiological nausea often seen towards the end of the stage.

When the cervix is approaching the full dilatation, if the pressure of the passing head on the cervical ganglia causes undue pain, I then resort to ether, administered during the contractions. The amount given is not enough to inhibit the action of the uterus, but still enough to obtund the sensibility of the nerves and greatly comfort the patient. I never allow a woman in labor to bear pain which can be called in any way pathological.

When the head has passed the cervix and the os has receded, the pain is usually less severe. The patient becomes conscious of progress, she is encouraged and looks forward to the birth of her child. She is cheered to make full use of her pains and brings to bear the material assistance of her voluntary muscles. If within two hours she has not brought the presenting part to the outlet, I cease to regard the case as normal, and employ such interference and assistance as may seem advisable. Otherwise I encourage the patient to make full use of her pains without anæsthesia, until the head bulges the perinæum, when I begin the administration of ether. This I give moderately at first that I may not diminish the effectiveness of the uterine contractions; but as the head crowns I push the ether, and deliver the woman under full surgical anæsthesia. I do this for two reasons: first, because this brief use of ether does no harm, does not paralyze the uterus nor interfere with its retraction; secondly, because with the patient under full anæsthesia I am better able to control the expulsion of the head and avoid laceration of the perinæum.

To state once more and in other words my position in regard to the use of ether in labor, I would say that while I am ready to use the anæsthetic in the way and manner above described, I believe that the prolonged use of ether, even when not pushed to surgical anæsthesia, is liable to inhibit the uterus and retard the labor; further, to interfere with efficient retraction of the uterus and predispose to hæmorrhage; again, to etherize the child, and perhaps, in conjunction with a prolonged labor, to result in a still-birth. In short, my way is to soothe the patient with ether, if need be, through the peculiarly painful period when the head is passing the os uteri; then to subject her to a short, sharp labor, not exceeding two hours, and giving surgical anæsthesia when the head is born. If after two hours of good labor the child is not born, nor apparently soon to be born naturally, I interfere. I believe that under this management the patient avoids one of the possible causes of post-partum hæmorrhage; that she makes a better convalescence; that there is less risk of fœtal mortality.

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TREATMENT OF LATERAL CURVATURE BY MEANS OF PRESSURE CORRECTION.[1]

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

The method of treatment of resistant lateral curvature of the spine by means of mechanical correction is not new. It has until recently, however, fallen somewhat into disfavor, superseded largely by gymnastic methods. This was in part due to the earnestness and intelligence of the promoters of the latter system, and also to the fact that the treatment is rational and suitable for certain cases, and no other method of treatment was within the reach of the practitioner. There is not only nothing irrational in the method of treatment by forcible mechanical correction when feasible, but it is manifest that when shortened ligaments in spinal curvatures are situated so that they serve as a check to muscular action purely muscular exercise does not stretch them, or stretches them but slightly; or when they are strong enough to withstand muscular action, gymnastics alone are inadequate as a system of correction, though of use as an adjuvant and as a method of prevention of relapse after correction.

It has been denied that pressure upon different parts of the thorax, that is, upon the ribs, has any effect in correcting torsion of the spinal column, the claim being that pressure on the ribs stretches the ligaments of the costo-vertebral articulation without twisting the vertebræ; this, however, has been disproved by clinical experience in suitable cases and by experiments on cadavera, to be mentioned more fully in another communication.

It has also been asserted that all mechanical appliances weaken the muscles by compression, and are, therefore, to be avoided as injurious; but this argument, equally true as to the use of mechanical appliances in club-foot, knock-knee or in fractures, is valid only when mechanical appliances are injudiciously used. The older forms of mechanical correction were faulty in many respects, and justly fell into disrepute. Later, however, the need of something more than gymnastic treatment became apparent from the unsatisfactory results often obtained. The enthusiasm with which the method of treatment by plaster jackets was first received indicated this demand for some convenient method of correction; and although vertical traction and plaster jackets did not accomplish as much in lateral curvature as in Pott's disease, yet the impulse given stimulated investigation.

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[1] [illegible] Society, March 1, 1893.

The number of mechanical means for forcibly stretching contracted curves at present at our hands is not small. They are all designed to stretch the contracted tissues. The curvatures are corrected as far as possible, using such force as can be borne. This correcting force is gradually increased, and repeatedly applied. Lorenz, Beely, Redard and Hoffa have shown that the amount of force which can be used without injury is much greater than has been supposed, and they and others have demonstrated that practical results can be obtained in this way.

These correcting appliances are of two kinds: (1) those placing the trunk in correcting attitudes; (2) those designed to exert direct correcting pressure.

Of these, the first have been frequently described, and will not be mentioned here. The different appliances for this purpose are of great use in increasing the flexibility of the spine, and thorough treatment is almost impossible without them. The second have been urged chiefly by Hoffa, of Wurzburg, whose excellent appliance has been described in his valuable work on orthopedic surgery. This has been modified by Schede, of Hamburg, who has devised a most efficient arrangement. The accompanying illustrations are of an appliance, modified somewhat from that of Schede, which will be found well adapted to the purpose for which it is designed (Figs. I and II).

The appliance is a standing frame, made of steel rods. The whole is furnished with arrangements for vertical traction, for fixation of the pelvis and shoulders, and for direct screw pressure upon any part of the thorax which may project abnormally.

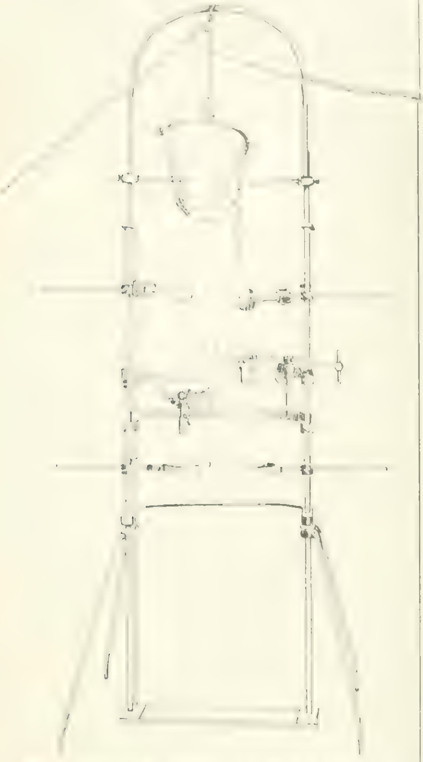

FIG. I. Apparatus for correction of scoliosis by pressure.

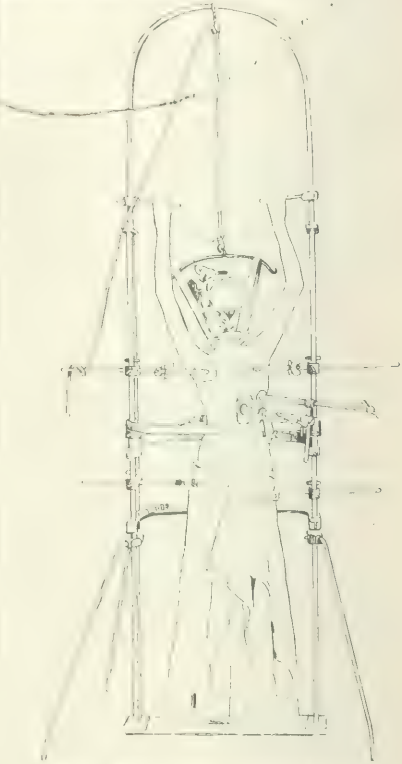

FIG. II. Patient in position in correcting apparatus.

The frame is eight feet high and three feet wide, and consists of two side-pieces, six feet high, connected above by an arched rod of steel, and below by a flat plate which serves as a standing base. Each side is formed of two parallel rods, three-quarters of an inch in diameter and four inches apart, firmly secured to each other above and below. Upon these two parallel rods run blocks of steel, which may be set at any height by means of a thumb-screw. The lower of these on either side is perforated for a sliding, horizontal, square bar of steel, one-half an inch in diameter, on the inner extremity of which is fastened two curved pieces of steel, so arranged as to firmly grasp the pelvis. The upper block on either side is also perforated by a horizontal steel bar, and to this is fastered an attachment giving pressure on the shoulders in front and behind. These blocks, bars and fixation-plates slide smoothly, and can be fixed as may be required to hold the pelvis and shoulders securely.

The steel bars which carry the pressure-screws each together form a half-circle — one in front and one behind — both together encircling the patient. These are attached at the sides to sliding steel blocks, and can be set at any height which is desired. The anterior bar is secured firmly at both sides; the posterior is hinged upon one side, and is then so arranged that it can be swung open in order that the patient may be put into the machine, and then is swung back and secured by a clamp to the steel block upon the other side. On the semicircular bars slide small steel blocks which can be secured at any point. Each of these blocks carries (at right angles to the bar) a rod cut with a screw-thread. At the inner end of each rod is a flat plate (made to play free within a small arc) and at the outer end is a handle. Twisting the screw-rod regulates the pressure, which can be adjusted to any desired point by shifting the blocks.

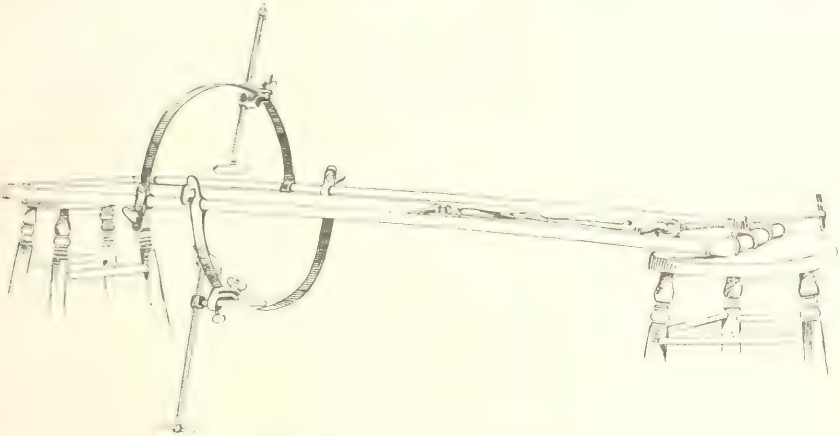

Fig. III. Recumbent correcting appliance.

This appliance can be used as a method of a forcibly correcting exercise applied daily for half an hour; the object being to increase the flexibility of the spine by stretching contracted tissues. It can also, however, be used for the purpose of fixing the patient in a thoroughly corrected position, or as near so as is practicable, while a plaster bandage is applied to the patient in a corrected position. It would at first seem that it was impossible to place a plaster jacket on a patient whose thorax has been corrected by forcible pressure. It will be found, however, that if this is done with care, the pressure being increased gradually, a marked improvement in the distortion of the thorax may be made. The patient should be placed in as nearly a corrected position as possible by means of the appliance already described and the plaster jacket applied in the usual way, except that the bandages are wound about the trunk avoiding the screw pressure rods. The patient's skin is protected under the points of pressure by pieces of saddlers' felt and even pressure is secured by thin steel plates which are incorporated in the bandages. The plaster corset is worn for a week or a fortnight, when another can be applied in a similar way with a slight increase of the pressure if practicable. It is, of course, possible to apply enough pressure to render the jacket unendurable; but short of this, it will be found that a substantial amount of pressure can be borne without more discomfort than that attending any jacket. If the jacket is split and removed the amount of correcting pressure is diminished even though the split jacket be well laced afterwards. If the greatest amount of correction is sought for persistently, the fixed bandage is to be preferred.

If a jacket is applied in this way, it is necessary that it should be a thick one, as a light bandage does not become quickly sufficiently strong to resist all downward pressure after removal of suspension. If a lighter bandage is desired, it can be obtained with a sacrifice of but little correcting efficiency, if the jacket applied, as has been mentioned, is removed when hard. From this a cast is made, dried and shellacked. Over this cast a second jacket can be made, which, when thoroughly dry, is cut and sprung around the patient (suspended in the ordinary way), and secured by an additional plaster bandage. This method of application of the jacket saves the patient from the discomfort of a moist plaster jacket.

After as much of correction as can be gained in this way, the removable corset can be substituted for the fixed one. These can either be of plaster, leather, wood, or, as the writers prefer, of paper and starch, according to the method communicated to the writers by Dr. Weigel, of Rochester. The casts made from the jacket can advantageously be altered in shape by building up and shaving off, so as to increase the amount of local pressure where desirable and decrease it over concave parts of the thorax.

The correcting appliance can then be again used as a daily exercise as long as is desirable; and if further gain in correction is to be accomplished, fixed jackets can be resumed, or lighter forms of corsets used.

A certain amount of discomfort is experienced by a patient who is suspended so as to entirely remove the superincumbent weight. In many instances this can be avoided by applying the jacket with the patient in a recumbent position. For this a modification of the hammock method for applying plaster jackets can be used. (Figs. III, IV and V.)

This consists of a sheet of cloth constituting the hammock, and a frame arranged to hold the cloth taut.

The frame is an oblong frame, six feet by two, made of galvanized-iron pipe, three-quarters of an inch in diameter. The cloth is stout sheet-drilling, somewhat wider than the patient, folded over the frame at one end, and at the other stretched over a steel rod which reaches across the frame. If this rod is pulled upon strongly, the sheet is kept tight and sagging so prevented. This is done by connecting the rod by means of a cord to a screw staple fastened to the other end of the frame. Screwing the rods regulates the tension.

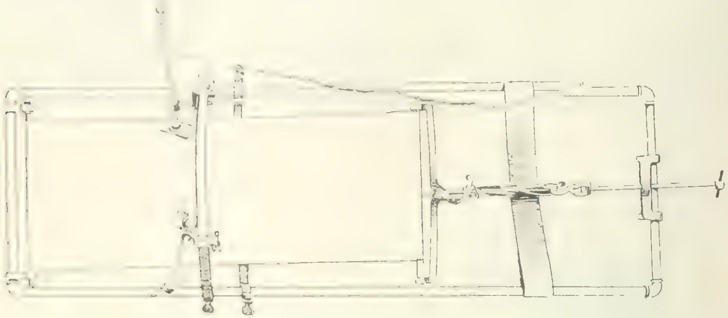

FIG. IV. Recumbent correcting appliance; seen from above.

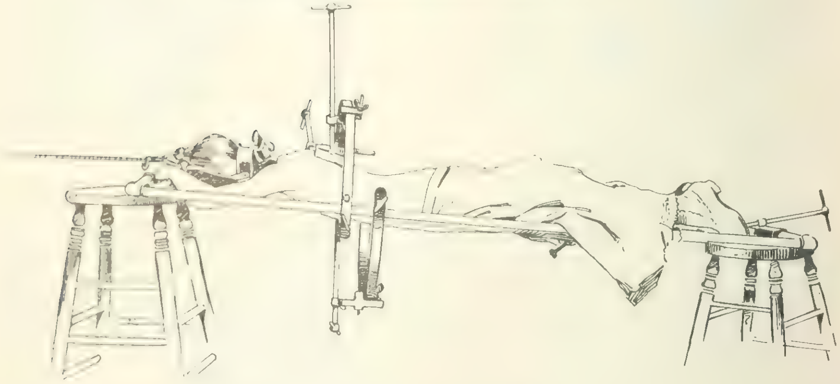

FIG. V. Patient placed in recumbent correcting appliance.

In putting on the plaster jackets, the cloth is cut along the sides of the patient, the rolls passed through the opening; and in this way the part of the hammock upon which the patient lies is incorporated in the jacket, which may either be left in permanently or may be withdrawn at any time after the jacket is hard. To secure direct pressure upon the thorax, the screw force can be adjusted (as in a way already described), and semicircular bands of steel adjusted on the upper and on the under side of the frame (Fig. V).

This appliance can also, like the other, be used as a means of daily exercise. Actual experience has shown that the curved spinal column can be straightened in this way as much as by vertical suspension, and with much less discomfort to the patient.

In the thorough treatment of severe lateral curvature the patient should be under treatment continuously; that is to say, it is not sufficient for the patient to devote an hour or more a day to the carrying out of prescribed gymnastics, and during the rest of the time should be exposed to the injurious effects of faulty attitudes. It is essential that the child should be held in as thoroughly corrected position as is possible at all times. This cannot be done by purely muscular exertion, for when muscular fatigue comes, the faulty attitudes are liable to be resumed. Even in recumbency children often take faulty positions.

The objects of treatment are first to increase flexibility of the parts of the spine where flexibility is abnormally limited; secondly, to secure the maintenance of an improved attitude by the use of the retention apparatus, until the improved attitude has, by the alteration in the structure of the tissues, become habitual. In many instances forcible correction is, of course, unnecessary, as simple manual pressure or manipulation or the setting up drill are sufficient; but experience has shown that in many instances where milder measures fail, gain can be accomplished without discomfort to the patient by mechanical pressure, if thoroughly applied. The maintenance of the improved good position is secured by the proper jackets, but also by means of retention appliances when the patient is in a recumbent position. Various forms of these are in use, but a simple one can be made by using the oblong gas-pipe frame placed upon the patient's bed, and securing in addition pressure by means of straps and weight. A detailed description of this appliance will be published in a later paper; but an efficient one can be readily devised by any surgeon.

As the limit of possible correction is reached, treatment by means of active and passive gymnastics in combination with proper retentive appliance becomes more important. In fact, it may be said that the gymnastic treatment is suited for the initial stage as well as for the stage of convalescence. Treatment should be continued until the bones forming the spinal column may be considered to have shaped themselves sufficiently, and muscles, ligaments, fascia, have gained strength so that yielding under superincumbent weight is not probable. The danger of any increase of the curve is very slight. The amount of time required for treatment before this can be gained, varies, and is a matter of judgment depending in the individual case, upon the rate of growth, the tendency to faulty attitudes and the patient's general condition. By no means of forcible correction can vertebræ, already altered in shape, be restored to shape or entirely corrected. But where faulty attitudes constitute the danger of an increase of the curve, correction of these faulty attitudes as far as possible diminishes the danger of increase of the curve. In certain instances where the distortion is due not so much to alteration of the bone as to the shortening of the muscles or of the fasciæ, experience shows that a greater amount of correction and in a shorter time, can be gained by forcible mechanical correction, than by gymnastic or postural treatment.

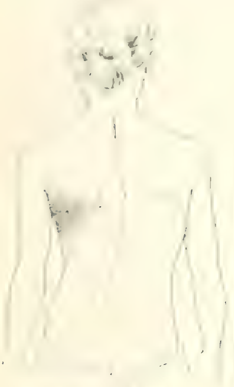
Fig. VI. Case IV, from photograph.

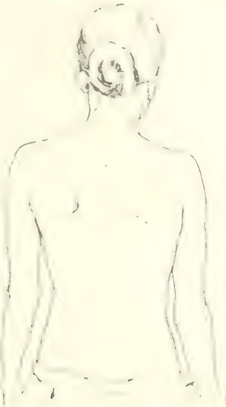
Fig. VII. Case IV, from photograph after 4 months' treatment.

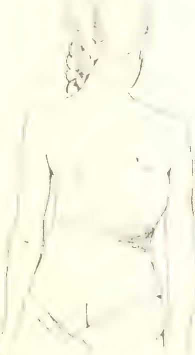
Fig. VIII. Case V, from photograph.

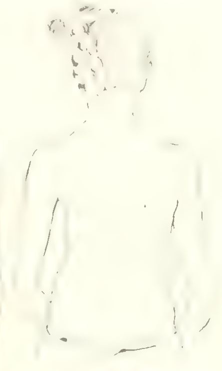
Fig. IX. Case V, from photograph after 6 months' treatment.

It is, of course, not claimed that all cases of lateral curvature are subjects for this method of treatment; but some cases — more flexible ones — need only gymnastic treatment; others — too rigid — are not amenable to any treatment. But it is claimed that many cases of rigid curves not corrected by the ordinary gymnastic methods can be treated with benefit by the method of forcible mechanical correction, and that the flexibility of the spine can be regained in the distorted portions of the spine with comparative readiness; that a practical correction of the curve — or improvement in the amount of the curve — can be gained, and improvement, not only in the carriage and appearance of the patient, but an actual gain in the amount of recorded curve, can be obtained by thorough and persistent treatment.

The following cases will serve as illustrations of this method of treatment:

Case I. Girl, age twelve. Had grown rapidly, and was under weight and over the average height. The curve had been noticed by the parents about a year previously, and had been treated by gymnastics, and the wearing of a high sole. There was rotation of nine degrees to the right in the mid-dorsal region, and ten degrees in the lumbar, with a deviation of one inch of the spinous processes. The left shoulder drooped, and the left hip was prominent. The upper portion of the spine was flexible, but the lower was rigid. Daily exercise was prescribed, which had for its object the forcible straightening; and after a considerable increase in flexibility had been obtained, a plaster cast was taken in the correct attitude, from which a leather corset was made, which the child wore continually; and at the same time there was carried out daily gymnastic work. After nine months there was marked gain. The lateral deviation was scarcely perceptible, and could not be measured. The rotation in the dorsal region had improved two degress, but in the lumbar remained the same. The shoulders were level; and the hip showed less prominence, without the high sole, than before existed while the sole was worn.

Case II. Boy, eighteen. Had always been strong and rather inclined to athletic sports; and, as far as it could be learned, the curve had developed slowly during the previous year. The left shoulder was low, the right scapula markedly projecting, and the right hip prominent. The pelvis was level. Measurement showed deviation of the spinous process of one and one-half inches to the right at the level of the eighth dorsal vertebra, and half an inch to the left at the second lumbar, and this was accompanied by a rotation of twelve degrees in the mid-dorsal region. Exercises for forcible correction, both with apparatus and by gymnastics, were practised daily, and a retention and corrective corset, made from a cast taken in the corrected attitude, was worn continually.

In one year from the time treatment was begun the deviation in the dorsal region was reduced to three-eighths of an inch in the recumbent posture, and one inch in the erect. The measurements in the lumbar region were the same, but the shoulders were carried evenly, and the hip showed less prominence.

CASE III. Girl of four years, in whom the deformity was noticed to develop rapidly after diphtheria. The spine showed a deviation of three-eighths of an inch between the eighth and twelfth dorsal vertebræ, with a decided rotation of the thorax. The spine was flexible, but the deformity did not entirely disappear on lying down. On account of the age of the patient and flexibility of the spine, gymnastics alone were given, and a retention cast worn.

At the end of the first year, the back was straight, but there was a tendency to postural deformity; therefore the retention apparatus was worn, and light gymnastics faithfully carried out at home. The patient reported the next summer, and showed a perfect symmetrical back.

CASE IV. Girl of twelve years. The deformity in this case was known to have developed rapidly after one of the exanthemata, and showed a sharp curve of deviation, with an unusual degree of rotation in a small section. The left shoulder was low and the right hip prominent. The pelvis was level. The condition is shown in Fig. VI. The treatment consisted of daily exercise in apparatus, continued with forcible exercises, until the spine had become flexible, when the permanent plaster jackets were applied in the corrected attitude. The case is still under treatment; but Fig. VII shows the condition after four months of treatment.

CASE V. Girl of thirteen years. In this case the health had not been good for some time, and owing to this and other circumstances the preliminary work for increasing the flexibility was not attempted, but permanent plaster jackets were applied at intervals of four to five weeks, in each the attempt being made to carry the correction a little farther. The rotation, as well as the lateral deviation, in this case was extreme, as shown by the illustration, Fig. VIII. The jackets were well borne, and the health improved; so much that she was able to attend school regularly, which had not been possible before for some time. The case is still under treatment, but the condition after six months of treatment is shown in Fig. IX.

THE following is taken from the "Query" column of a daily paper:

> [illegible] Query. — Will you please inform me of the disease that Gen. Sheridan died of and particulars of the same?
>
> Answer. — The immediate cause of the death of General Sheridan was heart failure. The remote cause was disease of the mitral and aoritic valves. The complications which occurred during his sickness were nervous exhaustion, pulmonary nisarctions, pneumonia, pulmonary fegeria, anasarca and hæmorrhages.

Clinical Department.

INGUINAL COLOTOMY FOR MALIGNANT ADENOMA OF RECTUM, WITH AUTOPSY.

BY JOHN C. MUNRO, M.D.

MR. X., first seen by me April 20, 1891, was fifty-two years old, married, and father of several healthy children. His mother had chronic diarrhœa; and one daughter has apparently inherited the same trouble from the patient. Otherwise the family history is negative. The patient gave no history of syphilis, malaria or tuberculosis. Since the age of twenty-one he had had a chronic diarrhœa, from which he had never been free for any length of time, and had always been obliged to exercise care in his diet. There was an indefinite history of "slow fever" at some time previous to the onset of the diarrhœa. In 1881 he was at Yorktown and Washington, but, so far as he remembered, he did not drink any of the native water, nor could he recollect ever having drunk water from stagnant pools. He had never lived South, but had been in England several times. Had always been an exceptionally strong, active, business man.

In September, 1890, an attack of dysentery laid him up over a month; and Dr. J. O. Tilton, of Lexington, who was attending him at that time treated him with hydrochloric acid, vegetable astringents, etc. In January, 1891, he detected a small lump in the patient's left groin, that disappeared after a dose of castor oil; and he found the prostate apparently enlarged and tender. Salol and bismuth, together with a trip to the South, stopped the diarrhœa.

Early in April a sharp attack of dysentery (eight to ten stools daily) was started by exposure to wet and cold; and at the same time he had painful and frequent micturition during the day, prostration and severe abdominal pain in lower abdomen. When I saw him he had lost over twenty pounds, was easily fatigued, and looked tired and anxious, though he had no trouble in sleeping. Once or twice he had noticed blood in the stools. No jaundice, œdema, cough or headache. Urine 1021, acid, normal color; albumen and sugar absent; urates increased, slight sediment of pus and single-nucleated cells, but no casts. Chest negative. Abdomen soft and non-resistant. Behind the pubes, from an inch or so to the right of the median line, leftwards, and thence obliquely to the left hypochondrium, was a distinct, hard, movable, slightly lobulated swelling, of undetermined shape in the pelvis but elsewhere sausage-shaped. Tender in the pelvis especially. By rectum the prostate felt moderately enlarged and sensitive, the upper border not being within reach; the rectum felt normal. The patient was markedly fatigued by the short examination.

Four days later Dr. F. C. Shattuck kindly saw him in consultation. The tumor was defined, as noted above, but no diagnosis was made beyond that of chronic dysentery. Frequent and careful feeding, bismuth in thirty-grain doses, and thymol in keratin covering was advised, as well as an abdominal supporter.

After a few days' immunity, sharp, short attacks of pain came on daily, and the patient ascribed them to the irritation of the thymol, so it was omitted, and ten grains each of the subnitrate and subcarbonate of bismuth were given four times daily. Temporary relief followed, only to be broken by some moderately severe pains caused by indiscretion in diet. Then he gained strength and spirits, and was able to be at his business daily.

In June, after exposure to a cold easterly storm, he had the worst attack experienced so far, and lost considerable ground. However, he pulled up rapidly under rest, nursing and diet, and was nearly as well as ever when at the end of July he began to have a steady, gnawing pain, starting in the pelvic lump and radiating into the left flank. Scarcely any severe attacks occurred at this time, and the bowels were in such good condition that he could eat potatoes, peas, etc. Though he had lost thirty pounds in the last few months, only two of these had been lost since the attack in June.

As he thought that the subcarbonate benefited him more than the subnitrate, twenty grains of the former alone were given him four times daily. The tumor was apparently increased in size, hard, and in places nodulated. By rectum, a sensitive nodule, the size of a horse-chestnut could be felt to the right of the prostate, and palpated between the examining finger and the hand pressed deeply into the abdomen above the pubes. To the left, also, a mass could be obscurely felt in the same way. The inguinal glands were normal.

With severe pain, the patient stated that the tumor in the lumbar region seemed to harden and increase in size. He had found by trial that twenty or thirty minims of compound tincture of opium, in the morning would generally control pain throughout the day and so far he had lost no sleep. The stools were rarely hard enough to be formed and then were not tape like.

I did not see him again until the end of October, when he gave the following history: In the early part of September, feeling very well, he started in a private car on a trip to the Rockies. All went well for two weeks, he being able to go off on short hunting-trips and to eat quite a varied diet, when, after exposure, he had a return of pain without marked diarrhœa, and also a temporary retention from probable prostatitis. Then for four weeks he suffered intensely, and once during a sharp attack of diarrhœa he took some starch and water with a resulting constipation followed by a painful passage of hard fæcal lumps. I found him much run down, suffering severely, describing his attacks as though the gut became twisted and then relieved by the passage of gas through the constriction. He had obtained most benefit from the compound tincture of opium, although he had steadily kept on with the bismuth, any cessation in its use being followed by an upset.

On November 7th, after a series of severe attacks, many coming on for the first time at night, I asked Dr. S. J. Mixter to see him in consultation, to consider the advisability of an operation. It seemed best to explore at least, so the following day at St. Margaret's Infirmary, with Dr. Mixter to assist me and Mr. A. A. Wheeler to give ether, I opened the abdomen in the left linea semilunaris. The descending colon was found to contain a row of fæcal lumps of the consistency of moulder's clay and about the size of horse-chestnuts. In the pelvis, filling it except in front and on either side, where there was just room to insert the flattened fingers, was a hard, non-pitting, smooth lump. Above it and to the right was a coil of the sigmoid tied down by adhesions. It was not possible to determine whether the tumor started from the prostate or bowel. The colon was then brought forward, a spur being made in the lower third of the wound by passing a silk suture under its mesenteric border and through the parietes; the gut was then stitched along its longitudinal striæ to the parietal peritoneum by a continuous catgut suture, leaving about two inches protruding in the wound. Iodoform and gauze dressing. Recovery from ether was good; and on the following day the gut was opened without ether, and the bowel above the spur irrigated with warm water, but without result. A 27 French catheter was left in, and the dressing reapplied.

On the fourth day he ate light solids, and the same day had a small passage from the rectum of light-colored, foul fæces containing some minute strings of mucus and blood. The upper bowel was irrigated with a solution of glycerine and soda in water and a quantity of soft, black (bismuth) fæces with a healthy odor came away. By the sixth day he ate roast beef and potatoes; and on the following day all the stitches but one were removed. No pus, no inflammation. With the use of Poland water and alkalies the urine, which had been high-colored and cloudy for a few days, cleared up.

On the eighth day the temperature, which had been normal since the operation, rose to 101.4° F. A drachm of castor oil by mouth brought it down to 100°, and at the same time caused much griping in the upper colon followed by a steady, copious discharge of fæces from the artificial anus, aided by a liberal irrigation above the spur. A troublesome cough from a bronchitis, with greenish, abundant sputum (which had started up on the seventh day) served to keep the temperature between 99° and 100° for ten days, after which it continued normal.

On the eleventh day he had a large dejection of soft, black fæces, that had evidently washed over the spur in the previous irrigations. He was now eating ordinary house diet, including many articles of food that he had not touched for months. At this time also he usually had several small dejections towards night, with moderate griping pain, which was controlled by a suppository of morphia and belladonna.

On the fourteenth day the nurse reported some small whitish lumps in the rectal discharges. After nearly recovering from the cough the patient sat up for a short time each day, although he did not gain strength as fast in the second week as he did in the first. The white lumps being reported again in the discharges, some were taken to Dr. F. B. Mallory at the Medical School, who reported them as consisting of masses of rather large, round, fatty degenerated cells.

In the third week, though he began to gain again, he complained of difficult, frequent and painful micturition, which cleared up under alkalies and digitalis. By the end of his third week, he sat up all day; the fistula was controlled by a small pad of cotton kept in place by an abdominal supporter, and he was able for the most part to pass his fæces voluntarily through the new anus. A few days later he was moved to his home, and again came under the care of Dr. Tilton until his death, May 4th.

At the time of his removal the fistula was kept open by daily passage of a No. 4 rectal bougie; there was no protrusion of the gut or mucous membrane, no excoriation, and very little leakage over the spur. The fæces passed voluntarily, with occasional help from irrigation. He was able to eat practically any food, and though considerably emaciated, was up and dressed for most of the day and free from the excruciating attacks of pain that he had suffered before operation.

On the other hand, he was losing flesh, was passing mucus and shreds from the rectum, and was liable to have a vesical upset at any time. The size of the tumor remained apparently the same, though the prostate was larger and more sensitive to pressure.

I saw him again at Christmas, with Dr. Tilton, and learned that for two weeks after his return he had held his own, but soon exhibited vesical trouble with very frequent and painful micturition, pain in the glans or along the urethra, and without any relief after urinating. As this might be explained by an hypertrophied prostate, Dr. Tilton passed a 23 F. soft catheter, meeting considerable resistance at the prostatic region. About two drachms of clear urine were drawn off. By rectum the finger came up against the prostate or growth bulging into the rectum and nearly occluding it, all identity of the prostate being lost.

There seemed to be no question as to the malignancy of the growth; and it was advised to keep the patient as comfortable as possible by opiates, etc. After this he gradually lost ground, with intermissions of apparent gain followed by profound relapses. Before long communication between the rectum and bladder was established and the vesical suffering persisted to the end. A few days before death he exhibited convulsions and other uræmic symptoms.

Autopsy seven hours after death, by Dr. Mallory, showed chronic adhesive pleurisy on left side. The pelvis was filled with a firm mass attached to the surrounding walls, and involving the bladder, rectum and sigmoid flexure. The central portion of the growth was ulcerated, and into it opened the upper part of the sigmoid flexure and the rectum. It also connected with the interior of the bladder by a fistulous opening. On section the surface of the tumor appeared gray and translucent, and, in places, gelatinous. The rectum below the growth contained several small, soft, papillary masses. Similar growths were present in the bladder near the fistulous opening. The bladder contained urine and fæces.

Microscopic examination of the tumor showed a well-marked connective-tissue stroma, containing irregular spaces lined with cylindrical, epitheloid cells, which in part had undergone hyaline degeneration.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 18, page [illegible])

CANCER OF THE RECTUM.

BALL[16] has contributed to the Royal Academy of Medicine in Ireland, the result of his experience in the treatment of this disease. He presented a table showing the results of excision in nine cases.

In one case (melanotic sarcoma), the patient remained entirely free from recurrence, and able to follow her occupation eight years after operation; in another (cylinder-celled epithelioma), the patient, a medical man, remained quite free from return six years after operation; in three cases, death followed operation, one being due to shock and two to septic peritonitis; while the remaining four lived for periods of from one to three years. He discussed the methods of reaching the disease higher up by division of the sacrum. Two of his cases had been performed in this way, both of which were successful. He considered that these improved methods had largely increased the scope of the operation. In a large proportion of cases unsuitable for excision, obstruction never became a prominent symptom; and these cases were much better left alone. Colotomy was, however, clearly indicated where obstruction was commencing, and should be had recourse to early.

He believes that lumbar colotomy will soon cease to be a recognized surgical operation, and considers that an incision in the left linea semilunaris is the best point to secure an artificial anus. His experience was based upon thirteen cases of colotomy.

On the other hand, Kelsey, of New York, has recently given his opinion as follows:[17] There is a choice between extirpation and colotomy, and the end results are not encouraging. He puts the immediate mortality at twenty per cent., and thinks that recurrence within one year is the rule. The cases where four years have passed without recurrence are very few in number. In some cases he would advocate excision, namely, those where the disease is low in the rectum, especially those beginning at the anus. These are curable, or, if not, recurrence is longest delayed. Cases in which the disease is extensive, recur rapidly, often before the wound is healed. Extirpation is a brilliant operation; but what is gained? In many cases life is ended at once, which by colotomy would have been prolonged with comparative comfort. Colotomy, especially the inguinal operation, relieves pain, the constant tenesmus and rectal discharges which are important factors in hastening the final result. It avoids intestinal obstruction. The patient can eat and sleep, gains flesh, and often thinks himself cured. He claims that colotomy and the terrors of an artificial anus, when properly managed, are not so black as usually painted. His summary is that the extirpation of the rectum has a very limited range; that the Kraske operation, although enlarging the field of operation, has not improved the results; that colotomy is almost free from risk, and in any series of a considerable number of cases will give a longer comfortable life. Extirpation is more often indicated in non-malignant than malignant stricture, but even here the advantages over colotomy are not sufficient to justify the increased risk in grave cases requiring extensive operative interference.

SURGERY OF THE GALL-BLADDER.

An excellent *résumé* by Pick[18] of Czerny's publication on the present status of this branch of surgical work merits attention. Czerny bases his conclusions on eighteen cases. He considers that cases without discomfort, even if the gall-bladder can be felt distended with calculi, should not be interfered with surgically. In these cases there may be short attacks of colic with jaundice; but they are readily relieved by medicinal treatment, and are not of frequent occurrence. The surgical cases are when the symptoms are severe, the attacks frequent, and the patient is not free from pain or discomfort during the remissions. The operative cases are classed either as those without long-continued icterus or with long-continued icterus. The cases without icterus often are difficult of diagnosis. Extirpation of the gall-bladder is not considered a desirable operation, since it does not prevent the recurrence of calculi in the dilated hepatic ducts; also, since the gall-bladder is valuable in forming a new outlet for the biliary current by its union (cholecystoenterostomy) to the duodenum in cases when the common duct is occluded. In the non-icteric cases the surgeon has to deal mostly with the gall-bladder alone, since the ducts, except the cystic, are patent. The method of operating in two sittings is indicated when the contents of the bladder is purulent. The method used where the immediate incision is made is to pack the gall-bladder in iodoform gauze so as to shut off the abdominal cavity; then incise, and wash out with a boric-acid solution. The advantage of the open abdominal wound is that the exterior and adjacent organs can be examined. When the bladder is opened after adhesions have formed, the interior of the bladder only is accessible, and the rest has to be left to nature.

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[16] British Medical Journal, January 7, 1893, p. 16.

[17] New York Medical Journal, November 12, 1892.

[18] Annals of Surgery, 1892, xvi, 356.

An attempt at suture of the bladder wound and its replacement in the abdomen should never be done except when the bladder is in a normal condition.

In cases of suppuration or stenosis of the cystic duct the formation of a temporary fistula is recommended.

The typical operation for calculi is incision — evacuation of calculi, suture of the gall-bladder, abdominal drainage for a short time. Extirpation is only indicated in severe or carcinomatous degeneration. When the common duct is occluded, operate as long as the patient's condition will permit. If the obstruction (stone or flexions) cannot be removed cholecystoenterostomy is recommended.

The incision recommended is a right-angular one, the vertical short arm in the linea alba. The horizontal arm immediately below the umbilicus and extending to the right. This, Czerny thinks, gives the best opportunity to investigate the ducts as well as the gall-bladder.

The risk to life is now less than for operations on the urinary bladder.

TREATMENT OF HYDROCELE.

V. Weiss has investigated the end results of the injection treatment of hydrocele at Billroth's Klinik since 1884. He incidentally obtained the following statistics: In 100 cases were 3 hæmatoceles, 1 spermatocele, 2 suppurating hydroceles, 6 hydrocele of the testis and cord, 88 hydrocele of the tunica vaginalis. In 8 cases the hydrocele was double, 50 cases right, 42 cases left. The injection used was in most cases the officinal tincture of iodine two parts, water one part. Thirty grammes was the amount usually injected: in young persons and children, a few grammes; in recurrent cases and large sacs, sixty grammes. After ten minutes the injected fluid was removed. In 50 cases where the end result was obtained, recurrence was found ten times — an old man (age seventy-two), four middle-aged patients, and in five young children. The rate of recurrence was found to be one-seventh in men above thirty years, and in younger people one-third. Hydrocele of the cord recurred three times in six cases.

He concludes that the iodine injection gives the best result in middle-aged patients, and is much less satisfactory in young persons. Hæmatocele, hydrocele with suppuration, cases in which a tumor of the testis is suspected, and relapsed cases with thick walls are not to be treated by this method. The method by incision is indicated when a recurrence after treatment by injection has occurred in young persons; also in cases of hæmatocele, suppurating hydroceles, and in relapsed cases with thick walls.

PROSTATECTOMY.

Tobin[19] proposes, after a suprapubic cystotomy, that a straight urethral ecraseur be passed to a point where it touches the prostate at the level at which it is desired to operate; a wire loop is then opened and made to encircle the portion that is to be removed. The loop is kept imbedded, scissors being used if necessary, by two fingers placed in the abdominal wound. This removes such a portion of the prostate as is necessary to restore the function of the sphincter. The Trendelenburg position is used. No obstruction occurred in one case at the end of six months. He claims for this method the following advantages:

(1) As much of the gland as interferes with the escape of urine is removed, and no more.

(2) Such portion is removed in a satisfactory manner, for the wire cuts up to the portion where the instrument has been stopped by the obstruction.

(3) A smooth surface sloping into the urethra is left instead of the more or less rough one that must result from taking away the gland piecemeal with a forceps.

(4) There is very little hæmorrhage.

SUPRAPUBIC PROSTATECTOMY.

Mr. G. Buckston Browne[20] has contributed an interesting article on this subject, and arrives at the following conclusions:

(1) Suprapubic prostatectomy should never be undertaken at the outset of catheter life unless regular catheterism is impossible.

(2) The operation should never be undertaken as long as the ordinary catheter life is a tolerable one.

(3) If from any of the causes I have detailed, catheter life becomes intolerable, suprapubic cystotomy should be resorted to. By means of this proceeding the bladder can be thoroughly explored and any stone removed, which in these cases may easily have escaped detection by the more usual methods of examination. The intravesical growth if it is found to exist — and of this existence we can never be sure until the finger is in the bladder — can be fully examined, and removed if the operator thinks right to do so. If he deems removal inadvisable, or if there is nothing which can be removed, he can leave the patient with a suprapubic tube, for permanent afterwear, with the certainty that he will have materially improved the condition of the patient.

(4) Should the operator decide to remove the prostatic obstruction, there is a very good prospect, but not a certainty, of the power of natural micturition being restored to the patient.

THIERSCH SKIN-GRAFTING.

Urban[21] reports the results of the cases treated by this method in the Leipzig clinic. The value of the method is in the rapidity with which the surfaces and lesions are healed, and in the permanency of the cure, which Urban states is confirmed by the results of the cases investigated by him. Three hundred and fifty cases from October 1, 1886, to October 1, 1891, were classified as follows: injuries 45, burns 10, neoplasms 79, plastics 15, nævi 6, contractions and scars 13, bone necrosis, 29, inflammations 15, lupus 26, bone ulcers 76, miscellaneous 36. When the operation was carefully and thoroughly done the subsequent contraction was insignificant. More marked contraction occurred only when the surface had either not been covered by the grafts or when the grafts had fallen off or failed to grow. Urban considers that any surface of living tissue is a favorable foundation for the grafts, provided that it is a fresh wound surface. By consulting the original article the reader will find much valuable information concerning this method.

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[19] Medical Press, September 21, 1892.
[20] British Medical Journal, March [illegible], 1893, p. [illegible].
[21] Deutsch. Zeitschr. f. Chir., 1892, Bd. xxxv, p. [illegible].

A case of Sick's,[22] of Hamburg, is interesting in this connection. An attempt was made to cover a very large denuded area on the head of a child, where the scalp had been torn off. The skin was taken from another person. The result was at first successful, but at the end of two or three weeks the skin broke down and the ulcer reappeared. The treatment was successful after a third operation, when the grafts had been taken from the patient's own skin. Experiments to transplant skin of animals have, according to Sick, led to no especial successes.

THIERSCH TREATMENT OF LUPUS BY EXCISION.

The methods that Thiersch[23] is reported as now employing in his practice is by a thorough removal of the affected tissues by dissection. The diseased area is excised, the line of incision being in healthy tissues at least three centimetres distant from the borders of the infected area. The flap thus outlined is dissected off. If the resulting defect is small enough to permit, the wound is closed by suture or by sliding together skin-flaps as in an ordinary plastic operation. If too extensive to allow such a closure, it is grafted *à la* Thiersch, and dressed with a moist sterile dressing ("natural" salt solution). His results are sixteen cases, with immediate recovery, among which three have remained well 16 months, 17 months and 24 months respectively. The other results of this series are reported as very satisfactory and much better than those by any other known method. W. Kramer[24] has also reported ten cases which he has during the last two years treated by the Thiersch method, and which have to date been fully cured. He removed areas from one to three inches in diameter. He would not employ this method when extensive areas of the face are involved, and emphasized the fact that an early operation will prevent the necessity for such extensive dissections.

CURE OF ANEURISM BY BACCELLI'S METHOD.

Pritchard[25] reports a case of Bourget, at Lusanne, Switzerland, in which an aneurism of the descending aorta was treated by this method. It had passed by pressure-absorption the body of a vertebra and two ribs and formed a tumor between the spine and the scapula. A watch-spring two millimetres broad and thirty-seven centimetres long, with a spiral five centimetres in diameter, after being boiled in hydrochloric acid (to sterilize it and to form a film of ferric chloride to start the coagulation process) was introduced through a small slit into the sac. The slit was then closed. The subjective symptoms were relieved. One month later the tumor was found by exploratory puncture to contain no blood, and the pulsations had decreased in extent and intensity. Improvement at time of report was steadily progressing.

VENESUTURE.

Schede has contributed to this subject the history of a case in which a defect two centimetres long in the vena cava inferior caused-during a nephrectomy for carcinoma was closed by suture. Three weeks later the patient died from acute fatty degeneration of the heart, liver and kidney. A post-mortem examination showed a firm closure of the vein. At the site of suture there was a slight curving in of the surface. There was slight diminution in the caliber of the vein at that point. The intima was closely united, and there was no evidence of thrombus formation in the neighborhood of the union. The suture was opposite the ingress of the left renal vein, and both that and the vena cava contained liquid blood. In his reports,[26] Schede considers the other methods of dealing with wounded veins, both by suture and clamping, and concludes that a continuous suture which he has had opportunities of testing, is preferable to other methods. It is easier to apply, is surer and less dangerous. The clamp method is liable, in his opinion, to be followed by secondary hæmorrhage. It is preferable to a lateral ligature in that it involves less of the vein wall. In cases where this is friable, as in adhesions to tuberculous or carcinomatous growth, glands, etc., a lateral ligature is difficult or impossible, on account of the loss of elasticity of the vessel wall. Schede recommends the use of the finest catgut for this suture. He sets the suture with a fine Hagedorn needle. The rapid swelling of the gut checks hæmorrhage from the suture punctures.

This subject has also been considered in a valuable article by Niebergall, of Marburg.[27] He enumerates the different methods employed to check hæmorrhage from lateral wounds of large nerve-trunks, as follows: (1) compression by tamponing; (2) lateral ligation; (3) suture of the vein; (4) lateral clamps, instrument left in position for a time.

(1) This method is adapted, according to the writer, to cases where a vein is wounded through a small punctured wound of the soft parts by a small puncture. Here union of the vein is possible without obliteration of its lumen. Where the vein wound is large, the lumen is not preserved nor is the bleeding surely controlled. (2) With the lateral ligation the vein is healed, but the lumen is always narrowed to a greater or less extent proportionate to the amount of wall included in the ligature. It has given many good results, but is liable to slip and allow hæmorrhage. It cannot be used in large wounds since it diminishes too much the calibre of the vein. It cannot be used when the vessel wall is friable since the ligature cuts through. (3) This is recommended as good treatment. (Niebergall has collected ten cases.) There is reason to believe that the calibre is less diminished than by other methods. It is adapted to smooth longitudinal or transverse wounds. It can be used in wounds over one-half a centimetre long, with essential diminution of the calibre of the vessel. It closes

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[22] Archiv f. Klin. Chir., 1892, Bd. [illegible], p. [illegible]

[23] [illegible] Deutsche Zeitschr. f. Chir., 1892, Bd. xxxiv, s. 238.

[24] [illegible], 1892, Bd. xx, [illegible].

[25] Annals of Surgery, 1892, xvi, 16.

[26] Arch. f. Klin. Chir., 1892, xliii, p. 338.

[27] Deutsch. Zeitschr. f. Chir., 1892, xxxiii, p. 540.

the wound more securely, since it cannot slip. (4) In regard to the lateral clamp, [illegible] has based his conclusion on 53 cases. He considers it a reliable method. If the wound is kept aseptic, there is no bleeding; also when the forceps are carefully removed. The lumen is preserved. The time for removal of the clamp is twenty-four hours. The best type of instrument is the Pean hæmostatic forceps, which is light and exerts a somewhat elastic pressure. At first there is only a cementing together of the wound-edges of the intima, which in fourteen days becomes a firm scar. In twenty-four hours this cementation is comparatively firm.

(To be continued.)

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, March 1, 1893, DR. A. POST in the chair.

DR. BRADFORD read a paper on

RECENT ADVANCES IN THE TREATMENT OF ROTARY SPINAL CURVATURE.[1]

DR. J. E. GOLDTHWAIT: I brought these jackets to show the effect of treatment upon some fixed curves. The great difficulty of treating spinal curvature in the out-patient clinic is, you treat the patient five minutes in the course of the day and the rest of the time they go about with the superincumbent weight, tending to increase the deformity. The child of which this jacket represents the form at the time of beginning this treatment had been under treatment a year or two with practically no improvement. She was taken to the House of the Good Samaritan in November, and put under rigorous treatment. In the morning she was given exercises for muscular development, and for keeping the spine limber. Then she was suspended, and the deformity forcibly corrected for one-quarter of an hour. Following this, she was put on a frame similar to the one here, and would lie upon that for an hour. After that she was up and about until noonday wearing a jacket which was put on in the overcorrected position. In the afternoon she went through the same process again; and in five weeks the rotation was corrected very decidedly.

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Recent Literature.

Tuberculosis of Bones and Joints. BY N. SENN, M.D., Ph.D., Professor of Surgery and Clinical Surgery, Rush Medical College, Chicago, etc. 500 pages, illustrated. Philadelphia and London: F. A. Davis Company.

The book, as its title states, is devoted to a thorough discussion of this subject in all its branches. It treats first of the discovery and history of the bacillus and its resulting processes. It describes the histology and pathology of tuberculosis. A chapter is devoted to its causation. Then the clinical symptoms, diagnosis, prognosis and treatment of bone tuberculosis in general is described. Next tuberculosis affecting joints and synovial membranes is considered. The next one hundred and fifty pages are devoted to the various methods of treatment, including that by tuberculin and various operations. The remaining seven chapters treat of the affections of special bones.

The book is a very good presentation of the modern ideas on bone tuberculosis. It is clearly and concisely written, and is the result of extensive compilation of the literature of the subject, especially the German, to which is added its author's clinical experience. The facts in the chapter on etiology are interesting, especially the author's views respecting heredity. Also the chapter on prognosis. The pathology is chiefly German. In the discussion of treatment the writer has paid more attention to operative methods than to details of conservatism. The best appliances from an orthopedic standpoint are either briefly described or omitted, and much could be added of value to this portion of the work. The book is, with this exception, a valuable one, and especially from a pathological basis distinctly a contribution to surgical literature.

Manual of Practical Medical and Physiological Chemistry. BY CHARLES E. PELLEW, E.M., Demonstrator of Physics and Chemistry in the College of Physicians and Surgeons, etc. New York: D. Appleton & Co. 1892.

This manual contains the details, amplified with descriptive and explanatory text, of the laboratory course of instruction in chemistry given at the College of Physicians and Surgeons. This course has been prepared by the author, with the assistance of Prof. C. F. Chandler, after visiting or interrogating most of the leading medical schools in this country and abroad. The courses in chemistry offered by these schools are not, in the author's opinion, such as are best adapted to the requirements of the medical student. He thinks that too much attention is given to pure chemistry, and offers this course, which is substantially one in physiological chemistry, as a substitute.

While the author's criticism may perhaps apply to the conditions existing at some of the medical schools, it is certainly not true of all the schools. Moreover, in preparing a substitute course, he has himself gone to the opposite extreme. A course in physiological chemistry should certainly be included in the medical curriculum. But before undertaking the study of this branch, the student should have some acquaintance with the fundamental principles of chemistry, and a certain amount of laboratory training in analytical chemistry. Nothing of this kind is included in the course recommended by the author; but the student is at once confronted with complex chemical formulas and equations without apparently having been given any opportunities for learning their significance.

We have no important criticism to make of the course laid down by the author, regarded as a course in physiological chemistry. The plan is, on the whole, a good one. The subjects included in it are, in the main, those with which the student should have a practical acquaintance such as can be acquired only in the laboratory. The course cannot, however, be properly given in the time suggested by the author. A course in urinary analysis alone should occupy a large part of the time assigned by the author to the whole course.

The text of the manual contains a number of inaccurate statements, and cannot, therefore, be recommended as a whole.

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[1] See page [illegible] of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 11, 1893.

[illegible]

[illegible] for the United States, Canada and Mexico; $6.56 per year for all [illegible]

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 Washington Street, Boston.

All letters containing business communications, or referring to the [illegible], should be addressed to the undersigned.

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283 Washington Street, Boston, Mass.

THE TYPHUS EPIDEMIC IN PARIS.

An epidemic of typhus has lately broken out in the prisons of the Department of the Seine.

There are three foci whose common origin appears to be the Dépôt of the Prefecture of Police: one at Nanterre, another one at the Infirmerie de la Santé, the third in the hospitals, and in particular, at the Hôtel Dieu.

At Nanterre, the first cases date from March 20th, and the first death took place March 29th. The first five cases were regarded as affected with *la grippe* or typhoid fever, and the diagnosis was not corrected and the patients isolated till March 31st. From March 20th to April 10th there were 26 cases, of which 11 proved fatal.

At the Prison de la Santé, since April 1st, there have been 15 cases and 8 deaths. At the Hôtel Dieu, there have been 13 cases since April 10th and 2 deaths.

There has been one case only in the city at large, but several of the hospitals, other than those mentioned, have reported a few cases which are carefully isolated. It is believed that the infection was brought early in March by a tramp from Amiens, where there has been an epidemic.

The following characters have been noted in this epidemic: The first symptoms appear after an incubation of about twelve days. From the onset the temperature is very high (40° C.); very intense ataxo-adynamic symptoms are manifested. There are few if any intestinal troubles; the tongue is dry and parched. The eruption is very variable; intense in some, hardly noticeable in others. Death occurs at about the end of the first week in fatal cases. The autopsy is negative, with the exception of softening of the spleen which has generally been found.

At the meeting of the Academy of Medicine, April 18, 1893, M. Kelsch read a paper on the etiology of typhus fever. He defended the view — based on three epidemics which he had witnessed in Algiers — that typhus does not originate always by importation, but that it may also develop *de novo* ("*sur place*")! Overcrowding, extreme poverty, filth and wretchedness are without doubt the most apparent causes of the revivification of the germs. The special organism of this disease is still unknown; "but it is permissible to suppose that it inhabits our natural cavities in the state of inoffensive parasites. Absolutely harmless in the normal conditions, this germ is susceptible of passing to a state of pathogenic activity when its human environment undergoes profound deteriorations by reason of wretched nutrition and other depraved physiological conditions."

At the same meeting of the Academy a note was communicated by MM. Dubiet and Bruhl relative to a diplococcus found by them in typhus exanthematicus. Their work is based on nine observations, six of which were followed by an autopsy. In all these cases, Dubiet and Bruhl have found in the blood of the peripheral circulation and in that of the spleen a very slender micro-organism for which they propose the name of *diplococcus exanthematicus.* In all their autopsies these writers have found this micro-organism, often in extreme abundance, in the mucus of the nasal fossæ, of the pharynx, of the larynx, and in those special *foyers* of pneumonia which are never wanting in typhus patients. The microbe can be cultivated in a state of purity. Its location in the different organs mentioned, explains most of the clinical phenomena of typhus, the intensity of the respiratory symptoms and the extreme contagiousness of the disease, as the microbe is found in great abundance in the sputa.

This micro-organism would seem to be the same as that discovered by Hlava and Thoinon; but there is yet no proof that it stands in causal relation to the disease.

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SANITATION IN RAILWAY CARS.

The National Association of Railway Surgeons has done very much already in protecting life from the results of accidents on railroads and in disseminating a wider knowledge of what might be called railway surgery. Now they are directing their attention to the subject of general passenger-train hygiene, upon which subject Dr. G. P. Conn, of Concord, N. H., has recently read a paper of great interest, under the title of "Costs and Compensations."

In calling attention to the facts that very few coaches have anything like an adequate system of ventilation, and that, as a rule, the employés of the roads are not instructed in such as exist, he considers the difficulties in the way of improvement, but believes that they are not insurmountable. He well says:

"While clean cars and well-ventilated coaches require considerable outlay of money, yet to a through line the advertising thus secured will return a good dividend on the amount invested, and afford the management as large a compensation as would a liberal supply of printer's ink invested in describing the picturesque, the beautiful and the other natural advantages of their line. On the other hand, suppose the printer's ink be used in showing up, on a through line, the unsanitary condition of the cars, the poor ventilation, the filthy condition of the water-closets, the fact that the car windows are so covered with dust and dirt that the curtains are unnecessary, that trainmen are noisy, uncivil, etc., how long would it be, in this enlightened age, before the tide of travel would set toward the rival line offering better hygienic accommodations?"

To this end, not only is it necessary to consider hygiene and sanitation in the construction of cars, but the service must be competent to look after their care, as the public is getting critical in these matters. The trainmen could be easily taught to keep their cars clean, and to successfully manage the ventilating and heating apparatus; but it is quite important that there should be a head or sanitary expert to supervise them. Moreover, "the patron of the road who is enabled to make a journey across the continent without suffering the discomforts arising from the lack of an intelligent care of the heating and ventilating of coaches, and who can arrive at his destination in a good, sound, healthy, vigorous condition, ready for business so soon as the train comes to a full stop, will never forget that line nor fail to draw congratulatory conclusions regarding the management whose intelligent care has been the means of rendering such results possible."

Many of the great railroads have built hospitals, and employ able surgeons to look after them. Others have local surgeons throughout the country to attend to their passengers and employés who are injured by accidents in various ways. In all this, which involves great expense, there has been a gain, direct or indirect, or both, to the railroads. Dr. Conn regards it to be the duty of these surgeons to advise their companies in the matter of hygiene, and to demonstrate to them that the interests of their lines lie in the direction of not losing patronage by reason of the sanitary neglect that a little effort on the part of the surgeons might prevent.

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THE FUNCTIONS OF THE GASTRIC MUCOUS MEMBRANE.

At the Twelfth Congress of Internal Medicine, Wiesbaden, April 13th, Von Mering detailed some interesting experiments made to elucidate the absorbent power of the gastric mucosa, the results of which investigations were as follows:

The evacuation of the contents of the stomach takes place at intervals by means of the rhythmical opening of the pylorus. A liquid aliment escapes more quickly from the stomach than a compact aliment such as meat or bread, even when strongly impregnated with water.

The stomach is an organ of excretion much more than an organ of absorption.

It does not absorb water. When water charged with carbonic acid is ingested, the stomach does not absorb the water, but it absorbs largely the CO_2.

Alcohol is absorbed in large proportion by the stomach.

Sugar, of whatever kind, is absorbed in moderate quantity when in solution in water, and in greater quantity when in alcoholic solution.

Dextrine and peptone are absorbed by the stomach, but in less proportion than sugar.

The quantity of substances absorbed augments with the degree of concentration of the solution. Chloride of sodium, iodide and bromide of potassium are absorbed in notable proportion.

Conjointly with the absorption of the aforenamed substances, there is produced in the stomach an aqueous secretion, more or less active, whose importance is generally in direct relation with the quantity of substances absorbed. There is an abundant secretion of water in the stomach, even when there is no free HCl secreted.

Gastric absorption resembles in many respects the physical process of diffusion (endosmosis and exosmosis).

Gastric dilatation, in cases of pyloric stenosis, is due not only to the pressure and bulk of the aliments introduced and stagnating in the stomach, but also to the augmentation of volume of the contents of the stomach by reason of the quantity of water furnished to the stomach by the organism (endosmosis) in ratio of the proportions of nutritive substances which penetrate the blood from the gastric cavity (exosmosis).

From a therapeutic point of view, it is well, then, in cases of gastrectasis to exclude alcoholic beverages, and to advise the injestion of nutritive substances in a state of concentration, as well as consecutive lavages of the stomach. To combat the thirst, it is better to give lavements of plain water or salt and water than to allow the patient to drink water, as the indication is to limit as far as possible the excretion of water by the stomach.

Dr. Unverrecht, of Magdeburg, in commenting on the paper of Von Mering, said that he had himself observed that in cases of dilatation of the stomach, water is badly absorbed and the urine scanty, and he has deduced therapeutic conclusions similar to those of Von Mering. In such cases, a dry diet, lavage of the stomach and lavements of a weak solution of common salt, prescribed methodically, not only give real relief, but cause an increase in weight, for in a case where the dilatation was due to carcinoma, he has seen the weight increase five pounds in eight days under the influence of this treatment.

Ewald, who was also present, stated that the clinical observation of diseases of the stomach has enabled him to study the various forms of dilatation and their stages. In gastrectasis, patients eliminate more water than they ingest, hence the name *gastrosaccorrhœa* applied to this condition. His experience was largely corroborative of the conclusions reached by Von Mering. The experiments of the latter were made with healthy adult dogs, in which pyloric fistulæ were established.

MEDICAL NOTES.

NEW HOSPITAL AT KINGSTON, N. Y. — The corner-stone of a new hospital has been laid at Kingston. Its estimated cost will be $16,000.

ANOTHER INTERNATIONAL SANITARY CONFERENCE. — It is rumored in Paris that, in sequel to the labors of the Dresden Conference, France will shortly invite foreign powers to send representatives to a further Special Sanitary Conference at Paris, to discuss measures to prevent the invasion of cholera.

SMALL-POX IN ENGLAND. — According to the last *British Medical Journal* news of small-pox in England continues to show that the disease is slightly on the increase. During the first three months of this year there were 541 cases reported in London. About one-half of the cases occurred in persons without settled lodging or habitation.

MONTRETOUT RESERVOIRS. — The Paris Municipality has celebrated the opening of the Montretout Reservoirs, which are to raise the daily water-supply from 150,000 to 270,000 cubic metres, thus putting an end to scarcity in dry summers. The Municipality of 1887 purchased the seven springs of the river Avre, tributary of the Eure, on the southwest of Paris, and, after much local opposition, operations were commenced in 1889 for bringing this water to Paris. It is of great purity — equal, indeed, to that of the Vannes, which is brought from beyond Fontainebleau. The collector is near the junction of the Vigne and the Avre, and an aqueduct, 63 miles long, by turns under and above the ground, brings the water to St. Cloud, where there is a reservoir containing 400,000 cubic metres. The cost has been 32 million francs. The most expensive portion of the work was a tunnel, more than four miles in length, at Versailles.

NEW ENGLAND.

IMMIGRATION. — During April, 6,388 immigrants landed in Boston, nearly half of them from Ireland. This is nearly two thousand more than the number landed here in April, 1892. These are the last to arrive before the new immigration law takes effect.

SMALL-POX AT QUARANTINE. — A case of small-pox was taken from the steamer *Prussian*, from Glasgow, two weeks ago at the Boston quarantine, and a second case a week later was reported while the vessel was at the dock, and also sent to the island.

THE NEW HOSPITAL AT CLINTON, MASS., was formally dedicated on May 6th. The building cost $8,000 and has been furnished by private gifts.

NEW YORK.

ST. LUKE'S HOSPITAL. — The ceremonies attending the laying of the corner-stone of the new St. Luke's Hospital, at West 113th Street and Morningside Drive, were held on the afternoon of May 6th. The seats for the invited guests were arranged in the form of an amphitheatre, so that all could have a good view. Among those present were the managers and medical staff of the hospital, the trustees of the Cathedral of Saint John the Divine, the trustees of Columbia College, and a large number of vested clergy. All met in the Pro-Cathedral building and marched in procession to the neighboring hospital grounds. Bishop Potter conducted the ceremonies, and addresses were made by Mr. George Maccullach Miller, President of the Board of Trustees, and by Bishop Littlejohn of the Diocese of Long Island. The plan of the new hospital, the architect of which is Ernest Flagg, consists of an administration building, with four pavilions grouped around it. These are to be five stories high and the outside walls will be of white pressed brick, with trimmings of Indiana white sandstone. From the centre of the administration building façade, a massive tower will rise, terminating in a dome and an observatory, about one hundred and forty feet in height. The circulation of air will be complete for each building on all four sides, and there will be open arcades at every story. The main entrance to the hospital will be through the base of the tower into a grand vestibule, fifty feet long and thirty feet wide, and at the end of this a flight of marble steps, six feet in height, will lead to the large and commodious chapel, which is to be situated directly in the rear of the administration building. A central corridor will traverse the latter, with grand staircases and elevators in circular turrets at the extremities; and from this, corridors will branch off diagonally to the outlying pavilions. The two pavilions to the south, overlooking the cathedral grounds, will contain the principal wards with twenty beds in each, and one will be for male and the other for female patients. The northeast pavilion will be devoted to private patients, with accommodations in suites and single rooms; and the northwest pavilion will be the nurses' home, the upper floors containing a hundred separate sleeping-rooms. There will be an out-patient department in basement of the northwest pavilion, and a separate building, entirely detached from the main structure, will contain the morgue, autopsy room and pathological laboratory. The second, third and fourth floors of the administration building will contain wards along the southern front for children. On the top floor will be the operating-room. The amphitheatre will occupy the tower, and close by it will be two smaller operating-rooms. The kitchen will be on the fourth floor of the building at the rear of the administration building and adjoining it will be the serving room from which food will be distributed to the entire hospital. On the roofs of three of the buildings there will be small, ornamental structures for isolating wards for men, women and children respectively, and on those of two others, solaria for males and females. In the administration building there will be a fine medical library, and there will be accommodations for thirty resident physicians. The cost of the entire work is estimated at $3,000,000.

PHILADELPHIA.

Sanitary Condition of the City. — The City Board of Health has instituted a house-to-house sanitary inspection, which is now approaching completion. The small streets have been cleaned thoroughly, and disinfecting solution will be regularly sprinkled by carts during the summer in the crowded and disease-breeding back alleys, which are so difficult to keep in good order. The keeping of hogs within the city limits has been forbidden, and the mal-odorous hog-pen has been permanently banished. The garbage in the southern half of the city is now incinerated by a crematory, which is giving much satisfaction. A large sum of money has already been expended in paving a very great number of small streets, in the least sanitary part of the city with asphalt or some other form of impervious pavement. Housekeepers have been urged to thoroughly cleanse their premises, and to put them in a first-class condition. The health-officer has cleaned alley-ways in the rear of 5,000 houses recently, and the work of inspection and removal of nuisances will continue during the summer. The river and bay are well protected both by national and local quarantine. The water-supply is not entirely satisfactory to the health authorities, but is pronounced by Dr. Abbot, who has made daily tests since the first of last January, of fair quality and indeed better than that of other large cities. The Board of Health recommends that all water used for drinking purposes shall be boiled and strained before use. With these precautions, it is believed that cholera will not gain a foothold here; but if it does, the City and State Boards of Health will limit the epidemic by isolation and prompt disinfection. The city is now in excellent sanitary condition.

Appointment and Resignation. — Dr. Charles K. Mills has been elected Professor of Mental Diseases and of Medical Jurisprudence in the University of Pennsylvania, in the Medical Department, where he has been a lecturer on mental diseases for many years. Dr. Peter D. Keyser has resigned from the chair of Ophthalmology in the Medico-Chirurgical College.

◆

Miscellany.

MEDICAL LEGISLATION IN TENNESSEE.

The Legislature of Tennessee have recently passed the following Act to prevent the spread of communicable diseases and to fix the penalty for the violation of the Act. It reads essentially as follows:

Section 1. That whenever any case of small-pox, yellow fever, cholera or other communicable disease exist (except any venereal disease), or is suspected to exist in any household, it shall be the duty of the head of said household to immediately notify the municipal or county health authorities of the place.

Sect. 2. That whenever any physician, surgeon or practitioner of medicine shall know or suspect that a person, or persons, whom he has been called to visit, or who has been brought to him for examination, is infected with any of the aforementioned diseases, he shall immediately notify the health authorities of the town or county in which said diseased person, or persons, are found.

Sect. 3. That it shall be the duty of all municipal or county health authorities, without delay, upon receiving such notice as above provided, to promptly enforce such rules and regulations as the State Board of Health may prescribe, having for their object the prevention and restriction of the disease or diseases aforementioned in Section 1 of this Act.

Said local health authorities shall further, upon the receipt of notice of existing or suspected disease, notify the Board of Education of such municipality, or the County Superintendent of Public Instruction, of the facts in every case, and said public school authorities shall not allow any pupil to attend public school from a house while any inmate of same is sick of small-pox or other communicable disease, or during the period of two weeks after the death, recovery or removal of such sick person.

Sect. 4. That it shall be the duty of every municipal or county board of health in this State, upon receiving information of the existence or suspected existence in their respective jurisdictions of small-pox, cholera, yellow fever, scarlet fever, diphtheria or other disease dangerous to the public health, to immediately notify the State Board of Health of the fact, and, in addition, on the first of each month make a written report and forward the same without delay, of all communicable diseases occurring in their respective jurisdictions for the month last preceding.

Sect. 5. That any individual or individuals mentioned in this Act, who shall wilfully neglect or refuse to comply with either of the above provisions, shall be guilty of a misdemeanor, and upon conviction shall be fined not less than ten or more than one hundred dollars, or confined in the county jail for a period of not more than three months.

Sect. 6. That all Acts or parts of Acts in conflict with this Act be and they are hereby repealed, and that this Act take effect from and after its passage, the public welfare requiring it.

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CHOLERA AT THE GERMAN CONGRESS OF INTERNAL MEDICINE.

At the Twelfth German Congress of Internal Medicine at Wiesbaden, the first day was devoted to a discussion of cholera. The subject was introduced by Dr. Rumpf, of Hamburg, who summed up his observations as follows:

(1) The comma bacillus must be considered as the real cause of Asiatic cholera. Its presence in the intestines, however, does not inevitably give rise to the characteristic symptoms of Asiatic cholera or even of choleraïc diarrhœa.

(2) The fact that this bacillus is found in persons in apparently good health may be explained by its losing its virulence temporarily or permanently. During an epidemic it may pass, without causing any disturbance, through the alimentary canal of an individual without losing its infective power which indicates that other factors must assist it in its action on the organism. These assisting causes of cholera must be looked for in the individual predisposition rather than in the conditions of time and locality, although the locality undoubtedly at times influences the predisposition.

(3) The personal predisposition to cholera is based chiefly on disorders of the stomach and intestines caused by dietetic errors or by other pathogenic factors. Attention must be called here to the simultaneous occurrence of epidemics of cholera nostras and true cholera.

(4) The comma bacillus owes its virulence to the

production of toxines which exert a destructive action on the epithelium of the intestine and kidney and a paralyzing action on the circulation and on the heat production. The coma is probably due to their accumulation.

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THERAPEUTIC NOTES.

A Cod-Liver Oil Emulsion. — The *Practitioner* gives the following simple formula:

℞ [illegible] . . . . . . [illegible]
[illegible] . . . . . . [illegible]
[illegible] . . . . . . [illegible]
[illegible] . . . . . . [illegible]
Misce.

Tonic Laxative. — We find the following in the *Pharmaceutical Era.*

℞ [illegible] . . . [illegible]
[illegible] . . . [illegible]
[illegible] . . . [illegible] M.
[illegible]

Diuretic and Cardiac Stimulant. — The *Practitioner* gives the following:

℞ [illegible] . . . . [illegible]
[illegible] . . . . [illegible]
[illegible] . . . . [illegible]
[illegible] . . . . [illegible]
[illegible] . . . . [illegible]
[illegible] . . . . [illegible]
Misce. Fiat mistura, [illegible]

Symphysiotomy on a Man.[1] — At a recent meeting of the Paris Academy of Medicine, Dr. Albarran presented a man upon whom he had operated for epithelioma of the bladder. The neoplasm had been removed two years before by suprapubic section, but it had returned. The author performed symphyseotomy, by means of which a separation of forty-two millimetres between the pubic bones was obtained, thereby exposing a considerable surface of the bladder. A segment of this viscus, six by four centimetres in extent was removed, and with it the new growth. Recovery was complete, and the patient is now able to walk without the slightest inconvenience.

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OBITUARY.

BENJAMIN SHURTLEFF SHAW, M.D.,

Died, May 2, 1893.

No more familiar name could be erased from the roll of Boston physicians than that of Dr. Shaw. No one better entitled than its possessor to respect and honor for services well and faithfully performed, could cease from labor in a community where his whole life had been passed.

A long and successful connection with the Massachusetts General Hospital as its first resident physician, — an office developed into great usefulness by his sound judgment and administrative skill, — brought Dr. Shaw into close and friendly relationship with the physicians of Boston, and, in fact, of all New England, and into daily contact with the public, — its wealthy, refined and charitable representatives, as well as its poor and needy applicants for medical relief. By no single class was he more intimately and pleasantly known than the younger medical men graduating from the Harvard Medical School. The many house physicians and surgeons of the hospital who served under him in successive years cannot have forgotten his consideration, his tact, or his personal kindness, which dealt lightly with their omissions, and appreciatively with their devotion to duty.

Although Dr. Shaw served for many years after resigning his executive office as visiting physician of the hospital, his tastes attracted him to scientific rather than practical medicine. From his school days he took great interest in natural history, comparative anatomy and chemistry. His earliest medical communications were in the line of the latter study. His micro-chemical papers on "The Analysis of the Blood," "Colored Prismatic Crystals," "A Peculiar Form of Uric-acid Crystals," and on "Crystals of Urate of Potash," are still remembered for their novelty, and, at the time of their publication, for their advanced research.

Throughout life he kept in touch with all that was new in general science; and his methodical inclinations and keen power of observation induced him to follow up a variety of intellectual pursuits. He was a student of French history, and familiar with European politics. Stimulated by the opportunities furnished by several visits abroad, he became a reader and collector of books in a number of interesting specialties. The natural conservatism of his ways of thought in no degree diminished his lively interest in professional progress, in the higher learning of his younger colleagues, and especially, — despite the nearly half-century since his graduation, — in the prosperity of his college and of its medical school.

Industrious, self-reliant, active physically and mentally, cheerful and bright in conversation, devoted to his home and family, always ready to manifest his amiable delight or his sympathy in the weal or woe of his friends, he bore his own afflictions with fortitude, and took the approaches of age and failing health philosophically and patiently.

The narrowing circle of his contemporaries will remember Dr. Shaw as always a loyal and high-minded associate. The public will gratefully recall his official services, and his wise and judicious attitude as a physician, both in hospital and private practice. Those who were intimate with him will feel his loss in all which pertains to companionship with a true and honorable gentleman.

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Correspondence.

LETTER FROM CHICAGO.

THE WORLD'S COLUMBIAN EXPOSITION.

Chicago, May 7, 1893.

Mr. Editor: — Some items in regard to the opening week of the World's Columbian Exposition as it is officially known, or the Chicago World's Fair as it is known colloquially in the ordinary language of the people, may not be amiss even for professional readers. First of all, the weather conditions prevalent at Chicago during the past two weeks make it evident that the general practitioner, even more than the intending visitor, should inform himself as far as possible of the usual and probable climatic and hygienic influences to which visitors to the windy city are liable to be subjected, that he may advise his patients accordingly. He should know more about these particulars than practitioners sometimes do about health-resorts to which patients are sent and trips for the benefit of change which patients are sometimes advised to take.

For instance, the air of Chicago in the early spring, especially when the wind comes off Lake Michigan from the east and northeast, as is its common custom, more nearly resembles that of London and the coast of the British Channel at the same season than is generally realized at the East. The Exposition grounds are well situated in many respects; but the grounds, as well as the exhibits, are exposed, and visitors should take warm clothing with them even through June. Even an acquaintance with the New England sea-coast at the same period cannot be regarded as a sufficient protection. How many neuralgias, rheumatisms, and catarrhal affections late visitors to the Fair have taken away with them, among other souvenirs, statistics will not tell us; but it is safe to say that they have been not a few. Evening electric illuminations of buildings, fountains and boats are about to begin; but their undoubted beauty and attractiveness will be of a kind which woos but to betray, unless those attending them are warned to be prudent and careful. The air in the buildings is as yet damp, raw and penetrating. When these influences are combined with the fatigue incident to tramping about all day and looking at the exhibits, there are present factors sufficient to induce systemic disturbances in the careless, even though the ingesta of food or drink be above suspicion. Later in the season these cautions will naturally apply in a less degree, although hitherto there has been little danger of suddenly checking perspiration, because it has been difficult to get a perspiration.

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[1] Medical Record.

Probably the best months for going to Chicago and for doing the Fair are June and October. By the first of June the Fair ought to be quite ready, which it is not yet, and by the middle of June the weather ought to be settled. The nights are apt to be cool even in the warm weather of summer.

All over the grounds are supplies in labelled boxes of "sterilized" water — that is, lake-water which is supposed to have been boiled and filtered. Just at present, the boiling works are incapacitated for work and those boxes said to contain "sterilized water for drinking purposes only," really contain the pure, adulterated water of Lake Michigan. Some of the best hotels provide spring-water; at others the filtered lake-water is furnished, and at others Lake Michigan water as received. It seems to be a fact that the discolored line of sewage-water from the Chicago River is sometimes seen as far out as the intake of the four-mile crib.

The general health of the city is at present good. There are no provisions for the reception or the isolation of contagious diseases, if one except a small-pox pavilion attached to the county hospital. There are good arrangements on the Fair grounds, at emergency and service-hospitals, for the care of sudden illness, or of accidents, whether among the exhibitors, the visitors, or the workmen employed. The ambulance and nursing services are well organized.

The Emergency Hospital service comprises the Emergency Hospital, two sub-stations, an ambulance corps, with two wagons and a boat.

As the hospital is the office of Medical Director of the Exposition Dr. Jno. E. Owens, who has general charge of the whole medical service.

The hospital has a resident physician, Dr. J. L. Hillmantel and an attending staff (one of whom is constantly on duty), a druggist and steward, a superintendent of nurses, four trained female nurses and four orderlies, three of whom are practically trained nurses. Dr. D. W. Appel, U. S. Army, is associated with the hospital service.

There are four wards, two male, one female and one obstetrical. The male wards contain ten and nine beds respectively, the female ten and the obstetrical three. Besides the necessary offices, waiting and retiring rooms, which are neatly and comfortably fitted up, there is one room for general business, first treatment, etc., and a small diet kitchen. The operating-room, in which operations are done if required, is a model of neatness. It is well lighted by windows and by electric lights, if necessary, with a glazed brick floor, glass-top tables and all needed appliances for antiseptic surgery.

If it can be avoided, no patients are kept in the hospital over night; they are removed by the ambulance corps in basket stretchers as soon as possible to their homes or to a hospital in the city. Unless some other is chosen by the patient, St. Luke's is usually preferred, as it is the most handy and convenient. The general arrangement of the hospital is good, and it is attractively furnished and very neatly kept. Visitors requiring it, may be sure of satisfactory treatment. About the wards are wicker lounges, upon which those overcome by fatigue or malaise may rest until restored. Only Hygeia water is used for drinking and dispensing purposes.

The hotel accommodation of Chicago is ample, and of all kinds. It will probably be excessive, and certainly is so at present. The prices and the accommodations vary from the very moderate and poor to the very high and pretentious. Complaints of extortion are already heard; but it should be remembered, both in regard to hotels built for the occasion and in regard to restaurants at the Fair grounds, that they have but a single season.

One word as to digestive derangements and typhoid fever. Travellers should remember that they "sample" the water-supplies of various places in the drawing-room and sleeping cars. For instance, between Chicago and Boston the water-tanks are replenished at Cleveland, Buffalo and Albany. The pathological results of the trip, if such there be, will be laid at the door of Chicago, but not necessarily with justice. In the dining-cars spring-waters are served, or at least what purports to be spring-waters; and it would perhaps be well to have one's own supply for consumption out of the dining-car, provided one can have confidence in it and would eliminate as many chances as possible.

The Exposition is, or soon will be, well worthy of a visit, and a visit can be made with comfort and without risk if the visitor is willing to take some precautions and to be reasonably prudent.

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TYPHOID FEVER FROM MILK CANS.

Roxbury, May 5, 1893.

Mr. Editor: — For the credit of the Journal, I am very glad that in your yesterday's notice of a very foolish theory in the newspapers, to account for a limited epidemic of typhoid fever, you used (p. 449) the word *might*, and in italics too. Certainly there never was a greater absurdity attempted upon credulity — bah.

Yours truly, Senex.

RECORD OF MORTALITY

For the Week ending Saturday, April 29, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	962	341	15.80	22.10	1.60	5.30	2.30
Chicago	1,250,000	[illegible]	[illegible]	18.00	21.06	4.32	[illegible]	2.16
Philadelphia	1,092,168	407	157	8.80	16.94	1.10	5.94	2.64
Brooklyn	955,333	426	133	11.04	[illegible]	1.15	[illegible]	[illegible]
St. Louis	477,873			—	—	—	—	—
Boston	[illegible]	[illegible]	54	9.84	30.34	.82	3.28	[illegible]
Baltimore	461,139	—	—					—
Cincinnati	[illegible]	117	36	10.20	18.70	1.70	[illegible]	—
Cleveland	281,353	93	25	11.88	11.88	2.16	[illegible]	—
Pittsburg	[illegible]	—	—	—	—			—
Milwaukee	[illegible]	75	[illegible]	6.65	9.31	[illegible]	[illegible]	—
Washington	230,360	107	36	12.05	14.88	1.86	[illegible]	
Nashville	87,754	26	6	—	11.55		—	—
Charleston	56,048	36	[illegible]	[illegible]	[illegible]	—		—
Portland	41,000	15	4	[illegible]	[illegible]	[illegible]	—	—
Worcester	92,313	35	9	11.44	[illegible]		—	—
Lowell	[illegible]	45	14	8.88	24.44	2.22	4.44	—
Fall River	82,128	44	20	[illegible]	[illegible]	[illegible]	—	6.81
Cambridge	74,644	34	11	[illegible]	23.52	—	[illegible]	
Lynn	[illegible]	15	8	26.66	13.33	—	6.66	[illegible]
Springfield	47,052	17	6	5.88	[illegible]	[illegible]	—	—
Lawrence	45,910	—	—			—	—	—
New Bedford	44,947	10	7		—	—	—	
Holyoke	[illegible]	8	5	12.50	—	—	12.50	—
Brockton	32,783	9	2	—	22.22		—	—
Salem	31,495	10	4	10.00	30.00		—	—
Haverhill	30,065	6	1		33.33	—	—	—
Chelsea	29,479	12	7	—	—	—	—	—
Malden	[illegible]	11	5	27.27	9.09	—	—	18.18
Newton	26,498	—	—	—	—	—	—	
Taunton	26,464	20	4	—	25.00	—	—	—
Gloucester	26,008	—		—	—	—	—	—
Fitchburg	[illegible]	11	1	—	9.09	—		—
Waltham	[illegible]	1	0	—	—	—		
Quincy	18,669	[illegible]	[illegible]	[illegible]				
Pittsfield	18,294	4	1	—	50.00	—	—	—
Northampton	15,684	6	4	—	33.33	—	—	—
Everett	14,745	6	1	—	—	—	—	—
Newburyport	14,031	7	1	14.28	14.28	—	—	—
Amesbury	13,561	[illegible]	2	—	33.33	—	—	—

Deaths reported 3,439: under five years of age 1,173; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) [illegible], acute lung diseases 711, consumption [illegible], diphtheria and croup [illegible], diarrhoeal diseases [illegible], scarlet fever [illegible], typhoid fever [illegible], cerebro-spinal meningitis 35, whooping-cough 28, measles 25, erysipelas 23.

From typhoid fever Chicago 13, Philadelphia 8, New York 7, [illegible] and Washington 2 each, [illegible] Worcester and [illegible] 1 each. From cerebro-spinal meningitis [illegible], New York 8, Brooklyn and Washington [illegible] Worcester and Lynn 2 each, Cleveland, Fall River, [illegible] and Malden 1 each. From whooping-cough New York [illegible], Philadelphia [illegible], Chicago 2, Charleston and [illegible] 1 each. From erysipelas [illegible], New York 7, Philadelphia [illegible], Brockton 1. From [illegible] New York [illegible], Boston [illegible], Chicago [illegible], Philadelphia, Worcester, Lowell and Newburyport 1 each. From small-pox New York 3.

METEOROLOGICAL RECORD,

For the week ending April 29, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	Weather.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S...2[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	79	[illegible]	W.	W.	[illegible]	10	C.	O.	
M...[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	68	N.W.	S.	[illegible]	[illegible]	C.	C.	
T...[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	70	71	S.W.	N.W.	12	3	R.	C.	
W...[illegible]	[illegible]	[illegible]	51	29	[illegible]	[illegible]	[illegible]	N.	S.E.	12	10	C.	C.	
T...27	[illegible]	[illegible]	[illegible]	[illegible]	67	[illegible]	82	S.E.	[illegible]	[illegible]	[illegible]	R.	R.	
F...28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	81	S.W.	S.W.	7	15	O.	O.	
S...[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67	[illegible]	W.	S.W.	5	4	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 29, 1893, TO MAY 5, 1893.

A board of medical officers to consist of LIEUT.-COL. GEORGE M. STERNBERG, deputy surgeon-general; LIEUT.-COL. WILLIAM D. W[illegible], deputy surgeon-general, and MAJOR JOSEPH R. GIBSON, surgeon, is appointed to meet at West Point, N. Y., June 1, 1893, or as soon thereafter as practicable, for the physical examination of the cadets of the graduating class at the U. S. Military Academy, and such other cadets of the academy and candidates for admission thereto as may be ordered before it.

By direction of the acting Secretary of War, leave of absence for three months and fourteen days is granted MAJOR JOHN H. JANEWAY, surgeon, U. S. A.

CAPTAIN HENRY S. TURRILL, assistant surgeon, U. S. A., ordered to report in person to the president of examining board at Omaha, Neb., for examination, with a view to determine his fitness for promotion as contemplated by the act of Congress, approved October 1, 1890.

COLONEL CHARLES T. ALEXANDER, assistant surgeon-general, is detailed as a member of the Army Medical Board, *vice* COLONEL CHARLES H. ALDEN, assistant surgeon-general, hereby relieved.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 6, 1893.

JAMES G. FIELD, assistant surgeon, ordered to examination preliminary to promotion.

CONFERENCE OF STATE MEDICAL EXAMINING AND LICENSING BOARDS.

The third annual meeting of the Conference of State Medical Examining and Licensing Boards will be held in Milwaukee, Wis., June 7, 1893.

The following subjects will be discussed:

(1) The Evolution of State Medical Examining and Licensing Boards. Their present and prospective influence in elevating the moral and intellectual tone of the profession.

(2) Composition of Boards. (*a*) The desirable number of members. (*b*) The desirable appointing power. (*c*) The advantages and disadvantages of separate boards representing the different schools of practice.

(3) Provisions of the Various State Laws. (*a*) Should the possession of a diploma from a recognized medical school be a prerequisite to appearing before a board for examination? (*b*) What reciprocal relations should exist between boards? (*c*) Should teachers in medical schools be eligible to membership on State examining boards? (*d*) Defects in existing laws, the best law in vogue, the ideal law.

(4) Methods of Conducting Examinations. (*a*) How should the examination be prepared? (*b*) The scope of examinations. (*c*) The minimum and maximum requirements.

JOHN H. RAUCH, M.D., *President.*
HUGH M. TAYLOR, M.D., *Secretary and Treasurer.*

AMERICAN MEDICAL EDITORS' ASSOCIATION.

The following programme has been arranged for the eleventh annual meeting of this Association at Milwaukee, Wis., June 5, 1893.

The general business meeting will be held at 4 P. M. The President, Dr. Culbertson, will deliver an address. Dr. Gould will read a paper on "Medical Orthography" This will be followed by a paper on "Some New Phases of Journalism," and a discussion. Reports of committees and election of officers and other business will conclude the session.

The banquet will be given at 6.30 P. M., and be followed at 8.30 by the annual address, by Dr. Ernest Hart, Editor of the *British Medical Journal.*

This will be followed by an address on "Editorial Responsibility and Questions of Libel," by the Hon. Clark Bell, Editor of the *Medico-Legal Journal*, and President of the International Medico-Legal Congress. Dr. J. Stanly Hall, Editor of the *Psychological Journal*, and President of Clark University, will address the Association on "Psychological Phases of Medical Study and Journalism." Discussion and remarks will follow.

J. C. CULBERTSON, *President.*
T. D. CROTHERS, *Secretary.*

SUFFOLK DISTRICT MEDICAL SOCIETY.
ELECTION OF OFFICERS.

The following officers of this Society were elected at the annual meeting April 29, 1893:

President, A. L. Mason; Vice-President, John G. Blake; Secretary, James J. Minot; Treasurer, Edward M. Buckingham; Librarian, B. J. Jeffries; Commissioner of Trials, C. W. Swan; Member of the Nominating Committee of the Massachusetts Medical Society, W. L. Richardson; Committee of Supervision, F. Minot, W. Ingalls; Committee on Social Meetings, H. Williams, G. A. Leland, E. Reynolds, P. Thorndike; Censors, F. H. Davenport, H. F. Vickery, F. B. Harrington, R. W. Lovett, E. O. Otis.

APPOINTMENTS.

The following promotions have been made at the Boston City Hospital: DR. V. Y. BOWDITCH, to be Assistant Visiting Physician; DR. H. L. BURRELL, Visiting Surgeon; DR. G. H. MONKS, Assistant Visiting Surgeon; DR. GEORGE HAVEN, Physician for Diseases of Women to Out-patients.

RECENT DEATH.

WILLIAM H. STOKES, M.D., died in Baltimore, May 7th, aged eighty-one years. He graduated from the Maryland Medical College in 1834, and for some years practised in the South. He was later, for thirty years, in charge of the Mount Hope Retreat, the largest insane asylum in Maryland, and has written much on insanity.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Massachusetts Medico-Legal Society. Volume II. Number 3. Boston: Damrell & Upham, Old Corner Bookstore. 1893.

Materia-Medica and Therapeutics. By John V. Shoemaker, A.M., M.D. Second edition complete in two volumes. Philadelphia and London. 1893.

Practical Details in the Preparation of Plaster-of-Paris Bandages. Free Incision of Abscess of Ostitis of Hip; and Closure without Drainage. A Clinical Lecture on the Prevention of Idiopathic Rotary Lateral Curvatures of the Spine. By H. Augustus Wilson, M.D. Reprints. 1893.

A Hand-book of Local Therapeutics. General Surgery. By R. H. Harte, M.D. Diseases of the Skin. By A. Van Harlingen, M.D. Diseases of the Ear and Air-passages. By Harrison Allen, M.D. Diseases of the Eye. By George C. Harlan, M.D. Edited by Harrison Allen, M.D. Philadelphia: P. Blakiston, Son & Co. 1893.

Lecture.

LECTURES ON THERAPEUTICS.

I. DIGITALIS.[1]

BY H. C. WOOD, M.D., PHILADELPHIA,
Professor of Therapeutics, University of Pennsylvania.

GENTLEMEN: When asked to deliver a course on Therapeutics at this University, in five lectures, I felt very much like the little child who was given one orange, then a second, then a third, with ever increasing delight; but when a fourth was added to his possession, dropped the whole and burst into tears. I have hardly known what to call your attention to, but have concluded in the first three lectures, to consider the cardiac remedies, and to-night shall take up the subject of digitalis. If my lecture shall disappoint some of you in being too elementary, my defence is that Dr. Chadwick asked me to lecture to the medical students of Harvard University and not to the practitioners of Boston.

In studying a drug it seems but natural first to consider the symptoms which it will produce in a healthy man, and then to find in experimental records the explanation of its action. Ten drops of the tincture of digitalis will produce in the ordinary human individual no apparent effect; but when the dose is repeated at short intervals, the pulse soon becomes slower and stronger, the diastolic pauses grow very long, and the individual heart-beat sends a great rush of blood which rises and swells with a power scarcely ever equalled under other circumstances in the pulse. If the administration be persisted in, by and by each pulse-wave may become forked, or, as we say, dicrotic. Then the waves break entirely, until at last a multitudinous pulse, irregular in its size, fragmentary and broken in its parts, with now long, now short, irregular pauses, and perverted rhythm, mark the stage of poisoning. A curious phenomena which can sometimes be seen is a peculiar change in the pulse when the patient's position is altered. Thus, in the man lying upon the bed the pulse may be slow, full, absolutely regular; but when the patient is sat up it becomes dicrotic, or perchance goes into the fragmentary condition just spoken of.

The first point that we make out in studying these effects is, that they are developed very slowly under the influence of the drug, but that when once they are developed they are very persistent: and we learn, therefore, that digitalis is equally slow of absorption and of elimination. Sometimes digitalis seems to have no influence even after many days of steady administration, when suddenly most severe symptoms manifest themselves. It has indeed been denied that this so-called "cumulative" action of the drug ever really occurs; but I have seen it repeatedly. There comes to my mind at this moment the case of a woman who had long been using digitalis without any perceptible effect for the removal of a serous effusion. Sunday morning, her pulse, which had been at 90, suddenly dropped to 70; although the digitalis was at once stopped, Monday the pulse was 60; Tuesday, it was 50; Wednesday, it was 40; Thursday, it was close to 30; and I began to wonder whether there were any bottom. Friday, however, the effect of the remedy began to wear off, the pulse to go back up over the curve, down which it had travelled. The effect of the remedy was very apparent for nine days after the withdrawal of the drug.

The explanation of the cumulative action of digitalis is probably slow absorption and still slower elimination, for certainly the phenomena is especially prone to occur when the drug fails to act as a diuretic. A curious fact which has been repeatedly noted, is the tendency to the sudden development of digitalis action when patients who have been taking the drug are tapped for ascites. The explanation of this phenomenon is, I believe, to be found in the fact that a drug is active only when it is within the circulation. Tapping in ascites relieves pressure from the abdominal vessels and brings about a rapid absorption of serum to fill up the circulation. This serum has contained in it a large percentage of digitalis, inactive because not in the blood; when the serum is taken into the blood the digitalis immediately betrays its presence. It is precisely what is sometimes seen when iodide of potassium is given after a prolonged mercurial course. The mercury inert in the tissues, rendered soluble by the iodide, enters the blood and suddenly shows itself by producing ptyalism.

For the purposes of explaining the action of any drug, we must resort to vivisection, because by vivisection we are enabled to vary the terms of the experiment, and no experimental science is possible without such power. Owing to the labors of Vulpian, Dybkowsky, Pelikan, Meyer, Boehm, Fothergill, Gaskell and others, we know that in the frog, digitalis produces marked lengthening of the heart-beats, with a prolongation of the diastole, and a marked increase in the systolic contractions, and that this action of the drug occurs whether the heart be *in situ* or whether it be in a Williams' apparatus outside of the body. We further know, also, that there is an absolute increase under the influence of digitalis in the amount of force put forth in a certain period by the heart. After a time, however, the contractions become irregular, the systole being broken into diastole, and the diastole interrupting systole; then systole seems to triumph over diastole; and at last the apex of the little heart never dilates but remains during diastole as a white contracted spot. This spot grows and grows as the contraction becomes more and more irregular, and at last systole triumphs over diastole and the heart is arrested in spasm. And here I want to call your attention to the fact that we have two classes of drugs which are spoken of as stimulants: one, like digitalis, both in large and small doses, stimulates the heart muscle to excessive contraction so that it dies in spasm; the other, like ammonia, first increases the functional excitement of the heart muscle, but when in sufficient dose ends by paralyzing the muscle so that it dies in relaxation. In our nomenclature both these drugs are stimulants, but their actions are essentially diverse, and some day perhaps the terms "stimulants" and "depressants" will disappear from our text-books.

Although usually, as already stated, the frog's heart is arrested in systole by digitalis, sometimes in rare cases it stops in diastole, and as it has been found that this diastolic arrest never occurs when the pneumogastric nerves are intact and the heart *in situ*, it would *a priori* seem certain that there must be pneumogastric excitement under the influence of digitalis; and that sometimes excited inhibition triumphs. This is confirmed by the proven fact that during the action of digitalis there is excessive susceptibility of the par vagum; so that even when systole is firmest and the heart almost ready to go into spasm, an irritation of the pneumogastric nerves, too feeble to be in the normal animal, will cause cardiac relaxation. In the frog digitalis stimulates the heart muscle and stimulates, also, the inhibitory apparatus. In the mammal, digitalis when in moderate dose markedly increases the blood-pressure, producing a slow, full pulse, which by and by under the influence of sufficient doses of the drug becomes dicrotic and then splits into parts; until finally we have the rapid, irregular, hobbling pulse, with low pressure.

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[1] Delivered before the Harvard Medical School Association, April [illegible]

It is a law of interpretation of physiological facts, or perhaps I should say, more commonly it is a law of physiology, which I long ago formulated, that when corresponding anatomical systems are in the various animals regular in structure and in function, that drugs act upon these systems identically in the various species. The heart is similar in its structure and function in all mammals, indeed in all vertebrates, hence cardiac drugs act alike throughout the range of vertebrat life. The digestive organs vary in structure and in functions, hence they vary in their relations to drug forces as they do in their relations to other forces, and elaterium, which purges the man to death, will cause death in the dog by general depression without causing even a watery passage. In accordance with this law, instances of the truth of which might be multiplied, a study of the action of digitalis upon the frog's heart shows that the increase of the arterial pressure produced by it in man is at least in part due to the stimulant action produced upon the heart. The rise of pressure produced by digitalis seems, however, to be too great to be caused solely by an action upon the heart. What then is the condition of the vaso-motor system?

There has been considerable dispute as to the effect of the drug upon the blood-pressure in the mammal after section of the spinal cord high up; that is, after centric vaso-motor paralysis. The experiments of Gorz seem, however, to reconcile the record and to show that after spinal section digitalis produces a rise which is much less than that caused by the drug in the normal animal; and therefore stimulation of the vaso-motor centre is in all probability a decided factor in the section of the drug. Further, the almost consentaneous but independent researches of Ringer and Sainsbury, and of Donaldson and Stevens, in the method of Gaskell, have seemingly demonstrated that digitalis acts upon the walls of the arterioles; especially since Professor Kobert has confirmed them in a series of experiments made upon excised kidneys. The first mentioned experimenters have found in a terrapin whose heart has been excised and nerve centres destroyed that when under a certain pressure liquid is made to pass through the circulation, entering by the main artery and going out by the main vein, that the addition of a little digitalis to the liquid reduces markedly the amount of flow. The only way of explaining this seems to be that the digitalis contracts the fine arterioles and therefore offers an increased resistance to the passage of the fluid. We must therefore conclude that digitalis stimulates both the pneumogastric nerve, the heart muscle, the vaso-motor centre, and also the arteriole walls.

With this knowledge it is easy to interpret the phenomena which digitalis produces in man. By prolonging the diastole, so that the ventricle becomes over-full with blood, and energizing the systole, digitalis causes the heart to send out into the aorta an enormous wave of blood; and, at the same time by contracting the blood-vessels, increases resistance and enormously augments the general pressure. In the digitalis heart there is a continual contest between the diastolic and the systolic impulse, a contest which after a time ends in favor of systole; and so we have interrupted diastoles and broken, irregular heart-contractions; disagreement in the rhythm between the various parts of the ventricle. The dicrotic pulse marks the first stage of this change; the hobbling, broken pulse the final condition. The pressure in the advanced poisoning is low because the contracted left heart will not allow the blood to pass through it.

It is easy to perceive why, on raising a patient with a very low digitalis pulse from the horizontal position, not rarely the pulse becomes dicrotic and even fragmentary. In such a case, whilst the patient is in the horizontal position the balance is preserved between systolic and diastolic excitement; but when the patient is sat up and impulses suddenly spring from all portions of the body upon the heart, demanding that it shall increase its energy, the systolic excitement rises so high that the diastole is overcome and the symptoms of poisoning appear.

It is evident that the great indication for the use of digitalis in disease is cardiac weakness, and that the action of the remedy should *a priori* be most apparent when a weak, feeble pulse is dependent simply upon a dilated and enfeebled heart. It is certainly proven that the great contraindication of the use of digitalis is cardiac hypertrophy or excessive power.

In the case of so-called irritable heart, seen frequently in soldiers and sometimes in athletes, cases in which the fundamental lesion is probably exhaustion of the pneumogastric nerves, digitalis seems to be doubly indicated, and very frequently does great good, probably in part by strengthening the nerves of inhibition.

The application of digitalis to the relief of cardiac valvular disease is not so evident. It is neither a rag that shall stop up a leak, nor a needle which shall sew together the fragments of a rent valve.

In some, perhaps many, cases of valvular disease, especially of mitral valvular disease, digitalis may however absolutely reduce the percentage of leak by the notable increase of the force and rapidity with which the blood is driven from the heart; the wide open, smooth, aortic orifice offering no resistance to the powerful stimulant; and there is no increase of friction worthy of note; but the narrow original rent, with its perhaps projecting vegetation, offers great resistance, and the friction rises enormously. I have sometimes compared the blood corpuscles, under these circumstances, to a flock of sheep driven by fright out of the corral; butting and pushing against one another; choking up some narrow outlet; but when the gate is wide open, rushing out in a stream that soon empties the enclosure.

In attempting to understand the value and use of digitalis in valvular heart-disease, we must apply what I believe to be the underlying principle of rational therapeutics, namely, to first study the natural history of the disease, see how nature produces relief, and then apply our knowledge of the action of remedies by the same principles of reason by which the worker in inorganic forces adapts his ways to his ends.

Cardiac valvular disease is certainly in a strict sense of the word, incurable; but the principle which I desire to impress upon the young students before me to-night, is, that though nature may be unable to repair an injured valve — even with the assistance of art, nature is often able to so atone for the valvular deficiency that the patient goes on living in comfort perhaps for many decades. Those of you, who, in boyhood have had to rise in the early frosty morning and wash from a leaky pump, know very well that the biceps and the triceps must atone for the defective leather, and that if the strokes come fast enough and hard enough the icy stream soon flows freely. It is exactly in a parallel way that nature renders an imperfect heart serviceable, and when the hypertrophy is just sufficient to overcome the valvular defects the circulatory balance is restored. It is extraordinary how complete the combination may be, and how long such a heart may last without causing disturbance. I remember well an old lady who always seemed to me to have about her person an aroma of the last century, because she had frequently sat upon the lap of General Washington, and been ministered to by Rush and by Physick; a lady who died the death of a peaceful old age, well up towards the nineties, although for unnumbered years she had had a loud, blowing, systolic murmur, marking the presence of a gross lesion.

For the purposes of the practitioner it is essential to have a clear understanding of the difference between absolute hypertrophy and relative hypertrophy; the heart may be absolutely hypertrophied and yet relatively weak or dilated (so-called). Suppose, to make this clear, that the work required of a normal heart is x, and that the power resident in that heart is also x. Then x equals x, and the balance is complete. Now let disease come, and the x which represents work rises, it may be, to $4x$, on account of the lack in the valve. The power of the heart grows greater, perchance double; and at last we have a heart whose work is $4x$ and whose power is $2x$. Under these circumstances we have a heart twice as strong as normal and therefore enormously hypertrophied; and yet a heart in which increase of power has not kept pace with increase of work, and therefore is relatively weak; x is equal to x, but $2x$ is not equal to $4x$.

In the practical problem of a heart case we have an illustration of the difference between simple diagnosis which treats of the seat and nature of the lesion, and therapeutic diagnosis which treats of the relation of that lesion with the needs of the system. It is possible for the practitioner to be able to tell not only what valve, but even what leaflet of the valve is affected; to recognize in a moment organic and inorganic murmur to be very smooth and fluent in the current speech of the heart clinic; and yet not to be skilful in reading the relations between work and power.

The practical success of the doctor depends, however, much more upon his aptitude for therapeutic diagnosis than upon his skill in absolute diagnosis. In passing from this subject, I would like to point out, especially as an aid to the medical students who are before me, that the condition of the venous system indicates largely the relation between the power and the work demand in the diseased heart. When hypertrophy is excessive, when increase of power overleaps increase of work, we may have cardiac distress and active congestion, but we do not get passive over-fullness of the venous system and dropsical effusion. When these exist we know there is relative cardiac weakness; and when there is relative cardiac weakness digitalis and its allied drugs are demanded.

There has been a widespread belief, which has often found utterance, that digitalis is indicated in disease of the mitral valve, but is contra-indicated in disease of the aortic valve. This belief is unphilosophical and in large part erroneous, although like many a delusion it enwraps a certain amount of truth. Aortic lesions are for the most part gradually developed; and being gradually developed they allow time for the production of a hypertrophy which not rarely becomes more than compensatory. In such a case digitalis increases the distress; but if there be relative weakness in a heart with aortic valvular disease, digitalis is just as important as though the mitral valve were affected. In a large proportion of cases mitral disease has been produced by an acute endocarditis; and then comes the struggle for the heart to build its structure up. Under these circumstances digitalis is a most important remedy, and its use cannot be begun too early. Just so soon or even before there is any subsidence of the fever and acute processes, digitalis should be used.

The importance of this early use links itself with another clinical experience not very rare; that every now and then a heart is found which seems weak, broken down, thoroughly incapable of its work; but which under the influence of perhaps a few weeks of digitalis, grows into new power and becomes able to carry its load. I have spoken of digitalis simply as a stimulant to the heart; but digitalis is more than a stimulant to the heart, it is a builder up of the heart. Worried and exhausted by continual peripheral impulses for more blood than it is able to supply, the weak diseased heart becomes more and more nervous and irritable, and at last goes into a perpetual series of rapid ineffective systoles leaves the whole arterial system almost bare of blood. Any one who will examine the anatomical shape of the coronary arteries, will see that under these circumstances the heart itself must more than share in the general failure of blood-supply; again, any one who has watched the intense whitening of the frog's heart during systole, especially if the systolic impulse has been reinforced by digitalis or other drug, must be convinced, it seems to me, that though the coronary artery spurts during systole, during systole the blood which has become venous in the heart muscle, and the nutritive lymphatic fluids which have been taken into the interspaces of the heart wall are expelled, and the pathway made open and clear for fresh blood. As this belief of mine has been somewhat antagonistic to the general teachings of physiologists, I was very much pleased yesterday, in visiting Prof. Reginald Fitz's laboratory at Cambridge, to see his plethysmographic tracings which show that exactly this thing does occur during the contraction of voluntary muscles; and that there is a squeezing out of blood during the contraction. The exhausted, diseased heart is therefore underfed at a time when it is most overworked, because its blood-supply suffers, and because the congested bayous of of its circulation are allowed to stagnate. Under the influence of digitalis the blood-vessels fill, the systole energizes, and the venous and lymph spaces are emptied; and so the heart participates, more than any portion of the body, in the increase of food.

I believe, however, that digitalis affects the nutrition of the heart for good beyond the action which has been spoken of. And here I must call your attention to the discoveries of Gaskell, which to my thought have opened new chapters in physiology; and which I believe to exhibit the general basis of functional life. According to this discoverer there are two antagonistic conditions of the heart, one of functional activity and structural destruction, one of functional inactivity and structural repair; the first that which we commonly call the period of activity, the second that which we commonly know as the period of inhibition or arrested function; systole and diastole of the cardiac cycle. The pneumogastric or inhibitory nerve is the nerve of diastole, the nerve which overcomes functional excitement and brings about repair of structure. It is, in other words, a trophic nerve, and I believe digitalis improves the nutrition of the heart not simply by feeding the muscle, nor yet simply by prolonging the period of diastole and allowing more time for repair; but, also, above and beyond these things, by stimulating the nerve which dominates and brings about repair. I think, therefore, that digitalis is to the heart an up-builder, a tonic, a trophic stimulant.

I have so far been speaking to you as to the use of digitalis in the earlier stages of heart-disease; at a time when it must be given in such moderate dose that no danger overshadows its employment; only must I insist that even in these cases that the dose be not fixed or arbitrary, but be that which will accomplish its purpose; you must also see to it that the digitalis is of good quality, for but too often the apothecary serves us evil. I want, in concluding this lecture, to call your attention to the use of digitalis in enormous doses in advanced and desperate cases of heart-disease. Perhaps I can do so better by giving a leaflet from my own experience.

Some years since I was called by an old and outspoken German physician of our city, to take temporary charge of a lady suffering from old mitral disease, who for many weeks by day and by night had struggled for breath in the agony of cardiac orthopnœa. She affirmed that she never slept, but of course this was erroneous. It so chanced that the patient's window overlooked a well-filled graveyard. The doctor, who was one of those who called a spade a spade, talked freely before his patient, and on his telling me he had given her digitalis without avail, I asked what had been the dose? He said "ten drops." I said, "May I give her forty-drop doses?" Turning to the sufferer, he said, "Mary, won't you let the young doctor try what he wants with you? He thinks perhaps he can cure you, if you will take the risk; and wouldn't you rather be asleep quietly under the sod yonder than living as you are?" The patient assented; the digitalis was given; and when the doctor returned from his vacation, Mary answered the ring at the bell and let him in.

About the same time I was called to see a banker from Kansas City, who for some weeks had been under the care of a diluted dispenser of diluted nothings; and who during this time had also been suffering the agony of orthopnœal martyrdom. I have never seen a more marked case of Cheyne-Stokes breathing. Under the influence of enormous doses of the drug in a few weeks the banker returned to his counting-house in the far West. The triumph seemed complete, and so it was for weeks; but mark the ultimate result. Mary, one morning, as she trod the doorway of the market-house, fell dead upon the threshold. The banker, stretching his arm across the desk that had been to him the path to riches and power, fell hushed and powerless into the eternal silence. Some one may say that under these circumstances digitalis killed the patient, but not so, gentlemen. Digitalis had simply energized the diseased heart, quieted all its nervous irritability, restored the balance, and enabled it to go on in comparative comfort until the last grain of power in its substance had been used up and death came because there was nothing left. Even if digitalis were the immediate cause of death, was it not better to live a few months of comfort than to die after weeks of agony? The digitalis certainly prolonged, not shortened the life. In such cases as these the physician is as justified in using the powerful remedy in enormous doses as the surgeon is justified in taking the risk of some major operation when death is otherwise inevitable. Be bold, therefore, in this use of digitalis, but temper your boldness with excessive caution; and remember that you judge the dose not by the amount of the drug but by the effect, and that the dose is not too large until the effect is reached. Remember, also, that the effect once produced is probably lasting, and that, therefore, its appearance should be the immediate signal for the complete withdrawal of the remedy. Also, may I strongly recommend to you always to warn the patient or his friends that sometimes death will come as with a lightning stroke.

I want first to call your attention to certain contraindications to the use of digitalis in chronic heart-disease.

Of course, one of the greatest difficulties that overshadows or encumbers our use of digitalis is its tendency to disagree with the mucous membrane of the gastro-intestinal tract, and of course, therefore, any irritation or irritability of that mucous membrane is a contraindication to the use of digitalis.

But the special contraindications which I shall dwell upon are much more hidden and less easily perceived and understood. Indeed, the first contraindication took me fifteen years before I fully comprehended the force and power of it. I soon learned in my practice of medicine that there was a set of cases of mitral insufficiency in which the heart-power is not equal to the heart-work and in which, therefore, digitalis seemed to be indicated, but in which digitalis evidently adds to the cardiac distress, and in which so far from its doing good it added so much of harm that I was of necessity forced soon to avoid giving it. It was long before I thought out the explanation of these cases, but, like Columbus's egg, when once the problem is solved it is quite simple. In all these cases I noticed that there was a very large insufficiency of the mitral valve; and I have no doubt that under these circumstances there was also a great weakness of the left auricle. Now, if there be an excessive weakness of the auricle, and digitalis enormously strengthening the power of the ventricular contraction drives the blood with great force upon the auricle, though there may be gain so far as the ventricle is concerned, there may be such stretching of the weakened auricle that the strain is too much for it. The cardiac agony which follows in these cases the use of digitalis is the measure or the output of a weakened auricle which cannot resist the backward pressure from the increased ventricular power. After I had worked the problem out to my own satisfaction, my reasoning was abundantly confirmed by the curious experiments of Kaufmann, who found that digitalis has much more power over the ventricle than the auricle, increasing the intraventricular pressure during contraction much more than the intra-auricular pressure. A weakened auricle with a widely opened mitral valve is in verity a very important contraindication to the use of digitalis.

The next contraindication to the use of digitalis is one which falls athwart the surgical use of the drug, at least as the surgeons have used the drug in Philadelphia. I do not know whether they so employ it in Boston. The surgical mind in its relations to medical therapeutics has always struck me very like the human body — a thing that is wonderfully and fearfully made; and its ways have always seemed like the ways of Providence — past finding out. A very notable illustration of that is found in the fact that pareira brava has been largely used for many years by the surgeons with the same results, but the wild Indians of South America have absolutely changed pareira brava, and the pareira brava of the markets of to-day is no more the pareira brava of the markets of yesterday than an oak-tree is a potato-blossom. But the surgeons never discovered the change. And now I have never been able to make some of our conservative Philadelphia surgeons understand that the one great contraindication above all others to the use of digitalis is weakness of the blood-vessels and especially that local weakness of the blood-vessels which leads to aneurismal enlargement. Any person who understands the first principles of hydrostatics must know that if you increase the forward pressure of a liquid in a tube you increase also the lateral pressure. But digitalis is a far more dangerous remedy than strychnia or atropine or some other drug which perhaps raises the pressure even more than does digitalis. I have talked to you regarding the peculiar pulse-wave of digitalis. It is a mighty tide of blood which rushes through the artery with great power and force, swelling and dilating everything as it goes; and the great danger in the use of digitalis in aneurism is the fact that we have not merely increased lateral pressure but an increased wave, that, rushing through, must distend, must tear, must rend, must sweep out edges of clots, and find its way back of the clots that protect the coats of an aneurism. The reason the surgeon so rarely does harm when he gives digitalis to quiet the circulation is because, fortunately for the patient, the surgeon usually gives the digitalis in such doses that it has no effect.

In my hospital ward one day I found a man who had just been brought in pulseless, cold and in collapse. I said: "Put this man on full doses of digitalis, hypodermically and by the mouth." The next day I came in and saw the man lying in bed quiet, composed. I put my fingers on his pulse and felt a tremendous digitalis throb in his artery. I said to the resident: "Stop the digitalis; he does not need any more." Suddenly, with a mortal cry, the man sprang from the bed. A great outburst of blood came from his mouth and nose. A shudder, a fall back, a thrill through the frame, death! I said to the resident: "Do you know what has been done to that man? I wager anything that man had an aortic aneurism, and we have ruptured it." The autopsy showed this to be the fact.

I want, next, very briefly to call your attention to the employment of digitalis in acute disease. I do this briefly, because I think I can teach you the lesson better by contrasting in the next lecture the use of digitalis in some of the acute diseases with the use of some of its antagonists, like veratrum viride. Suffice it for the present to say, that in my belief whenever you have syncope, failure of heart's action from any cause, digitalis, though not the most rapidly acting is the most reliable of all drugs that you have; and though we employ ammonia and alcohol under these circumstances, and employ them very properly for their momentary effect, digitalis should be always used and used freely. You may give it under these circumstances hypodermically; there is no use in giving it by the mouth. You use it hypodermically, and may use it without fear. At least, I have given it so that the whole skin seemed full of it; and I have never seen any bad effects from it, except perhaps some ulceration.

Digitalis is a useful drug in all cases of the heart's failure in acute disease. Unfortunately, for reasons that we do not fully understand, it does not serve our purpose in certain cases in which we most need it. It fails us usually in cases of fever, and that has been shown by the researches of Lauder Brunton to be due to the high temperature which overcomes the action of digitalis in some way we do not understand.

It is a question of great importance in the use of digitalis to decide as to what preparations we shall use. There has been a widespread belief that the infusion of digitalis is much better than the tincture of digitalis, at least large numbers of the physicians whom I come in contact with, say: "I get effects out of the infusion I cannot get out of the tincture." The reason is that the profession has been in the habit of giving the infusion in a much larger proportional dose than it gives the tincture. The dose of the tincture is put down from five drops to ten drops, and that of the infusion is put down from a drachm to one-half a fluid ounce. The infusion is only ten times weaker than the tincture, and five drops of tincture of digitalis is only equal to about thirty drops of infusion, because the tincture drop is small. And right here let me say I think it is much better and safer in the case of this tincture always to give it by minims, especially when you are giving the drug freely. If you order a drop of digitalis, you don't know what the patient gets. If you want accuracy, you have got to drop giving drop doses, and especially from droppers.

With these remarks I leave the subject of digitalis, and pass on to the consideration of drugs which we have as adjuvants in the treatment of chronic cardiac disease.

A few words in regard to ammonia and alcohol. They are of no service to us whatsoever in the treatment of chronic cardiac disease, save only as momentary stimulants in times of momentary or passing peril. Remember, also, that in ammonia the local action of the drug always overpowers the general influence of it. The man who dies of ammoniacal poisoning dies because his mucous membranes are destroyed by the ammonia. When you hold ammonia to the nostrils of a fainting woman you rouse her, but simply by the irritation of the mucous membrane produced by the fumes of the ammonia. Ammonia is a drug of very little practical value. If you get it into the circulation its action is over in five to ten minutes. In the practice of medicine it is important to avoid what I call the kangaroo system of therapeutics. You give a man a dose of ammonia or of hydrocyanic acid; in two or three hours, and so on, another dose; so you go through the day jerking up the patient like the kangaroo hopping across the Australasian bush. Where you have a drug like digitalis, that acts permanently and persistently, then your doses are at long intervals; where you have a fugacious remedy the doses should be every few minutes.

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Original Articles.

MODERN PATHOLOGY AND THE PATHOLOGY OF NERVOUS DISEASES, WITH SOME THERAPEUTICAL DEDUCTIONS AND EXPERIMENTS WITH ORGANIC EXTRACTS.[1]

BY CHARLES L. DANA, A.M., M.D.,
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Gentlemen: I have some retrospections to offer to you to-night, perhaps some homilies upon the way our science moves; and I have also some views or (as I prefer to consider them) doctrines to present, upon which to solicit judgment. Whether they are at all novel or wise or valid I cannot say. I hope, however, that I may be able to turn the attention of neurologists for a time toward the line of thought and investigation which now interests me and persuade them to a little less of the current case-reporting and a little less analysis of weird and rare diseases and familiar anatomical changes. Clinical neurology, I sometimes think, is very nearly exhausted on present lines. You cannot deny that you are a trifle tired of descriptions of multiple neuritis and tabes dorsalis, of the muscular atrophies and the richly-pictured tales of acromegaly; or that syringomyelia now makes you feel the hollowness of our art, as well as of our cords, as do the accounts of death's rich harvests from cerebral surgery and the benumbing iteration of the individual standpoint as regards traumatic neuroses. I would humbly suggest, therefore, that we give semeiology that rest and opportunity for fructification which is due to exhausted soils, or refer it to the uses of the didactic teacher and the ever-glad enthusiasm of young graduates. What we most need now is to investigate more deeply into the nature of nervous diseases, and learn, if possible, to explain their onset and to stop that reproachful funeral march through the modern neurologist's consulting-rooms.

RETROSPECTIVE.

In the history of neurology there were first only simples and incantations, therapeutics and theology; next came learned theories and a pathology based on fancy and tradition. Observant and sensible men then took up the clinical work, and later added to it pathological anatomy. We are still working with this latter class. The present is the day of the clinician and the anatomist. But their ground has become assured; they have planted their science and we have had enough of them for a time; we should go back to pathology and therapeutics, and we should try to learn, if we can, the actual and primary causes of these nervous diseases which so afflict mankind and harass us as neurologists. It is something, perhaps, to be able to say to a patient: "My dear sir, you have a strip of fibrous tissue in the back part of your spinal cord; it is very small, but it will get bigger and you will get worse. Why it comes there I do not know, why it should get bigger I do not know, and why I cannot stop it I cannot understand; but I have triangulated your nervous centres, located the lesion, and if ever I get your cord I can dye the affected part a beautiful orange-yellow or a bright carmine-red." This is modern science and modern neurological therapeusis. It is not, however, a science which opens the portals of hope, but a genteelly-dressed porter that waits along the corridors of death announcing the *morituri* in a style, I admit, of exquisite art.

We have been too much in the position of the ancient philosophers who asserted that the world was held up on the back of a turtle; while, as for what held up the turtle, that was not much matter. Human knowledge must have some limit; they drew it at the turtle; we draw it at the sclerosis. How often we say: "This is a shaking palsy, or a muscular atrophy. I can do nothing. They all die; so must this man." But if one stops to think, he can give no reason why muscular atrophies should be progressive, or shaking palsies should forever shake. Perhaps they always will; but we have no reason to suppose it, and every patient should furnish a field of earnest effort until the mystery of the disease is solved. I am, as you see, optimistic, hopeful of our power to unlock some day the mysteries of life and disease and even of death, for I am not so sure that even senility and death are necessities. Who can deny that the former may be but an adventitious resultant of self-bred poisons, and the latter an unfortunate toxæmia for which the wiser prophylaxis of the future will provide a remedy? The sperm-cell is immortal, and some day the somatic cell may be made so.

We neurologists are beginning already to take different views of the nature of some nervous diseases; but we have been slow in imbibing the doctrines of toxines, microbes, phagocytes, ferments and defensive proteids — things which make so large a part of general pathology. Nervous diseases with an organic basis are comparatively rare and autopsies more so; hence our pathological knowledge has accumulated gradually and this may account somewhat for our misoneism.

NERVOUS DISEASES IN THE EIGHTEENTH CENTURY.

Permit me to say a few words about the way our modern neurological nosology has developed. It may emphasize the position which I take to-night, that we should be less contented than we are with our present clinical and anatomical work. In the good old days of Sydenham and Boerhaave there was lots of pathology, and there was very few nervous diseases. In the stressful days of the present we have lots of nervous diseases and very little pathology. Dr. Sydenham said that about two-thirds of all the diseases in his day were fevers, of the other third, one-half were cases of the "hysteric passion." Dr. George Cheyne, writing in the early part of the last century, said that hypochondriasis and the "vapors" made up one-third of the distempers of the people of condition in England. Hysteria and hypochondriasis then were about the only things which vexed the soul of the neurologist in the days of good Queen Anne. Sydenham says of epilepsy that he "seldom met with this distemper": he saw only five cases of chorea upon which to base his classic description and make himself immortal. If fame could only be won in this way now? Boerhaave, in his short and hopeful treatise on "how to cure most kinds of diseases," goes over a list of only a dozen nervous maladies.[2] The diseases were all there at that time; but the clinician was not born, and they were not observed and differentiated. It was sufficient to note symptoms, construct a theory for them in accordance with the teachings of the schools and give the traditional remedy.

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[1] Read at a meeting of the Boston Medico-Psychological Association, March 16, 1893.

But about this time it did occur to some that it would be a good thing, neglecting theory, to observe and classify morbid phenomena, just as the other appearances of nature were noted and classified. Under the influence of Linnæus and Sauvages, clinical medicine at once became a science. The nosology of Sauvages, written one hundred and fifty years ago, contains a clinical treatise on nervous diseases that is good today. This system, though modified later by Cullen and again by Mason Good, and others, formed the basis of most of the practical and clinical works for the period of a century. As time went by, however, the physiology of the nervous system became known, and we learned about motor and sensory nerves, reflex action, and the function of nervous centres. The cellular pathology was announced, and truer conceptions of the nature of disease were adopted. Autopsies accumulated, and the microscope was utilized. The humoral theories of nervous and other diseases were dropped and clinical nosologies gradually abandoned. It was not, however, until thirty or forty years ago that physicians began to name nervous diseases after the anatomical changes found, and that semiological classifications were, as far as possible, supplanted by anatomical ones. This tendency once started, has been gradually growing, until now every disease which has an anatomical basis is called by the anatomical name. The beautiful classes, orders, genera and species of the Linnæan system have disappeared.[3] The anatomical age set in, and we are living in it now — too contentedly, as I would claim. I want to put neurology back to the old humoral basis; and some arguments for this I shall propose to-night.

MODERN PATHOLOGY AND NERVOUS DISEASES.

I come now to the more concrete part of my subject, which is to try and explain wherein I think some of the doctrines of modern pathology can be better applied to nervous diseases. Leaving out tumors, mechanical injuries, and rupture or stoppage of blood-vessels, organic nervous diseases may all be classed as inflammatory or degenerative. But these terms have been used very loosely in neurology. Inflammation, as I take it to be understood to-day, is best described teleologically: it is the reaction of the system to a poison or irritant. This irritant is a toxine, and in most cases the product of a microbe. The part of the system which reacts to the irritant is derived from the mesoblast; in other words, it is connective-tissue and blood-vessels. Animals without a mesoblast do not have inflammation. When the irritant consists only of dead cells, as occurs after an aseptic injury, we have a reparative process — call it inflammation, if you like; but in the other forms the irritation is of a microbic, or perhaps sometimes diathetic, origin. It acts especially upon the blood-vessels, connective-tissue, and lymphatics, and it calls into play the defensive cells (phagocytes) and defensive proteids (socin and phylloxin) of the body. There is always a something, which may be called *positive chemotaxis*, present, which sets the organism into an active warfare against the invader. I am, I will confess, only an amateur in general pathology; and I must accept some one as a guide who seems to me to be working nearest in the line of truth. I confess that I am a follower of Metschnikoff in his latest views on these points. It is not, it seems to me, of so much importance what the exact cellular changes are; whether we follow Cohnheim or Stricker or Grawitz; the point is, that there can be no inflammation without a cause, and that this cause is a poison of microbic origin usually and of chemotaxic power. Different microbes call out the defensive powers of mesoblastic cells and defensive proteids in different degrees. The parenchymatous cell, or in our case the nerve-cell, has not any defensive powers itself and has to rely on the mesoblast, or, perhaps, in some instances, the epiblastic neuroglia for its protection.

There also occur in the nervous system certain chronic changes which we call primary degenerations. Locomotor ataxia and the progressive spinal myopathies are the classical types. As to the nature of the process here we are much more in the dark. It is not so long ago that Charcot called these diseases forms of "parenchymatous tephro-myelitis"; but it is quite agreed now that there is nothing in them which is in the nature of an inflammation. The nerve cell dies first, as though starved or under the influence of a narcotic poison. The cells die; and as they cannot die without a cause, we must conclude that here, too, we have a toxæmia. Whether this is of a microbic origin we cannot say; but the relation of syphilis to tabes suggests that such is, at least, sometimes the case. The toxine in degenerations, however, whatever its source, has this peculiarity, that it does not cause vascular or connective-tissue irritation. The organism does not react; its cells do not swarm to the support of the invaded region; there is repulsion, a negative chemotaxis and death. Is it not a fair distinction in general, then, to say that in inflammation there is a positive, in degeneration a negative, chemotaxis, both conditions being toxic?

APPLICATION.

Let me apply these views to some points in our neurological nosology.

Cerebral meningitis is a disease that used to be frequently diagnosticated in the alcoholic cells of my service at Bellevue; "alcoholic meningitis" or "wet brain" are perhaps the commoner terms. The patients who suffer from this trouble have many of the ordinary symptoms of meningitis, such as headache, contracted pupils, and muttering delirium followed by coma, rigidity, hyperæsthesia, retracted abdomen, and slight fever. They die; and the brains are found to be only slightly congested or there is more rarely an œdema. There is no exudation whatever. Microscopically there is some evidence of cellular activity; but it is greatly straining things to call the condition inflammation. They are starved and poisoned brains; and this conception of the condition is much more hopeful in therapeutics, as it is more true to science.

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[2] The nervous diseases mentioned by Boerhaave and Sydenham were: Palsy (nervous, major, complete), epilepsy (convulsions), convulsive asthma, tremors, hypochondriasis, hysteric passion, hysteric colic, headache, chorea, hemiplegia, phrenitis, apoplexy, coma, delirium.

[3] Chorea, for example, was a disease of [illegible] order, kinetica; genus, spasmus; species, vascular, traumatic, algid, or catarrhal; pathology, an irritating humor poured out upon the nerves. There [illegible], with the three orders [illegible], æsthetica, kinetica and systatica; and under these were grouped over one hundred species of nervous diseases, many of which we would recognize as old friends. Sauvages was a mighty classifier of symptoms, and made up new nervous diseases with a generous and expansive spirit which is quite in touch with our latter-day makers of disease. Beri-beri is there, and strabismus in several varieties, and cramp and priapismus, and three kinds of tonic kinetica. The learned efforts of later and other nosologists did not much improve the excellent clinical treatise on nervous diseases written by Sauvages in [illegible].

Not rarely a case of *tubercular meningitis*, so diagnosticated, and with typical tubercular symptoms, dies, and we find only intensely red meninges and a few tubercles. The children here do not die of an inflammation, but are overwhelmed with a poison: it is a tubercular toxæmia.

In earlier times the atrophied and porencephalic brains of children were called cases of encephalitis; now, acute encephalitis except from septic infection is not admitted. Nor am I aware of any disease which can be properly called primary chronic encephalitis unless general paralysis be such.[4] I admit, of course, the granulomatous inflammations, syphilis and tubercle.

There has been some discussion in Berlin as to whether *acute primary diffuse myelitis* ever occurs. Oppenheim, in his large experience at Charité, has hardly found a case which he can surely diagnosticate as this disease; Leyden takes the opposite view. For my own part I do not understand how there can be an acute primary myelitis unless it be from sepsis or tubercular or syphilitic foci. If it exists, we must suppose that there is an infection attacking a single segment of the cord and selecting this out of thirty other segments, all equally and evenly supplied by central arteries six hundred to seven hundred in number. This is not in accordance with the way in which acute inflammation attacks other organs. We do not have, for example, an acute exudative and destructive inflammation picking out a section of the kidney or the liver or the lungs or the brain. It is easier to suppose that there is first a ruptured vessel or an obliteration through spasm or thrombosis and that the injured part either simply undergoes repair or, as sometimes happens, becomes secondarily infected and inflamed.[5] Such, it seems to me, is the true nature of the origin of most cases of acute transverse myelitis not caused by trauma. In my own experience nearly all the acute forms of myelitis are evidently due to a syphilitic focus in the cord causing vascular disease with hæmorrhage or softening. I am rarely without a case of this character in my service at Bellevue. The process which follows this is usually a reparative one, with secondary degenerations.

With regard to *chronic transverse myelitis*, it is, I believe, pretty generally admitted that it rarely if ever begins as a primary affection, most cases being the sequela either of an acute process or of some syphilitic disease or traumatism.

It will thus be seen that by rigid, and, as I believe, proper use of the word inflammation, we must drop a good deal of our phlogistic conception of nervous disease and replace them by the words toxæmia and degeneration. The acute poliomyelitis anterior which Charcot described as an acute parenchymatous tephromyelitis has been shown to be inflammatory, and primarily a connective-tissue and vascular trouble. It has probably a toxic or microbic origin also.

Perhaps, gentlemen, you will think I am poison-mad; but I am not entirely through with my insistance on the importance of the toxine yet.

There are *certain chronic neuroses*, of which paralysis agitans is an example, in which post-mortems show that there has been for a long time a continual irritation of the connective-tissue and blood-vessels, with secondary cellular disturbances. Such conditions answer to the definition of a chronic inflammation; and I believe that *paralysis agitans* may now be fairly classed in this category. In a recent review of this subject, in which I presented the reports of two autopsies of my own, I found and have shown the changes I refer to; and I think we can no longer say that this disease is without an anatomical basis. Though I have not space here to go into the arguments, assuming the malady to be of the nature of a peculiar kind of chronic inflammatory irritation, we must infer that there is a cause for it and that this cause is toxic, and further that paralysis agitans is a chronic toxic disorder.

In ordinary Sydenham *chorea* the consensus of opinion seems to be one that attributes its nature to disturbances of the same character; that is to say, the evidence shows that the original trouble is humoral or microbic in origin, and that the anatomical changes partake of a sub-inflammatory character. In respect to this disease we have not advanced beyond the time of Sydenham, who states that he believed it to be due to "a humoral poison poured out upon the nerves."

I am inclined to believe that the theory once propounded by the late Dr. Austin Flint, to the effect that epilepsy is a toxic disease, is in part the true one. Admitting in the first place an over-sensitive and unstable nervous system, may it not be a toxine, the result of some defective metabolism or glandular activity, that is the active factor in producing neuroglia sclerosis and causing the convulsions? The degenerative state which we know exists in most cases of idiopathic epilepsy may find its expression quite as much in a defective tissue-change as in a purely defective condition of the nerve cells; in other words, the idiopathic epilepsy may be best regarded as a disease of the whole body and not, as we are accustomed to look upon it, as simply a disease of the cortex of the brain. The experiments of Drs. Herter and Haig and the studies of Bouchard tend to support such a view.

The dependence of certain forms of headaches, neuralgias, and neurasthenias upon toxic conditions is acknowledged by all; and the fact goes to support the view that some of the more serious and constitutional neuroses have their root in the same cause; in other words, we must regard many nervous diseases as of glandular or metabolic as well as of nervous origin. I might put in evidence here some of the more recently acquired facts with regard to the production of nervous symptoms through disorders of the blood and the glands. Myxœdema is a case so much in point that I need not dilate upon it. From it the deduction that the antithesis clinically of myxœdema, namely, exophthalmic goitre, is due to some glandular defect follows very naturally. Some experiments which I have made go to support this deduction.

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[4] [illegible] refers to such a condition, but his evidence in support of its existence is very inadequate.

[5] A primary inflammation might be caused by an infecting embolus.

A Case Demonstrating the Toxic Origin of Basedow's Disease [illegible]

Hattie B., aged nineteen, single, came to my clinic at the Post-Graduate Hospital in October, 18[illegible], suffering from exophthalmic goitre. The disease began gradually two years before. At the time she had tachycardia, pulse 100 to 120; goitre, all three lobes being enlarged; and slight exophthalmus, with tremor or sweating, nervousness and other general symptoms. She improved somewhat generally under treatment; but owing to the nature of her work, [illegible] did not [illegible], and I advised her to go to the hospital. She was admitted, and had no treatment for a week, except rest. She improved as regards pulse-rate, which sank to about 100, and as to the goitre, which grew somewhat smaller. The next week she had a brief attack of erysipelas, lasting over five days, which did not materially affect her special disease; if anything, she was better after it. She was then placed on injections of thyroid juice, 45 c.cm. daily. She was kept in bed most of the time, and Blaud's pills, which she had been taking, were continued. After two weeks of daily injections, her condition was distinctly worse. Her pulse was 130 to 140 or 150; the goitre a little larger; the tremor increased; the exophthalmus the same; the nervousness no worse. The increase in the tachycardia was the most notable symptom. Treatment was stopped; and she was put upon strophanthus.

It seems to me that there is here pretty good evidence of the special toxic action of the thyroid gland as an agent in Basedow's disease. Some cases of reported cure by surgical operation have, as you know, been collected by Mœbius.

It has been shown that systemic degenerations take place in the spinal cord in cases of pernicious anæmia. The removal of the suprarenal capsules will also, as is well known, lead to disease of the posterior columns of the spinal cord. The similar effects of ergotism, lathyrism, and pellagra are also familiar to you.[6]

I wish that it may be thoroughly understood that I do not lay entire stress upon toxines as being the only element in producing the diseases which I have referred to. There is another one which may be fully as important, and that is an inborn or acquired susceptibility of the nervous system. Some people have nerve-centres which are defective in their power of resistance to the attacks of extrinsic or intrinsic agencies acting injuriously upon the system. Their cells yield to the power of the intoxicant. Perhaps the weakening effect which great emotions produce and which lessen the resistant powers of the entire organism makes especially susceptible those particular parts with which they were inadequately endowed. In this way we may explain how fright will set up a paralysis agitans or a neurasthenia or an exophthalmic goitre. What I want now to impress upon you is the *importance of regarding many of the nervous diseases not as scleroses or degenerations or inflammations or congestions, but as the result of some ulterior factor, and that it is this which we want most actively to attack.* We cannot cure sclerosis of the spinal cord or restore the dead cells in progressive muscular atrophy, but we can or we ought to stop the further action of the cause. How we are going to do it I do not know; but it is here that I would suggest the application of new methods of dealing with infectious diseases — the application of the ferments, immunizing serum, extracts of normal tissues and organs, and antitoxines, from whatever source we can obtain them.

THERAPEUTICAL.

It may interest you to hear the results of my own therapeutical experience in this line during the past eight months. Since July, 1892, I have been using various animal extracts of the thyroid gland, of the brain-tissue, also the rabic virus, and Hunter's modification B of tuberculin. I have treated the following cases by these methods:

Locomotor ataxia (brain extract), [illegible]

Bulbar paralysis (brain extract), one case. Cured.

Progressive muscular atrophy (brain extract), three cases. Not improved.

Epilepsy (brain extract, rabic virus and testicular extract), [illegible] cases. [illegible] improved, two not improved. [illegible] improved.

Paralysis agitans (brain extract), one case. Not improved.

[illegible] (Hunter's modification B of tuberculin), [illegible]. Not improved.

Basedow's disease (thyroid extract), one case. Symptoms increased.

Dementia (thyroid extract), one case. Improved.

Among these cases those in which some specific effects were obtained were cases of bulbar paralysis, locomotor ataxia, epilepsy, and Basedow's disease. The most striking result was that in the case of bulbar palsy, of which I will give here a brief account.

Mr. W. S. H., a lawyer, aged fifty-four, good hereditary history, no syphilis, no alcoholism; no special cause could be assigned for his trouble. He began in the latter part of April, 1892, to notice a stiffness and dryness about the lips; this disappeared. About May 10th he noticed, rather suddenly, a defect in articulation. This increased so that in seven or ten days it was quite marked, and was accompanied with some trouble in swallowing and chewing, also with some salivation. The symptoms of dysarthria and dysphagia progressively increased until he came to me on July 22, 1892. At this time his physiognomy was that of a typical case of bulbar palsy. His speech was thick; he could not pronounce the sibilants or the palatal consonants. He could not touch the roof of the mouth with his tongue. He could only swallow pulpy food; liquids and solids got into the nasal passages. The tongue showed the wrinkled appearance of a beginning atrophy. There were no electrical changes, however, except a slight diminution in galvanic irritability. He could not whistle; and there was beginning affection of the orbicularis so that he could not close the eyes tightly, especially the left.

The diagnosis of bulbar palsy had been made by his attending physician, and it had been corroborated, as I understand, by Dr. E. G. Janeway, of this city.

There was no ophthalmoplegia. He was placed upon tonics and electricity, and as rich food as could be taken. I should say that he had previously been placed upon iodide of potassium and tonics without any benefit. During the two weeks following this treatment there was no particular improvement. On August 9th I sent him to Dr. Paul Gibier, requesting him to inject him with the rabic virus. My belief was that the case was utterly hopeless. In my previous experience I had never found cases which ran so rapid a course to be materially improved by any of our known therapeutic measures. Thinking that the trouble was due primarily to some destructive toxine acting upon the cells of the medulla, it seemed to me that an antitoxine might be found perhaps in the protective virus which is used in Pasteur institutes and which prevents the action of the virulent and paralyzing poison of rabies upon the nerve-centres. Dr. Gibier preferred, before putting him under the rabic virus injections, to try some other measures and he inoculated him with injections of the brain extract dissolved in glycerin and sterilized by being forced through clay under carbonic-acid-gas pressure, according to the method of D'Arsonval. Improvement began almost at once and in six weeks the patient was able to swallow liquids and chew solids. His speech improved; and he, in fact, improved in all ways steadily, and has done so until at the present time no trace of his malady can be detected, except that there is a slight weariness which he feels after long conversation or prolonged mastication.

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[6] [illegible] H. R[illegible]. [illegible]

[illegible] & L[illegible]. [illegible]

[illegible] H. B[illegible], [illegible] March, 18[illegible], p. [illegible].

With regard to the effects of the injections in locomotor ataxia, I can only say that in two cases the improvement was very striking, and that the treatment was applied after these patients had been under ordinary medicinal measures. One patient in particular, who was not relieved at all by injections of water given *solatii causa*, was much relieved subsequently by the injections of gray matter. Three other patients improved under treatment; two did not.

With regard to epilepsy, it seems to me that there is evidence to show that the injections do have some tendency to repress attacks. More than that I am unable to say at the present time.

With regard to the use of the thyroid, I have already reported a case in point. It seems to me to be a very demonstrative confirmation of the theory that exophthalmic goitre is due to a toxine which stands in some relation to the thyroid gland.

I wish, in conclusion, to say with regard to this particular form of treatment, that I have referred to it with some hesitation, owing to the decidedly bad odor attached to these methods. They have been utilized in the most sensational way by those who have sought newspaper notoriety, and reports have been made with regard to them which have been sensational and exaggerated. Nevertheless, I am so firm a believer in the rationality of this method of therapeutics, or in this line of therapeutical investigation, that I am willing to brave some misunderstandings in connection with the use of such preparations. There is no more reason to doubt that there should be therapeutical properties in extracts obtained from animal organs than that there should be such from vegetable organs. We might just as reasonably expect good therapeutical properties from the extract of a gland as from the extract of a root or a leaf or a bean. The remarkable results obtained from the use of the thyroid gland in myxœdema is of itself abundant justification of this position. There is no reason why we should not be able to find some other glandular product which will have a beneficial effect in other toxæmic conditions.

RÉSUMÉ.

I would sum up the points which I have tried to bring out and emphasize in the preceding remarks somewhat as follows:

(1) The term inflammation, as now understood, has to be applied more carefully and with restrictions to nervous diseases. Many forms or cases, for example, of meningitis and myelitis are in reality toxæmias or processes secondary to mechanical injury. There cannot be an inflammation without a specific cause, and we should associate this fact with our conception and our diagnosis of the inflammatory processes.

(2) In the organic neuroses of degenerative type there is a toxine of extrinsic or intrinsic origin, which is negatively chemotactic. The body cells and proteids cannot defend the special parenchyma against it. The degenerations, including muscular atrophies and primary scleroses, are of toxic origin. There is a poison at work which it should be the effort of neurological science to find out how to antagonize and combat.

(3) In the chronic neuroses of functional origin, so-called, such as paralysis agitans, chorea, epilepsy, and Basedow's disease, there is a toxic factor which is of fundamental importance. This may be due to defective gland action as in Basedow's disease and in myxœdema or to humoral poisons of other origin. Many neuroses are really glandular or nutritive or infection diseases.

(4) There is another element of equal importance in the etiology of the neuroses, and that is an inborn or acquired lack of resistance to injurious agencies, whether engendered within or introduced from without. This diminished power of resistance on the part of nerve-centres is produced in some cases by strong emotions and shocks; and while under this depressing influence, the nerve-centres become susceptible to the action of the poisons which then continue and keep up the disease. In some such way as this we may explain the origin of paralysis agitans, certain forms of neurasthenia, and exophthalmic goitre, perhaps, also, even of the organic neuroses like locomotor ataxia. These views lead to the practical conclusion, that in treating many of the chronic neuroses there are two kinds of measures to be employed: first, those which increase strength and resisting powers of the organism; second, those which are of antitoxic or specific character. There are, in all probability, specific cures for many of the diseases which we now regard as hopeless: remedies which will stop the progress of locomotor ataxia and progressive muscular atrophy, and which will neutralize the poisons that keep up exophthalmic goitre, paralysis agitans, epilepsy and other neuroses.

(5) The toxic origin of nervous diseases has been established in the case of myxœdema and made probable in that of exophthalmic goitre, paralysis agitans, chorea; and the importance, at least, of a toxic element has been shown for epilepsy.

(6) Finally, by the term toxine or poison is meant a very wide range of injurious substances, including the products of defective metabolism, defective gland action, microbic growth, and the extrinsic vegetable and mineral poisons.

Tracheotomy without a Tube. — Dr. Frank Stahl, in a paper in the *Chicago Medical Recorder* for April, recommends keeping the tracheal wound open by metallic retractors, or, in case of emergency, by bent hair-pins, and discarding the canula entirely. He believes that in this way much local irritation and the danger of pneumonia is lessened.

Baron Nathaniel Rothschild is reported to have placed his beautiful château and park at Semmering in the Styrian Alps at the disposal of a Viennese society to be used as a sanitarium for the phthisical. The property is valued at about 5,000,000 florins.

REPORT OF ONE HUNDRED AND SIXTY CASES OF EPILEPSY.[1]

BY S. G. WEBBER, M.D., BOSTON.

I AM sorry to say that as I look over the records of my cases of epilepsy I find them defective in many points in regard to which I would like to have fuller information. I shall have to give them as I find them, and can only say that sometimes the patients did not know all their own symptoms, and sometimes in the hurry of practice I did not note all that I now wish I had noted. With the loss of many facts which might have been obtained, I think enough is left to make it worth while to collate the symptoms and draw therefrom what lessons they may have for us.

Of the points in regard to which I failed to get as good an account as I might, I am especially sorry that the question of *heredity* has suffered the most neglect. I find that I have data in regard to only 42 patients. Of these 21 had a good history, sixteen had a poor history, and of five the family history was doubtful.

Among the worst cases of family history may be noticed Case 4 (the numbers refer to a private record of the cases and are used as more convenient than initials). His father was subject to headaches; one paternal uncle and a paternal aunt died of apoplexy; his mother was nervous.

Case 8. Father had small-pox before his marriage, dyspepsia after, rheumatism, lumbago and sciatica. Father's uncle had paralysis; father's brother had a high temper, almost insane; mother was nervous when a child; mother's sister and brother both had convulsions in infancy, but were healthy afterwards; mother had three other children, all healthy. While pregnant with the patient his mother lived in the house with the father's brother, and saw frequent outbursts of anger on his part.

Case 10. Father's family were consumptive. Father was troubled in his head since concussion from cannon in the army; he had crazy fits. Father's father died of paralysis, was often intoxicated; mother's health was not good after his older brother's birth; she had heart trouble; head troubled her; and she was nervous. Mother's father was troubled with headaches; lost power in his hand and limbs, and was crazy; mother's father's father was insane; mother's mother had paralysis. Mother's two brothers and two sisters are troubled with their head when anything is the matter with them; one brother has a tumor in the back of his eye. Mother's cousin had paralysis.

Case 11. Father used to have headaches; mother used to have neuralgia. Mother's father and brother died of apoplexy; mother's grandfather was insane. A brother has headaches; one sister is not nervous.

Case 58. Father's uncle had epilepsy; father's aunt had sick-headaches. Grandfather had apoplexy. A cousin on the mother's side had epilepsy. Mother belongs to a tuberculous family. This patient was married the day after his first attack.

Case 74. Mother had convulsions in infancy. A sister and brother died in convulsions; another sister had convulsions.

Case 94. Father's mother had fits. Mother's brother had fits when eighteen years old. Patient's brother had fits beginning at eighteen.

Case 97. Maternal great-aunt had paralysis; maternal grandmother and aunt were insane. Older brother had a temporary paresis of one leg. Mother's father's family inclined to be weak on the left side.

Case 110. Father had fits when a boy, and later had bilious headaches. Father's brother had fits. Father's sister had fainting-turns; another sister had fits when young, and her children had them when young.

Case 154, mother's brother is very nervous; another brother has fits. Mother's cousin has fits. Mother's father is very nervous; mother has sick-headaches.

These are the most striking instances of family taint. Many other cases showed the presence of one or two members in the family who had some nervous tendency or epilepsy. Convulsions or epilepsy were present in ancestors in nearly half the cases with hereditary taint.

As to sex, there were 102 males, and 60 females among my patients. This does not agree with the proportion found by Gowers, but is in accordance with the statistics gathered by Althaus.

Epilepsy is a disease of *childhood* and *youth*. The first attack occurs most frequently between the ages of one and twenty, or thirty.

The decade between ten and twenty is that in which the largest number of cases originate, but few cases commence after thirty.

Of those in which the disease began after thirty, three were caused by syphilis, four by injuries of the head, three by acute disease or stomach trouble, three the cause was unknown; the others were caused by sunstroke, bad habits, nephritis, onanism, pelvic tumor and possibly cerebral tumor.

The oldest age at which epilepsy has shown itself is sixty-eight, caused by two sunstrokes; there was one case at fifty-seven and one at fifty-eight; all the other cases are under fifty.

Thirty-six patients had fits when infants, and later in life the convulsions began again and continued as in epilepsy beginning later. In seventy cases there were no such attacks in infancy; and in fifty-six cases it is not recorded whether they had such attacks or not.

Nine cases had convulsions when less than three years old and continued to have them from that time on. These are not included among those who had fits when infants, the epileptic attacks appearing later in life.

It will be seen that only a small proportion of the patients had convulsions during the first dentition.

Under 1 year	3
1 to 3 years	21
3 to 10 years	10
10 to 15 "	29
15 to 20 "	25
20 to 25 "	11
25 to 30 "	13
30 to 35 "	10
35 to 40 "	5
40 to 45 "	3
45 to 50 "	3
50 to 55	0
55 to 60	2
60 to 65 "	0
65 to 70 "	1
Adult	1
Unknown	1

Of *exciting causes*, as given by the patients or their friends, the larger number of cases were due to injury to the head. Among these are included many cases of comparatively slight injury; it is probable that only a small proportion of these were serious enough to produce any organic change in the brain and in many cases it is doubtful whether the injury had any causative influence. In one case the attacks did not appear until twenty-one years after the injury; in another there was an interval of five years after a fall which did not produce insensibility; others were slight falls occurring near the time the disease began, probably not more severe than many other persons have with no bad result.

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[1] Read before the [illegible], Boston.

Overheating is the next most frequently occurring cause. There was not a fully developed sunstroke, generally there was simply an overheating. In one or two cases this had occurred twice.

Indigestion was given as a cause by patients or their friends only seven times, a smaller number than I should have supposed would be the case. It is not certain that this was the real cause of the attacks in even all these cases. It was clearly the cause in one patient who was camping out with companions, who had not calculated correctly in regard to their provisions, and found themselves with nothing to eat but cheese for two or three days. The first attack occurred immediately after this experience. It is instructive that no other of the party had such attacks, showing clearly that behind the exciting cause there must be an individual peculiarity, which serves as the foundation on which the disease is built.

Five of the cases of syphilis were either cured or materially benefited. In one case the result is not known. It is possible that in these there was some organic change in the brain.

Of the four cases in which the teeth are mentioned as the cause of the disease, none were infants; they were from eleven to twenty two years old when they had their first attack. In one case the teeth were defective and came irregularly. In the other cases there was an irritation of gums as is seen in infants.

CAUSES OF EPILEPSY.

Injuries to head	24
Injury to other parts	3
Overheating	11
Indigestion	7
Fright	6
Acute disease	6
Syphilis	6
Teeth	4
[illegible]	3
[illegible]	3
[illegible]	2
[illegible]	2
Bad habits	1
Lead	1
Bathing too long	1
Pelvic tumor	1
Possibly cerebral tumor	1

In Case 153 pregnancy seemed to be the chief exciting cause, as the attacks occurred at that time and were absent at other times. She had no fits as a child. She was married the second time in January and in July had an attack in which she called to her husband, "Oh! dear! don't leave me!" Then she had a slight spasm, may have been unconscious for a few seconds. She had no nausea, and thought that these attacks took the place of the usual nausea. During her second pregnancy she again had the attacks which ceased at the third month. After the birth of her second child she had a series of attacks just before the catamenia began. In one of the attacks during the third pregnancy she fell on the piazza and as result had a miscarriage. About three weeks before the birth of the next child she overworked mentally and had an attack in which the right side was paralyzed and she had aphasia for about a week and later she stuttered and could not write as she could not spell. She recovered from this condition. In Case 118 the first attack may have been due to albuminuria during pregnancy, and later she had a mental shock which seemed to be the exciting cause of subsequent attacks.

An *aura* was felt habitually in 62 cases; occasionally in 10. It was absent in 28 cases.

An aura is sometimes felt when there is only the petit-mal, though it is then often difficult to separate it from the petit-mal. The petit-mal may form the aura when the grand-mal is developed. In most cases the minor attacks occur without warning and the aura is felt only when there is a major attack.

In one case the patient had warning the day before an attack by feeling badly and crying in the evening. In another case there were chills running down the left arm three or four days before the attack. Another had a sense of faintness the preceding day; yet another felt badly in his head with impaired memory for a day or two previous to the epileptic fit. Generally, however, the warning was only a few seconds or minutes previous to the attack, in some cases an hour or so.

The sensations which form the aura are very varied, they may be felt in any part of the body.

In the table the total is not the same as given above, as some patients have two sensations occurring together for an aura: hence they would be counted twice.

AURA IN SEVENTY-TWO CASES.

A dizziness or sense of uncertainty as to position	9
Sensations in various parts of the body	
Head and face	8
Stomach	6
Arms	2
Heart	2
Throat	1
General	1
Special senses	
Sight	4
Smell	1
Sensation of cold or a chill	7
Cramps	3
Nausea	2
Sleepiness	2
Hunger	1
Dyspnœa	1
Languor	1
A lost feeling	1
A surging feeling, not a thought	1
A surging feeling	1
Mental sensation, not a thought	1
Unpleasant sensation	1
As if clothes would drop off	1
Motion, twitching or trembling	5
Rapid swallowing	5
Two movements of bowels near together	1
Paleness	1
Palpitation	1

In some cases of *petit-mal* the patient is clearly unconscious during the petit-mal, and the attack approaches very near to the grand-mal; in other cases the petit-mal is of a very insignificant type, and strangers may not recognize it. One of my patients, a boy, would frequently have an attack while riding his bicycle, and had no trouble in continuing his ride. He did not fall nor show signs of having the attack; yet he lost consciousness for a brief interval of time, and himself knew that it was so.

Many times the petit-mal will for several years be the only manifestation of the disease; and then the grand-mal will appear, at first only occasionally, later more frequently, until it comes to be the chief factor. It is often difficult to persuade friends that the petit-mal, so simple and apparently inoffensive a phenomenon, is the first sign of a very grave and serious disease. Patients or their friends ought to be warned as to the serious nature of these seemingly insignificant attacks, as it is desirable in some cases to prepare for the future, to take measures to prevent marriage, to choose an occupation for life, or a dwelling-place; to decide a number of questions, for which it is necessary that the truth should be known. If the patient is properly warned and instructed as to the nature of his trouble, he will soon become used to the idea that he is an epileptic, and while not perhaps reconciled to his lot, he will be thankful that he knows it and can govern himself accordingly.

In many cases there seems to be no loss of consciousness in the petit-mal; but if the attack is carefully observed, it will generally be found that there is at least a momentary loss, though it may be of such short duration as to be overlooked, or that the patient does some automatic act which deceives the observers into thinking that consciousness is retained.

Case 18, a girl, thirteen years of age, seen December, 1873, when seven years old was struck on the back of her head by a stone. Some two years or more after, she had attacks when she would complain of being cold, then her left hand and leg and left side of her face would work; this would last a few minutes, and she would be all over it. She had these twice a week at first, or sometimes more frequently. Her mother said there was no loss of consciousness in the attack; yet on coming out of it she did not remember what had happened. It is probable that the friends were deceived, and because she could answer questions thought that there was no loss of consciousness, not realizing that the answers were automatic, the questions being very simple.

Case 8 is another one in point. It is that of a girl, five years old, who was seen in 1872. The family history was not very good. She was a quiet baby; when sixteen months old, having four teeth coming togther, she had two convulsions immediately succeeding each other, lasting thirteen hours. She was perfectly healthy after this until she was four years old. After the first convulsion the right side was paralyzed for about a week.

When four years old she had attacks of dizziness, with seemingly no loss of consciousness; in these she could not speak plainly; the mouth was drawn up; the tongue was as if tied; she ran to her mother, and said, "It is coming on." She knew about half a minute or a minute before that the attack was to occur; after the attack she usually went to sleep. The attack lasted ten seconds or perhaps more; there were no convulsions. At first the attacks were every other day or twice a day; later they occurred about once a week, perhaps two in one day.

She had a spell in my office. She was sitting in her father's lap; she caught his hand, said she was sick; face became pale; there was an anxious look about the eyes and mouth; the eyes were slightly staring. During the attack she answered questions relating to the attack which required only the answer "Yes" or "No"; she did not seem to lose consciousness, yet probably her intelligence was impaired.

This is a case where there was only the petit-mal, and that was of the lightest kind. She received no permanent benefit from treatment. I [illegible] instructive case as showing that these are not by any means the easiest to treat successfully, and that these very slight spells are true epilepsy.

Case 12 shows that the petit-mal may be the only manifestation of epilepsy for some years, and then the major attacks may appear, thus proving the importance of the minor attack and that these mild cases should receive as much care as if they were the more marked form. This patient was much exposed when he was about thirty years old, and after a rheumatic fever had attacks of dizziness once in two weeks or so. These grew gradually worse; and after two or three years during the attack he had to hold on to something to support himself. About two years after he had his first fit; and after this he had the grand-mal once in four or six months; later, they occurred once a month. During this time he continued to have the same attacks of dizziness as petit-mal.

This man had for two years the minor attacks; then the fully developed major attack appeared with the same petit-mal between; and for thirty years he had these attacks. The question naturally arises, Whether if the true nature of the early petit-mal had been recognized at the very beginning, he may not have been freed from the many years of distress and sense of insecurity?

Case 58 is that of a man, twenty-five years old when first seen. When fifteen years old, he fell down a flight of stairs. At about twenty years of age he had spells of dizziness, with a rush of blood to his head and a sense of pressure therein; no faintness no discomfort after, rarely headache. These attacks recurred about once in six months. Two weeks before I saw him, he had a clammy feeling in his little and ring finger, then a throbbing in the fingers and arm without pain. It was about three minutes from the beginning until the throbbing and the sensation was very disagreeable; then twitching of the little and ring finger, then of all the fingers; and after about a minute the fingers were contracted, the thenar and hypothenar eminences approached; then he lost consciousness; and then the convulsions became general. In the two weeks he had six or seven of these attacks. He had small spots of extravasated blood under the skin of his face.

Case 61 is also one where the attacks of petit-mal were present two years before the grand-mal, and continued after the latter appeared. In this case a woman, nineteen years old, during pregnancy had attacks of rush of blood to the head for a moment, then a strange quiver, head feeling oppressed and things looking strange. Soon as this passed off, she felt warm and face was flushed; then she was cold and trembling. She had these petit-mal in series every four to eight weeks, two or three an hour all day long. During these she seems not to lose consciousness, or if she does it is only for a second or so. After two years she had a grand-mal in the night; she had another after three years, and again another. In these the blood seemed to settle in the face.

Case 63 is one in which there was only the petit-mal. In six years or more there had been no severe convulsions, the attacks consisting of a bad smell, "a rotten smell in the nose," and a sleepy feeling running down the right arm, and a drowsy feeling after it. He had this sensation two or three times a day.

Case 65 is that of a girl, ten years of age, who at eight years had an epileptic attack, the first one; she had two or three others, the last one when cutting a double tooth. She had also numb spells, which began in the right hand, and if she was then holding anything in her left hand she dropped it, the right hand shook, the head shook and was inclined towards the right. Bromide of potassium was of benefit to her; the numb spells soon stopped; and later, when the tooth was fully through, the grand-mal also stopped. The irritation of the tooth seemed to be the cause of the attacks.

Case 66 is of special interest, because the attacks of grand-mal seemed to cease, and give place to the petit-mal, which had some peculiar characteristics. This boy was four years old when he was first seen. The history then obtained was very brief; when two years old he had convulsions, and twice after that, then again about twelve weeks before I saw him; after the last he was paralyzed in his right hand and arm and right side of his face.

I saw him again seven years later. He had almost entirely recovered the use of his right hand. He had slight attacks, but no real fits. He stood a few minutes, not speaking; then he would run and do some strange thing; for fifteen or twenty minutes he did not seem to know what he did. At one time he would throw things around at people.

Here is a combination of the petit-mal with automatic acts.

(*To be continued.*)

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Clinical Department.

TEN ADDITIONAL CASES OF APPENDICITIS.[1]

BY HOMER GAGE, A.M., M.D.,
Surgeon to Worcester City Hospital and to the Memorial Hospital.

Last winter I reported before this Society six cases of appendicitis that had come under my observation during the preceding year; and I now desire to supplement that report by adding ten others that have occurred since. These do not include cases seen in consultation at the hospital which have been in the care of other members of the staff.

One of the cases reported last year as having recovered without operation has since died of a second attack; and the completed history of the case with the record of the autopsy is so interesting that you will pardon me for referring to it again here. It was the case of a colored man, eighteen years old, who entered the City Hospital November 11, 1891. With your permission, I will read the report of his first illness from my paper of a year ago.

F. C., colored, eighteen years old, a coachman, entered the City Hospital November 11, 1891. There was no history of previous illness. Three days before he had been seized with severe abdominal pain, which began on the right side and gradually extended all over the abdomen. There had been no vomiting after the first onset of the illness; his bowels were loose, three or four movements daily. At entrance his temperature was 100.2°, pulse 93. The abdomen was moderately distended, tense, with a slight fulness in the right lower quadrant, where it was very painful, sensitive and dull on percussion. The rest of the abdomen was tympanitic and not tender on pressure. There was in the right iliac fossa an increased sense of resistance with a doubtful tumor. On the following morning, he had a large movement of the bowels from an enema. The distention and tympanitis were both less than on the preceding evening; pain and tenderness were diminished; and there was no tumor to be felt. I had expected to operate; but he seemed so much better that I decided to delay. The pain never returned; the distention remained about the same for several days; the tenderness rapidly disappeared. On the 16th, five days after entrance, he was so much improved that he could move all about the bed without pain; had very little distention and no tenderness. On the 23d he was discharged, well.

Just two months later, he was readmitted, with a recurrent attack of four days' duration: and two days later was operated upon by Dr. S. B. Woodward, who opened a localized abscess at the level of the umbilicus on the right side. Nine days afterwards he died of pyæmia; and at the autopsy the abscess which had been opened was found to be up under the liver, and evidently secondary to a process originally located below. Numerous small metastatic abscesses were found in the lungs; and, deep in the pelvis, between the rectum and bladder, was a thick, cheesy mass of partly absorbed pus, the remains of a former abscess. Close beside this was the appendix, very firmly bound down by adhesions, with evidences of old ulceration with perforation.

In the light of the autopsy, I think there can be no question but that his death was the direct result of his first attack of appendicitis, and that it might, perhaps, have been avoided by active surgical interference at that time. And yet I think that every one who saw that case with me will agree that if any cases are to be left without operation, his was most certainly one. At the time I was considering the question of interference, he was in excellent general condition. There was a localized abscess, in the midst of which was the perforated appendix, and all the conditions were favorable for a successful operation. Such histories must inevitably discredit the policy of non-interference, and furnish a strong foundation for the more radical opinions which have been advanced and so ably defended by Dr. Worcester, of Waltham.

The six cases that I reported last year included three recoveries and three deaths. That record must now be modified to two recoveries and four deaths; certainly a terrible mortality. There were three operations and three non-operative cases, and two of each died. Of the ten cases which I now have the honor to report, seven have recovered and three have died — certainly a much more satisfactory showing, attributable, I think, more to increased experience than to any other one factor. Of these ten cases, two were not operated on, and both died; eight underwent an operation, and of these, seven recovered and one died.

Now, first let me refer very briefly to the two cases in which I did not operate:

The first was Miss K., nineteen years old, seen in consultation with Dr. F. G. Fay on the sixth day of her attack, February 5, 1892. She had been seized with severe abdominal pain at the time when her catamenia were just due. It was accompanied by high pulse and temperature, gradually increasing distention, constipation of wind and fæces, and vomiting. The pain, at first localized on the right side, had extended all over the lower part of the abdomen, though it was still greatest in the iliac region, where there was increased resistance on pressure. Her pulse was 132, very soft and compressible, and relief by means of any operation was manifestly out of the question. She died in forty-eight hours; and at the autopsy a perforated gangrenous appendix lay just beneath the abdominal wall, surrounded by pus. There was no definitely localized abscess, but the pus had worked its way between the coils of distended intestine until it had reached the upper surface of the rectum.

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[1] Read before the Worcester Medical Association, February, 1893.

The second case, seen in consultation with Dr. L. F. Woodward, January 10, 1893, was a male, twenty-six years old. Four days previously he had been seized with abdominal pain, tenderness and vomiting. Pain and tenderness referred chiefly to the right iliac region, where there was increased muscular resistance, but no tumor. The temperature had not been over 100.5°. I saw him on the fifth day. He was pale, very thin, hectic flush on cheeks, with the general appearance of a tuberculous subject. His temperature was 101°, pulse 108; no vomiting since onset. Bowels had moved freely; abdomen was slightly distended, but there were then no local signs. In view of the very unpromising condition of the subject and the almost complete absence of local signs, I decided against operation and advised the continuance of salines. The patient died two days later, without the development of any further symptoms of peritonitis. He certainly would have died sooner had I operated. That it was a case of appendicitis I have not the least question, but it has always seemed to me that there must have been some complication in the nature of previous or constitutional disease which at the time could not be recognized, but which was really the determining factor in his death.

Of the eight cases which underwent operation, three belonged to that class in which, after more or less pain and constitutional disturbance, we find prominence and localized tenderness with dulness and other signs of abdominal tumor, that is, when there is circumscribed peritonitis and abscess.

A. B., thirty-five years old, colored, a tailor, was admitted to City Hospital February 7, 1892. He had had one previous attack of abdominal pain and tenderness, and gave a history of a severe abdominal injury two years previously. Present attack had begun ten days before, with severe pain, tenderness and vomiting, local symptoms referable to right iliac region, followed by general distention. At entrance, the abdomen was universally distended, with especial tenderness over the right iliac fossa, where there was an ill-defined tumor. Incision revealed a localized abscess, firmly imbedded, on the floor of which could be felt the appendix. The abscess was thoroughly irrigated and drained. He left the hospital in three weeks, and with the exception of a small superficial abscess about six weeks later, has remained perfectly well.

A. C., twenty-six years old, seen in consultation with Dr. Pierce, of Bernardston, May 15, 1892, had had three attacks of abdominal colic with vomiting, during previous two months. Present attack of two weeks' duration, no vomiting; had been up and around part of the time, but complained constantly of pain in the right side whenever he moved, and could not stand upright. Four days before my visit, he had made the trip from Worcester to Bernardston, alone, and since then had been in bed. Bowels moved on the 13th. Temperature had varied from normal to 101°, and at my visit was 100°, pulse 70. The abdomen was not distended or tender. There was muscular rigidity; but on the right side, beginning at the level of the anterior superior spine and extending upward and backward along the crest of the ilium, was a hard, irregular bunch the size of a hen's egg, not tender, slightly dull on percussion. He said he felt better than he had since he had been sick. I made a note at the time that it was a case of appendicitis, probably in process of resolution, and advised delay with continuance of the treatment, and operation later during the interval. I left him sitting up in bed and eating an orange.

Several days later an exacerbation occurred, during which Dr. Pierce made an incision, disclosing an abscess, from the walls of which he dug out the appendix and removed it. A fæcal fistula followed for a short time, but the patient ultimately made a good recovery.

I think now that my judgment in advising delay was wrong; and in the light of further experience I think I can see points in the history of that case which ought to have led me to a different conclusion. Fortunately, the error was not a fatal one. Attacks occurring at short intervals, with a well-marked tumor which had been present for about two weeks, irregular elevation of temperature and inability to stand erect, might unmistakably have indicated the presence of pus, and pus once suspected, operation is imperative. He seemed so perfectly comfortable, so much better than he had been, that I was misled into supposing that resolution had begun.

A. C., forty-six years old, book-keeper, was seen by me in consultation with Dr. G. F. Woodbury on January 16, 1893. On January 4th, after an exposure to wet and cold for several hours the night before, he began to complain of soreness and pain on exertion, in the right iliac region. During the next week the temperature rose as high as 100.5°, pulse not over 80; no vomiting, no pain, and but little tenderness. On the 13th, temperature normal; he was up and dressed. He did a good deal of work about the house, and that evening had recurrence of tenderness and soreness, but no pain or vomiting. At the time of my visit, his temperature was 101.5°, pulse 80. He said he felt perfectly well, except soreness and tenderness on the right side. The abdomen was very slightly distended, and on the right side was an ill-defined tumor with considerable muscular spasm and marked tenderness. As the tumor was small and evidently entirely localized, and patient was anxious to avoid operation, I advised waiting a short time before interfering. On the following night his temperature rose to 102.5°, and although his general condition was still unaffected, I operated on the morning of the 18th. A localized abscess, containing about six ounces of foul-smelling pus was evacuated, and the cavity irrigated and packed with gauze. Appendix was not removed. His convalescence was slow, complicated by a phlebitis of the left femoral vein. The wound has, however, closed, and recovery is apparently complete. The most remarkable feature of this case is, I think, the entire absence of pain and vomiting.

These three cases represent the most favorable type of appendicitis which calls for operative interference; and the operation is the simplest possible — the opening and draining of an abscess. Of course, the adhesion of intestine to abdominal wall make very careful dissection, and the ability to recognize the intestinal coverings very essential, for it is as easy as it would be unfortunate to open the adherent bowel, and thus to delay and complicate the operation. The greatest danger, however, is, that we can never be sure that opening an abscess is all that it will be necessary to do. Some of the most difficult problems in abdominal surgery are presented in what promised to be the simplest cases; and in attempting the operation, one must be prepared to meet them all.

A case illustrating one of these difficulties is that of a boy, thirteen years old, under the care of Dr. Nichols, whom I saw first in September, 1892. He had had several attacks of appendicitis since the middle of June, with very short periods of remission; and for a month past a small, hard tumor, very tender, had been felt in the right iliac region. Each attack would begin with pain in the right iliac region, vomiting, and temperature rising to 101° or 102°. With rest in bed, counter-irritation and careful attention to diet, each attack would quickly subside, but the bunch had remained. I regarded the case as one of localized abscess, and felt that operation was necessary. My personal relations to the patient were such that I preferred not to do the operation myself, and accordingly suggested that Dr. Richardson, of Boston, be asked to do it. He also felt convinced of the presence of pus, and so expressed himself to the family. Incision revealed a hard mass of tough, firm adhesions. These were separated so as to expose the cæcum, but no pus and no appendix was found. The cavity was packed with gauze and healed without suppuration. The boy has regained his former health and strength; the bunch has entirely disappeared; and there has been no recurrence. Finding neither pus nor appendix, makes it difficult to satisfy the friends of the necessity of operation. I presume this case might have recovered without operation; but the operation conservatively done, did, and could have done, no harm. Not to have done it would have been to take chances that seem to me unwarrantable.

A second case in which neither pus nor the appendix could be found was that of E. E., thirty-five years old, grocer, who was seen by me in consultation with Dr. G. F. Woodbury, December 18, 1891. He had a history of a previous attack in August, 1891, since which time he had constantly complained of pain, epigastic, but had been up, about, and attending to business until within a week. He was seized suddenly in the night with severe pain in the right side and vomiting. Pain continued, and was controlled only by morphia. The abdomen was somewhat distended. There was tenderness over the right iliac region, but no tumor. Muscular spasm was general; bowels had been opened by cathartics. In the absence of local signs, and the doubt that existed in my own mind as to the existence of any general or even local peritonitis, I counselled further delay. On the 20th it was, however, evident that a general peritonitis had begun; and although there were no more well-defined local symptoms, I operated. A general peritonitis was found, with fibrinous adhesions, but no pus. Careful examination of the cæcum failed to reveal the presence of the appendix. The abdomen was irrigated with hot water, and closed with a glass drainage-tube. The general peritonitis continued; and he died two days later. At the autopsy, the appendix was found lying behind the cæcum and extending upwards about four inches, its tip resting on the right kidney. The end was perforated, and pus could be squeezed out of its entire length, and had already formed a small abscess between the cæcum and kidney. It would have been manifestly impossible to have removed the appendix through the abdominal incision at the time of the operation without tearing up the whole of the cæcum. With my present opinion as to the necessity of early operating, I think the operation ought to have been attempted earlier; but I cannot yet see how the result could have been averted.

The next two cases are both of early operation, with removal of the appendix, and both successful.

A. R., coachman, twenty-five years old, referred to me at City Hospital by Dr. G. O. Ward, December 25, 1891. He had had three attacks of bilious colic, so-called, since the preceding April, each succeeding attack more serious than the last. Thirty-six hours previously he had been seized suddenly with pain, vomiting and diarrhœa; the pain and tenderness were referred to right iliac region, where the pain in previous attacks had been located. Temperature on the 24th 103°, pulse 100. On the 25th, when he entered my service, his temperature was 101.5°; had been vomiting and purging through the night. His abdomen was distended, but there was no tumor. In the evening, forty-eight hours after his first seizure, I operated. Upon separating an adherent mass on the inner side of the colon, I succeeded in isolating the appendix, which was very much thickened, the surface red and highly injected. It was ligatured and cut off. There was no pus. Immediate improvement followed the operation; the patient made a complete recovery, and has had no recurrence of the trouble. This case, would, I believe, have ended in abscess; but early operation made it possible to remove the appendix with the minimum risk of general peritoneal infection.

N. C., seventeen years old, carpenter, seen in consultation with Dr. J. O. Marble, January 30, 1893. On the evening of the 28th, while down town, suddenly seized with severe abdominal pain and vomiting. These continued through the night; and on the forenoon of the 29th the temperature was 103°, pulse 120. Some distention with extreme tenderness in the right iliac fossa, constipation of wind and fæces. On the following morning, when I first saw him, temperature was 102.5°, pulse 110, considerable abdominal distention, tenderness quite general over the abdomen, increased muscular resistance and ill-defined tumor in the right iliac region, tongue thickly coated and dry. He said that he felt better than on the day before. Subjective improvement under the use of salines is, I think, entitled to very favorable consideration, as in Case I. Under the use of opiates, as in this case, it is very apt to lull both patient and his physician into a feeling of false security, and must never be a counter-indication for operation. I operated twenty-four hours later, that is, sixty-four hours after onset of the attack. He had been vomiting throughout the night; pulse 120, temperature 102°, and general aspect as bad as it could be. Upon opening the abdomen, I came at once upon a mass of gangrenous omentum, the meshes of which were infiltrated with pus. Just beneath this was an abscess-cavity, containing about four ounces of very foul pus, lying in which was the appendix, perforated about two inches from the cæcum and gangrenous about the perforation. I ligatured it close to the cæcum, cut it off, and cauterized the base. The cavity was further explored until I was sure that all the pus had been evacuated, irrigated with peroxide of hydrogen and packed with gauze. The temperature fell to normal the next morning, and remained there. The cavity has closed, and he is up and about the house, apparently perfectly well.

The last case was one of chronic or recurrent appendicitis, which was operated upon during an exacerbation, and the appendix removed.

W. B., seven years old, school-boy, who entered the Memorial Hospital December 17, 1892, with a history of having been ill for a week with abdominal pain and tenderness, chiefly in the right iliac region, with fever and some vomiting. I saw him on the eighth day of his attack, when his temperature was 100°, pulse and respiration natural. He was unable to move without pain in the abdomen, but when quiet was comfortable. There was slight distention, with tenderness and increased resistance in right iliac fossa, no tumor. At the end of eight days, he was far from appearing very sick, and so far as I could learn had not been dangerously ill; and I accordingly determined to wait twenty-four hours and try the effect of salines. After free movements of the bowels, his symptoms entirely disappeared, and with the exception of two slight rises of temperature remained well for four weeks, when he was discharged from the hospital. On February 9th, he was readmitted, with history of having had abdominal pain and tenderness for five days. His temperature was 99.5°, his abdomen somewhat distended and tender with an ill-defined tumor. Two days later I made an incision in the right linea semilunaris, entered the free abdominal cavity, and found a small, hard lump in the region of the cæcum, consisting of adherent bowel and omentum. Separating the adhesions, a few drops of pus were found, and the appendix isolated. It was thickened, inflamed, and at one point, about an inch from its tip, was constricted by the attempted contraction of an old ulceration. In the bottom of the wound was a small fæcal concretion the size and shape of a lemon-seed. The appendix was ligatured and removed, and the patient has made an excellent recovery.

In conclusion, I have only to say that the more I see of appendicitis, the more strongly am I impressed with a sense of its very grave danger. It ought never to be regarded or treated lightly. The mildest attack may be but the forerunner of the most serious complications. With such a view of its nature and gravity, I am, of course, much more inclined to early and radical operation than I was a year ago, and by early operation I mean operation within the first two days, or as soon as the physical signs become definitely localized; and such early operations are much more apt to admit of the radical removal of the appendix. I am well aware that not in every case is surgical interference practicable or perhaps even desirable; but increased experience has certainly made the number of such cases smaller and smaller. In my former paper, I laid down some rules which I thought had helped me to decide when to operate and when to let alone. I have since wholly abandoned them, and am now convinced that all attempts to classify cases of appendicitis with reference to the indications and counter-indications for operations are absolutely impracticable. Dr. Maurice H. Richardson, whose experience of eighty-seven cases, the largest thus far reported, says: "Unfortunately, there is no rule by which we may be guided, except by experience, and I am unable to say in one case why I operate, and in another advocate delay."

In the cases detailed above, I have never regretted operating, and but once or twice have been sorry that I delayed. Experience certainly gives one greater confidence in one's own judgment, and is, as Dr. Richardson says, probably the only safe guide. Allow me, however, to say one word with regard to the thoroughness of the operation. I am very sure that I have seen adhesions separated and a track made by which pus has been allowed to gravitate into the pelvis, when simply opening the original abscess, without any attempt to explore its walls, would have prevented the formation of a secondary abscess with its complications. I have also seen cases where not to have broken down adhesions and opened up secondary collections of pus at the time of the primary operation, would have rendered that operation perfectly useless. How far it is safe and necessary to explore these cavities is, I think, a question no less important than that of operating at all. And I simply wish to say here that as to that question each individual operator must be willing to assume the responsibility of being guided by his own experience, remembering that it is safer to err in doing too little, rather than in attempting to do too much.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 19, page 473.)

REMOVAL OF THE SEMILUNAR GANGLION THROUGH THE BASE OF SKULL FOR FACIAL NEURALGIA.

Edmund Andrews has described a method by which he has operated on two patients afflicted with neuralgia of the extreme form.[28] It is as follows: After shaving and disinfecting the surface, a vertical incision was made at each end of the arch of the zygoma. These were then connected by a horizontal cut along the arch, which was then sawn through at either end. The arch thus separated from the temporal fascia was then turned down on to the jaw with the attached masseter muscle. The coronoid process of the inferior maxilla was next sawn through and turned upward with the inserted temporal muscle, on to the side of the head. Next, by dissecting through the mass of fat thus exposed and in which the internal maxillary artery was ligated, the external pterygoid muscle was exposed and divided near its insertion. The dental nerve is found just under it, and near it the gustatory. These are divided, the proximal ends clamped with forceps and used as guides to the foramen ovale. The finger, also, by passing along the posterior free border of the external pterygoid plate, locates the foramen. At this point Andrews modified the Rose method by which the deeper parts were exposed, and, instead of trephining at the foramen ovale he scraped away the muscular attachments from the level under surface of the bone where there are no important organs to be injured, and cut out a button (five-eighth of an inch) just external to the foramen ovale. He then, with a rongeur forceps, cut out the bony bridge between the trephine hole and the foramen. The nerves are now strongly pulled outward, a semilunar cut is made at the inner side, through the capsule, and a small, sharp surgical spoon inserted, the convexity inward, to avoid injuring the carotid. With this instrument the ganglion is removed. The inferior maxillary nerve was cut off close to the dura mater and removed after the ganglion had been curetted out. The operation is ended by fastening with silver wire in their original sites the resected bones and the external wound sutured. Ulcerations of the cornea is reported as affecting the eye of the affected side if it was not carefully protected. The operation was successful at the time the report was made, five months later.

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[28] International Medical Magazine, 1892.

Krause also describes an extreme case of trigeminal neuralgia, where after two unsuccessful operations he relieved his patient by an intracranial operation.[29] An osteo-plastic flap was made, the middle cerebral cavity exposed, and the base of the brain elevated on a spatula. Hæmorrhage from the dural vessels so interfered with the operation when the foramen rotundum was reached, that the operation was suspended, and the wound packed with iodoform gauze. Five days later the packing was removed, and the second branch dissected out of the foramen rotundum and a half-centimetre removed. The flap was then replaced. The wound was at first drained with an iodoform gauze strip. It united firmly, and the relief from pain was complete. Krause would advocate this procedure only when all other kinds of treatment, both operative and medicinal, had failed, and when the intenseness of the suffering seemed to justify it. In this connection it is of interest to recall the less radical procedure which Krönlein has termed his "Retrobuccal Method," by which, through a incision in the cheek, he finds the divisions of the third branch of the fifth nerve and traces them to their exit from the foramen ovale.[30] His incision is a horizontal one, commencing one centimetre from the angle of the mouth and ending one centimetre in front of the lobe of the ear. Through this the coronoid process of the lower jaw is cut off after freeing it from its muscular coverings. This, with the inserted temporal muscle, is then pushed upward. The nerves are then found, and traced to the base of the skull. They can then be treated according to the Thiersch method or extensively excised. S. J. Mixter[31] has resected the second and third divisions at the foramen rotundum and ovale. He operated by cutting through the temporal muscle (the Salzer method).[32] He calls attention to a ligamentous or bony bridge connecting the border of the external pterygoid plate with the spinous process described by Dwight.[33] There is always a ligament and sometimes a bony bridge; and in one-third of the cases these structures divide the main divisions of the nerve. Mixter found such a bridge six times in one hundred and twenty-five cases. When present, it must be broken away or cut through before the foramen ovale is accessible. Some of the pathological conditions present in these severe types of trigeminal neuralgia have been described and illustrated by J. J. Putnam.[34]

A NEW METHOD OF TEMPORARY RESECTION OF THE SACRUM FOR OPERATIONS ON PELVIC ORGANS.

Rydygier[35] offers this procedure as a substitute for the Kraske-Hochenegg method. He claims that it avoids the large posterior opening when the rectum is left without support, a condition which he thinks is the cause of some of the failures of union of the rectal wound, and subsequent fæcal fistulæ. The rectum is pulled backward by the contracting cicatrix, flexed, and its lumen diminished. The replaced segment of the sacrum prevents this flexion and protects the suture, or, if a fistula forms, favors its early closure. Temporary resections have been done by Billroth, Schlange,[36] Heincke,[37] Kocher, Arnd,[38] Levy,[39] Beck,[40] and Hegar. The resection increases the time of the preliminary operation and lengthens the operation. Also necrosis of the replaced segment has been mentioned.

The Rydygier operation begins with an incision which extends downwards on the left side parallel and about one centimetre distant from the border of the sacrum and coccyx bone just below the superior iliac spine to the median line at the tip of the coccyx and then along the râphe almost to the anus. Through this skin incision the sacro-sciatic ligament (lesser and greater) are divided and the soft parts below the coccyx. Then the soft parts are separated from the anterior surface of the sacrum till the anterior branches of the nerves are clearly visible. Then, as usual below the third sacral foramen and about two finger breadths above the sacro-coccygeal articulation a transverse incision is made from left to right, and through this the sacrum is divided horizontally with chisel and mallet. Injury to the right sacral nerves is avoided as they leave the foramina. At the completion of this division of the sacrum the triangular osteo-plastic flap thus formed can be folded over to the right. After the resection of the rectum and its union by suture, the cavity is loosely filled with iodoform gauze and the flap replaced. It is not sutured in place, but the incision of the soft parts is closed except below where the gauze is brought out. In his case, Rydygier left the entire wound open. The flap gradually sank back into place, in a satisfactory manner. By this method, Rydygier claims that there is no danger of necrosis of the flap. That the drainage is as satisfactory as by the usual method. That the resection is done as easily as the usual Kraske operation. The disadvantages of the Levy method are that the hæmorrhoidal nerves are cut and the sphincter paralyzed; that the section of the gluteal muscles results in profuse bleeding, and that the replaced flap impedes drainage. The Heineke-Kocher method is difficult to perform, and drainage is not good. The Hegar method is liable to cause necrosis. According to Rydygier, the incision wound is similar to the Hochenegg-Wölfer cut with the transverse addition. Drainage is favorable. The coccyx is not excised. Hæmorrhage is diminished, since the soft parts are not separated from the bone.

TENOTOMY BY THE OLD METHOD.

Mr. Treves[41] appeals for a return to the operation of tenotomy by the open method, and states that it is a good rule in surgery that the surgeon's blade should reach no farther than his eye can follow it; that every cut should be made with the utmost precision, and that the scalpel should be free from all speculative movements. He states that in dividing the tendon-Achilles he still employs the subcutaneous method, not because the subcutaneous method is safer, but because the tendon can be quite as well severed through a small incision as through a large; but wherever the tendon is deeply situated as in wry neck, or in severing the tendons in the popliteal space, he considers that an open incision is much safer.

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[29] Transactions of the Twenty-first German Surgical Congress, 1892.
[30] Arch. f. Klin. Chir., 1892, xliii, p. 13.
[31] Boston Medical and Surgical Journal, 1891, vol. cxxv, p. 161.
[32] Wien. Med. Woch., [illegible], xxxviii, 461.
[33] Boston Medical and Surgical Journal, 1891, vol. cxxiv, p. 155.
[34] Pathology and Treatment of Neuralgia of the Fifth Pair, Ibid, 1891, vol. cxxv, p. [illegible].
[35] Centbl. f. Chir., 1893, vol. xx, p. 1.
[36] Berl. Klin. Woch., 1892, No. 47.
[37] München med. Woch., 1888, No. 37.
[38] Deutsch. Zeitsch. f. Chir., xxxii, Hf. 1-2.
[39] Centbl. f. Chir., 1889, No. 13.
[40] Inaugural Dissert., Frieburg, ix B., 1889.
[41] American Journal of the Medical Sciences, January, 1893, p. 15.

TREATMENT OF COMPOUND FRACTURES.

In an interesting article, Treves [42] gives an account of his method of treating these cases, and appends tables. As soon as possible the protruding bone is replaced, the loose bone is removed, the parts are cleansed with the greatest care, and adjusted and covered with lint wet with carbolic lotion. He retains the fractures in position by padded wooden splints, and uses webbing and buckles to keep them in position. The limb is kept throughout in the open air. The wound is kept covered by iodoform or creolin.

A NEW METHOD OF TREATING OBLIQUE FRACTURES OF THE FEMUR WITHOUT SHORTENING.

Mr. Keatley [43] has recently presented to the Medical Society of London a method of operating to prevent shortening and other forms of mal-union after fracture. It consists in the insertion of two pins of steel thickly plated with silver; one into each fragment of the bone, but not too near the fracture. Each pin has an arm at right angles to it. These two arms lying outside the skin are lashed together with silver-wire after the fracture has been accurately adjusted. The bones are perforated for the pins by Mr. Keatley's patella bradawl, with a blade three and a half inches long.

Two cases were described, and one patient was shown. Both had sustained a fracture of the femur; the pins had been left *in situ* for six weeks, and there had been no pain or rise of temperature in either case. The operation is not to be resorted to until ten days or a fortnight after the fracture. Antiseptic precautions should be used, and the operation simply consists of two skin punctures and the use of two or three simple instruments. The method was advocated by Mr. Keatley only for special cases.

ANTISEPTIC DRESSINGS.

Professor Travel,[44] of Bernhas, published an interesting article in which he describes his investigations as to whether absolute sterility is necessary in perfect wound-healing. It would require too much space to describe his work in detail; but his conclusions are that:

(1) When wounds have healed under antiseptic dressing, bacteria are found in about two-thirds of the cases.

(2) In a majority of cases there are only harmless epidermis cocci, which, as a rule, do not interfere with perfect healing.

(3) If a staphylococcus is found there, a disturbance can be predicted with considerable certainty.

(4) The presence of the staphylococcus albus is only exceptionally connected with infection of the wound.

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To Prevent the Exhibition of Freaks. — There is a bill before the legislature of Pennsylvania to forbid the exhibition of monstrosities at the dime museums.

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Reports of Societies.

BOSTON MEDICO-PSYCHOLOGICAL ASSOCIATION.

H. C. BALDWIN, M.D., SECRETARY.

MEETING of March 16, 1893.

DR. C. L. DANA, of New York, read a paper on

THE APPLICATION OF THE DOCTRINES OF MODERN PATHOLOGY TO THE ORIGIN OF NERVOUS DISEASES.[1]

DR. J. J. PUTNAM thought that more attention was necessary to the classification and causes of nervous diseases. Patient work in these chronic cases of nervous disease leads to a belief that there is more hope for them. Nothing is more striking than in a case of myxœdema where a patient, who is a prematurely shrivelled old woman, becomes under treatment a slender young girl with a new growth of hair where before she was bald. Cases of dystrophy and locomotor ataxia do improve in some instances under treatment. He had been induced to try animal extracts through the enthusiasm of a friend who returned from Paris much improved by such treatment. His own results had not been brilliant, but all the patients felt better under the treatment, and wished to continue it. He spoke of a case of Basedow's disease in a young woman where operative measures were tried. During the operation, which was not serious, a large quantity of secretion was poured out into the wound. For a week the pulse and temperature were very high and the patient was enormously prostrated, and he thought the extraordinary symptoms which appeared in this case following operation, were due to this secretion.

DR. WEBBER said that he was much interested in this paper, which was unusual. He thought that poisons were produced in the intestines where there was disturbance in metamorphosis of the system, and where the secretions were retained.

In reply to his question — whether the extracts were given by mouth or by injection —

DR. DANA said that he had given the extract of thyroid by mouth and by injection, but he had not given other extracts.

DR. PUTNAM said that his patient had taken thyroid by mouth since January.

DR. KNAPP thought that Dr. Dana had taken a step in advance in claiming for a class of diseases that which had been admitted in a few diseases. For example, tabes dorsalis was admitted to be due to the toxine, syphilis. It was broadening to extend these views and open up a new field.

DR. DANA said, in conclusion, that by toxine he meant a poison, something which irritates or destroys. It might be of bacterial growth or the result of imperfect metabolism.

He thought the sensational reports and newspaper notoriety in connection with these animal extracts had been unfortunate, for the animal extract might contain as much as another extract — the extract of a bean for instance. He felt that those who experimented with animal extracts would find some interesting psychological effects. In his experience ordinary improvement with placebos is immediate and of short duration. With animal extracts the improvement had been slow and the effects more permanent.

DR. S. G. WEBBER reported

ONE HUNDRED AND SIXTY CASES OF EPILEPSY.[2]

DR. G. L. WALTON was pleased to see that direct heredity did not play a part in causing epilepsy, which coincided with his view. He thought that Dr. Webber classed some cases, such as convulsions from teething, from Bright's disease and pregnancy, with epilepsy, which were not probably epilepsy. He thought that 24 cases out of 160, due to trauma, too high a proportion. The medico-legal aspect in epileptic mania was interesting. He thought that a certificate should not be given unless the patient had been seen in the attack. He cited the case of a patient who had taken bromides continuously for twenty-seven years and had had no disturbance of intellect. He was impressed with the belief that patients who develop the disease late in life were not usually affected intellectually.

DR. AYER cited the case of a patient seen in 1889, with full attacks of epilepsy occurring several times daily, who had remissions under treatment, but recurrence of attacks when treatment was omitted. A boy of eleven, with full attacks of epilepsy, which had lasted over a year, entirely recovered under treatment, and has been well for seven years.

DR. PUTNAM thought that there was an interesting relation between migraine and epilepsy, as in certain cases when epilepsy occurred, migraine ceased. The relation of epilepsy to trauma was very important. In army records he noticed that attacks of epilepsy came on with scalp wounds and bodily injury and even from fright, as in the case of a soldier confronted with a gun where the trigger was pulled without discharge. In these cases there was no neuropathic taint. Here the brain suffers from concussion; that is, from a strong physiological effect as from the actual injury of the brain at a localized point. In epilepsy changes occur in the neuroglia which are analogous to injury. He spoke of four autopsies on patients who had well-marked localized epilepsy. In none of these cases was any lesion found. In the case of a child with well-marked localized spasm of the hand and hemiplegia, the autopsy showed only œdema, although tubercles were found in the cerebellum. He thought these localizations were often in the most irritable parts of the brain and served as outlets for neuropathic tendencies. Attacks beginning in this way usually continued. He thought that sensory feelings in the ulnar region are equally common with twitching of the thumb and forefinger. He spoke of two cases of pregnancy where a condition of localized paresis and epilepsy came on, as if there were a definite lesion causing these localized attacks which were an outlet for diffuse disease. In regard to treatment he thought that borax was of notable value. He used the bromides in large doses for three days and then omitted the dose for three or four days, as it takes several days for the bromides to be eliminated.

DR. BULLARD thought that localized symptoms were common in diffuse disease. The etiology was important as regards treatment and prophylaxis.

DR. WEBBER had found no hereditary syphilitic cases. He thought that the prognosis was unfavorable as regards recovery and that the chances for marked improvement diminished when the attacks began in youth.

DR. FERNALD said he had fifty epileptics in the

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[1] See page 486 of the Journal.

[2] See page 491 of the Journal.

School for Feeble-Minded. Some were admitted as epileptics, and some had acquired epilepsy later. Female patients usually developed epilepsy in puberty. As the patients grew older the attacks were less frequent. He thought these patients bore bromides rather badly.

Dr. Knapp said that his experience was similar to Dr. Walton's regarding the part played by heredity in epilepsy. Cases of direct inheritance were very few. He thought that trauma was less of a factor in causing epilepsy than appeared in Dr. Webber's cases. Localized spasm was of no diagnostic value. It is very common in paresis, hysterical epilepsy, uræmic convulsions and focal disease elsewhere than in motor regions.

Dr. Folsom thought that the cure of epilepsy was rare and he disagreed with the optimism of Gowers. He found in a large proportion of cases the convulsions had been going on for three years before suitable treatment was begun. After the epileptic habit has been established it is difficult to eradicate it. He thought epilepsy was by no means so incurable a disease if it could be treated early. He never saw a case cured by bromide though the convulsions may be greatly diminished and intermit for a year or two. In feeble-minded patients bromides do more harm than good. In three cases he had seen benefit from borax. One patient had taken thirty grains twice daily for ten years. He had only seen one case derive benefit from trephining and in that case nothing was found. He thought the limit of tolerance of bromide for any length of time was considerably less than one hundred grains daily. He thought bromide of strontium did not cause eruption on the skin and was less irritating to the stomach.

Dr. Platt, of Baltimore, spoke of the case of a man who had taken eighty grains of bromide for nocturnal attacks of epilepsy for a period of forty years. There had been no trouble from the medicine and the intellect was not affected by the attacks which were never less than two a year. The patient was a Quaker and attributed his attacks to over-eating.

Dr. Stedman said that six hundred remedies for epilepsy had been piled up and only one was of any practical use and that one was bromide. He thought that epileptics should be treated together systematically with medical oversight as to diet.

Dr. Webber thought that one out of thirteen recovered exclusive of syphilitic cases.

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Recent Literature.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D. Philadelphia: Lea Bros. & Co. 1892.

So many carelessly compiled dermatological handbooks, of the ill-disguised "pot-boiler" order, have been put upon the market of late, that it is a great pleasure to be able to endorse Dr. Jackson's little book, as an article of an entirely different stamp. Intended to serve as a reference book for the general practitioner, "no attempt has been made to discuss debatable questions," and "hence pathology and etiology do not receive as full consideration as symptomatology, diagnosis and treatment." The alphabetical arrangement of diseases, so universal now in books of this class, has been followed by Dr. Jackson, and he has inserted so many synonyms and titles from foreign languages, that the book may be turned to even by the specialist in skin diseases, as a convenient dictionary of dermatological nomenclature. After a short and condensed account of the anatomy and physiology of the skin, the author presents a few notes of common and practical importance on diagnosis and therapeutics, which are followed by his well known and graphic dermatological "Don'ts," which made their first appearance in the *Medical Record* in 1888.

This constitutes the short first part, while Part II treats in alphabetical order of the diseases of the skin and their management. An innovation is the adoption of Dr. F. P. Foster's system of pronunciation, by means of which the proper pronunciation of all the more important diseases from Abscess to Zoster is indicated. The subject matter has been compiled with most praiseworthy care, and very few errors are detected on a first reading. We confess to some surprise at finding Tinea Versicolor, or Pityriasis Versicolor as it is also called, described under the heading of Chromophytosis. However appropriate the latter name may be, it has not as yet received sufficient recognition to warrant its adoption in a practical, condensed treatise like this. The chapters on the hair are well written and embody the results of the author's considerable experience in this subject. The treatment is also carefully compiled and accurate. We must again protest against the practice of inserting formulæ for prescriptions, in an appendix, as tending to encourage the loose employment of drugs, without regard to the individual condition.

This book seems to us the best of its class that has yet appeared. It contains much valuable information; and the illustrations include many fine half-tones.

A Manual of Operative Surgery. By Frederick Treves, F.R.C.S., Surgeon to and Lecturer on Anatomy at the London Hospital; and Member of the Board of Examiners of the Royal College of Surgeons. Two Volumes, 1550 pages, 442 illustrations. Philadelphia: Lea Brothers & Co.

This is one of the most satisfactory works which has been placed at the disposal of the surgeon, not only as regards the work of its author, but also the publisher. Its character is best designated by quoting from its preface, in which Mr. Treves states: "The present work concerns itself solely with the practical aspects of treatment by operation, with the technical details of operative surgery." . . . "With the indications for operations I have not dealt, nor have I entered into the subtle questions, the anxious reasonings, the spectral doubts which lie without the operating theatre. For the selection of particular methods of operating I hold myself answerable. I have selected those as have appeared to me best. In each section I have included details as to the preparation of the patient and the after-treatment of the case."

This accurately describes the book. In writing a review, one's first impulse is to give an extended description of this valuable work; but it contains so much that excites interest through its value and importance, and admiration for its arrangement and intelligent presentation that space is wanting for such a detailed account; and we would say to those interested in this subject, without hesitation, Buy this work and read it carefully; and when you have mastered its contents, you will treasure it as your most valuable aid to this branch of your work.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 18, 1893.

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SECONDARY FOCI OF THE DIPHTHERIA BACILLUS IN INTERNAL ORGANS.

UNTIL recently it was supposed that the diphtheria bacillus remained at the point at which it was originally deposited, invading neighboring tissues, but not the general organism. Frosch, however, in a series of studies upon the cadavers of individuals dying from diphtheria, found the bacilli in ten out of fifteen cases in the internal organs — that is, in the brain, lungs, liver, spleen, kidneys, cervical and bronchial glands, in the blood, the pericardial and pleural fluids. They were found least frequently in the spleen, but always in the bronchial and cervical lymph glands.

In the April number of the Johns Hopkins *Bulletin*, Drs. Abbott and Ghriskey furnish a contribution to the pathology of experimental diphtheria, with special reference to the appearance of secondary foci in the internal organs. Their experiments were performed upon guinea-pigs, and the cultures employed were but a few generations removed from undoubted cases of primary diphtheria. Inoculating guinea-pigs with either bouillon cultures or suspensions of the diphtheria bacilli in physiological salt solution, by direct injections into the testicles, they subsequently found the bacilli in the foci of leucocytes in the omentum. There was no evidence to show that the migration occurs through the vascular system, but these observers conclude that it is through the lymphatics, and largely through the aid of the wandering phagocytic cells, that the bacilli appear as secondary depositions in the experimental forms of the disease.

In the same number of the *Bulletin*, Dr. Howard reports a case of acute ulcerative endocarditis due to the bacillus diphtheriæ. The bacillus found was morphologically and by culture methods indistinguishable from the bacillus of diphtheria, it was, however, not pathogenic when injected into animals.

Dr. Flexner also reports a case of diphtheria with broncho-pneumonia, in which he found isolated diphtheria bacilli, accompanied by much more numerous micrococci, in the broncho-pneumonic areas.

Dr. Howard's case, Welsh points out, is unique, and if the bacillus found is the genuine bacillus diphtheriæ, as previous observations have shown to be possible, although devoid of pathogenic properties, is of especial interest.

◆

THE QUESTION OF EXPERT TESTIMONY.

THE conflict of medical opinion in two recent murder trials has led some of the newspapers to criticise severely the present methods of obtaining expert medical testimony.

It is evident that our system of criminal jurisprudence is not calculated to obtain testimony of a perfectly unbiassed nature. The medical witness is employed by plaintiff or defendant to find evidence to help a particular side of the case, and the testimony is directed by a form of questioning designed to serve the purpose of the lawyers; the witness is frequently stimulated to give sympathetic testimony, if not by motives of friendship, at least by a large pecuniary consideration.

It might be expected that physicians competent to give an expert opinion, would be sufficiently high-minded, honorable and conscientious to have but one predominant motive, to tell the truth. This is undoubtedly the case with multitudes in the medical profession who value their reputation for honesty and who love truth above all other things. Practically, however, it has been found that it is not easy to avoid being biassed, and the records of criminal courts show that the medical expert is too often a pliant tool in the hands of the lawyer whose leading motive is not to elicit the truth but to suppress it. There are "contradictions and efforts to break the force of evidence by cross-examination till the jury is left in a state of confusion of mind, in which they have practically to decide which of the doctors are the ablest and most learned in their profession, in order to determine the weight of their testimony."

The remedy that expert witnesses should be employed by the State to assist the Court to enlighten the jury, is again suggested after the experience of the two trials to which we refer. Some method ought to be devised for making this sort of evidence serve its legitimate purpose.

It may at first thought appear that the appointment of a board of medical experts by the Governor and Council, to serve perpetually or during their pleasure, would remedy the evils complained of, but it must be remembered that this measure contemplates the creation of new political offices to be filled by men of the right politics, and there might in many instances be reason for differences of opinion as to the competence of the favored ones on the board, and grounds for complaint that unbiassed testimony was not even then always rendered.

Again, in cases involving the life of the defendant, there would be strong pressure made on the Court to allow the introduction of medical testimony by experts whom the defence might especially desire, and who might not belong to the board, and demands made on the judge that such experts might be heard, would doubtless, generally be granted.

◆

THE MICROBE OF TYPHUS.

"If" says Charles Talamon in a recent number of *La Médecine Moderne* "we do not know the specific microbe of typhus fever, it is not because there are not a sufficient number of candidates for the title."

Just now we may reckon five:

(1) The streptobacillus of Hlava, the first in date, 1888; in the form of short rods, double or in chains.

(2) The mobile grain of barley-shaped bacterium of Babes.

(3) The spirillum of Lewascherd, found in the blood, in the form of roundish corpuscles, refractive, and furnished with fine mobile prolongations.

(4) The peculiar multiform micro-organism of Calmettes.

(5) The diplococcus exanthematicus of Dubiet and Bruhl, the most recent discovery, found in the blood, the bronchi, the lungs, under the form of a little diplococcus easily cultivated in all media.

Talamon remarks that each one of the discoverers has always found his microbe in all the cases which he has examined, but he has never found those of his predecessors; that the cultures have always succeeded more or less readily and in media more or less varied; that, lastly, the hares and guinea-pigs inoculated have always succumbed, save only the hares of Hlava, who has only succeeded in killing two hogs with his streptococcus.

All the candidates seem to possess about equal merit; and to which shall the honor be awarded.

◆

A PENNSYLVANIA BILL TO REGULATE THE PRACTICE OF MEDICINE.

A medical bill, which might be termed appropriately a bill to perpetuate sects in medical practice, is now before the Pennsylvania Legislature, it is said, with good chance of becoming a law, inasmuch as the Governor of the State is understood to be a believer in sectarian medicine. The provisions of this proposed law have already been mentioned. It may be stated briefly that the act will create three boards of medical examiners, to be known as the Homœopathic, Eclectic and the Allopathic Boards, which, however (and this seems to be the only redeeming feature of the bill), are subject to the control of a permanent Medical Council to consist of the Lieutenant-Governor of the State, the Attorney-General, the Superintendent of Public Instruction, the Secretary of Internal Affairs, the President of the State Board of Health, and the Presidents of the three sectarian Boards of Examiners.

If this bill shall become a law, then all regular medical societies and their members will have the epithet of Allopathic affixed to them, whether they desire it or not, and before the courts and the community every regular physician will be a sectarian; and, in the future, no one can enter the practice of medicine in Pennsylvania unless he acknowledges himself to belong to one of the three designated "schools" of medicine.

This is another illustration of the opinion that the less attempt to regulate medical practice there is, the better it is for scientific medicine. In the happy time when the public is sufficiently educated to distinguish between the educated physician and the ignorant charlatan, no law will be required for the protection either of the profession or the community. The regulation of medical practice belongs to the police duties of the State, and is in the hands of the legally constituted authorities of the commonwealth, who are presumed to be competent to originate any legislation that may be needed. In case reforms are thought to be necessary, the suggestion should properly come through the usual channels. In any event, it seems clear that physicians labor under disadvantages in advocating the regulation of practice, for disinterestedness is such a rare virtue that some hidden motive is always suspected. Moreover, irregulars and charlatans have friends in the legislative assemblies, who are able to so modify the measures proposed that often, when they are finally passed, their own authors scarcely recognize them; and if the relative position of the irregular practitioner and the scientific physician are more or less altered, it is, as the rule, in favor of the former. Dr. Rush was of the opinion that medical science should be free from restrictions, leaving the courts open for the punishment of those who commit malpractice or extort money under false pretences.

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MEDICAL NOTES.

The International Medical Congress. — There is a rumor that on account of the sanitary, or perhaps rather unsanitary, condition of Europe, it may be decided to postpone the coming International Medical Congress to be held in Rome this year.

A Novel Drunk Law. — A bill is being considered by the legislature of Michigan providing that in cases known as simple drunks the prisoner may either pay a fine or, if he chooses, may give a bond instead that he will go to a reputable institution for the cure of the liquor habit. If he cannot afford the expense of treatment, the county is to be called upon to meet it.

Three and Four Years' Courses. — The West shows a praiseworthy desire to have the best of everything, and as they feel that a four years' medical course is better than one of three years, they mean to have it. But in order not to delay the bright young student an ingenious plan is devised by which time is hurried up a little. How this may be done is partially explained in the following clipping from an editorial in the *Journal of the American Medical Association:*

"A system has been adopted in one of the medical schools of Chicago, by which the faculty gives the regular graded course of a major, beginning in September and ending in March, and a minor beginning in March and ending in June. Thus the student receives one and one-half years' instruction within twelve months. The curriculum of the college is arranged as a four years' graded course, by the system of majors and minors the classes are so subdivided that the student is enabled to complete the whole course and to take his degree at the end of three years. Within that time he has taken three major courses of six months each, and two minor courses of three months each, which together equal the fourth major course. The system is a good one, saves time and money to the ambitious and diligent student, and makes of the medical professor a professional teacher."

When is a year not a year?

When it gets into a medical school.

How to Deal with Lotion Venders. — The following clipping from the *British Medical Journal* shows the method of dealing with the complexion specialist in Berlin; there is also reported in another part of the same number a case of mercurial periostitis of the jaw, attributed by the writer of the paper to the use of the lotion referred to in the clipping, which was as follows: Some time ago a complexion specialist started consulting-rooms in the fashionable quarter of Berlin, and, of course, she advertised, and gave a lecture to which ladies were invited. The following advertisement was then issued by the police:

> Notice.
>
> As a cure against the most varied skin diseases a Mrs. Anna Ruppert recommends her skin tonic in the daily newspapers. This secret medicine consists of a solution of corrosive sublimate in water, with the addition of some glycerine, and it is slightly perfumed. It is sold in bottles containing about six ounces, for the sum of eleven shillings, while the real value of the contents of each bottle is less than three farthings. The above advertisement is hereby given in order to warn the public.
>
> Der Polizei, *Prasident*.

Much as the complexion specialist loves notoriety, the form in which it came to her in Berlin was a trifle less pleasing than usual.

NEW ENGLAND.

Exhibit of the Boston City Hospital. — The exhibit (in part) to be made at the Columbian Exposition by the hospital may be seen there at any time previous to its shipment.

The Mary Hitchcock Memorial Hospital was formally dedicated on May 3d, in Hanover, N. H. The hospital is well and conveniently built and equipped, and will be used for instruction by the Dartmouth Medical College.

NEW YORK.

The Presbyterian Hospital. — On May 8th the Board of Managers of the Presbyterian Hospital gave a reception to signalize the opening of the new operating pavilion of the hospital. The general hospital was also open for inspection at the same time. The new pavilion is only equalled in its plan of construction and appointments by the Parker Syms Operating Theatre recently opened at the Roosevelt Hospital. On the first floor are two operating rooms, one for private and one for septic cases. On this floor are also a small reception room and the recovery rooms for patients who have undergone operations. The second floor is mainly taken up by the large amphitheatre for operations in the presence of students and medical visitors, and connecting with this are the etherizing, microscope, instrument and sterilizing rooms. The floors are composed of mosaic, and the lower portion of the walls is lined with marble while the upper portion is covered with enamel. The gallery and the seats in the amphitheatre are also of marble. The building is abundantly lighted by large windows and a central skylight over the amphitheatre, and the plumbing arrangements are as perfect as it was possible to make them, while each operating room is furnished with a separate set of instruments and surgical appliances.

Disinfecting Apparatus. — The Board of Health has received and placed in position at the sanitary station at the foot of East 16th street a portable steam disinfecting apparatus similar to that which is said to have been so efficient at Hamburg during the cholera epidemic last season.

Malpractice. — At a meeting of the Society of Medical Jurisprudence held May 8th, Dr. E. C. Spitzka read a paper on "Recent Forensic Malpractice." He spoke of the great difficulty of arriving at a just verdict in court trials by the present system of expert testimony, and stated that illegitimate means were often used to obtain a certain result. In this connection he referred to the recent Buchanan trial, where, he said, the prosecution was obliged to withdraw one count of the indictment, and only secured a conviction by the prisoner taking the witness stand and showing himself to be an unclean adventurer. According to the present system of experts, he maintained, chicanery is the first qualification, and ability and truth have no place at all. A mediocre lawyer could badger and worry an eminent medical expert on the witness stand, and so lower the grade of medical experts by making the business distasteful to men of the highest distinction. He advised that a board of experts should be appointed to present all the expert testimony at court trials, and that great care should be observed that such appointments should be kept entirely free from the taint of political influence.

Small Pox. — The North German Lloyd steamship *Lahn*, which arrived from Bremen May 11th, was found to have three cases of small-pox among her 697 steerage passengers. Health Officer Jenkins decided to hold the steamer at quarantine, and the three patients were at once transferred to the Reception Hospital. As a measure of safety 340 of the steerage passengers were sent to Hoffman Island for observation, but as there were no indications of sickness among the first and second cabin passengers they were landed by tugs, after their baggage and clothing had been fumigated.

Yellow Fever. — On the same day the British steamship *Etherly* arrived from Montevideo, and it was found that during her voyage to New York three of her officers had died of yellow fever. They had contracted the disease at Santos, and when transferred to the hospital at Rio Janeiro lived only a few days. As there had been no signs of yellow fever after the *Etherly* left Rio, she was fumigated and released.

◆

Miscellany.

A BACILLUS OF OZÆNA.

Abel describes a bacillus which he believes to be pathogenic of ozæna.[1] It is found with many other organisms in the muco-pus beneath the scabs, and is not found in other varieties of nasal secretion. It grows upon the ordinary culture media, with the production of a peculiar odor, like that of fermenting malt. It does not produce spores, but lives long in a dry state. The author was unable to produce ozæna in animals. He believes that this specific organism does not directly cause the well-known odor, but that this is due to various organisms always found associated with it, capable of decomposing albuminous substances and that the organism itself merely excites a peculiar secretion in the nasal mucous membrane, which differs from the ordinary secretion of chronic inflammation in being capable of putrefaction.

◆

THE COY MURDER.

The murder for which William Coy was hung in the western part of Massachusetts two months ago, presents a few points of medico-legal interest which are described, in a paper by the medical examiner, Dr. Paddock, of Pittsfield.[2] The victim, Whalen, mysteriously disappeared on August 29th. On October 13th a farmer's dog was seen scratching in the woods, and appeared so much interested that the farmer helped him, and discovered the body of Whalen, naked, with the left side of the skull fractured and with both legs cut off about three inches above the knees, in order apparently to occupy less space. A piece of bone nearly three inches long was completely separated from the skull, having been driven through the dura into the brain. In the throat there was a gaping wound which extended entirely across the neck down to the spinal column. No other wounds were discovered. The manner of death, judging from the body, appeared to be as follows: that the man was in a recumbent position, lying upon his right side, when he received a powerful blow from some blunt weapon, like the head of an axe. Following this first blow, a second blow with the edge of the axe might have made the wound in the neck. Coy was arrested and confessed to the killing, but pleaded that it was done in self-defence. The whole trial tends to show that the medical part of the inquest was distinctly better than the legal part. The indictment sounds as if it had descended from the Middle Ages. That appears to be rather an advantage in the eyes of the legal profession; but in this case it was so imperfect that at one time it seemed likely that a new trial would have to be held. The indictment read as follows:

"And that he the said William Coy then and there with a certain axe which he the said William Coy in both his hands then and there had and held, him the said John Whalen in and upon the head of him the said Whalen on the left temple bone thereof upon the left side of said head, then and there at Washington aforesaid feloniously, wilfully and of his malice aforethought did strike giving unto him the said Whalen then and there with the axe aforesaid by the stroke aforesaid in the manner aforesaid in and upon the head of him the said Whalen on the left temple bone of his said head upon the left side of his said head one mortal wound of the length of four inches, of the breadth of one inch and of the depth of one-half inch, of which said mortal wound the said Whalen then and there instantly died."

Translated into modern English this would mean that the wound on the head caused instant death, and no reference whatever is made of the wound in the throat. But although the wound in the head was in all probability a mortal wound it did not necessarily, or even probably, cause instant death, and that for this reason the second wound was given. The prisoner's description of the fray was proved to be incompatible with the position of the wounds, and as the judges finally overruled the motion to quash the above indictment, the prisoner was sentenced and hung.

◆

THE BAGGAGE OF PASSENGERS.

The following extracts are from a circular recently issued to consular and medical officers by the Treasury Department under the new law:

> All baggage of steerage passengers destined for the United States shall be labelled. If the baggage has been inspected and passed, the label shall be a *red* label, bearing the name of the port, the steamship on which the baggage is to be carried, the word *inspected* in large type, etc. All baggage that has been *disinfected* shall be pasted with a *yellow* label, upon which shall be printed the word *disinfected* in large type, etc.

It is further ordered that each immigrant or steerage passenger shall be furnished with an inspection card on which shall be inscribed or stamped the port of departure, name of the steamship, date of departure, name of immigrant or steerage passenger and last residence, and the seal or stamp of the United States consulate or the detailed medical officer. This card is to be retained by the immigrant until he reaches his point of destination in the United States, and is for the purpose of giving information to the maritime quarantine officers of the United States and the health officers of the several States through whose boundaries the immigrant must pass, and will greatly facilitate his transportation. The card will also contain blank spaces for stamping at the local quarantines of the United States and at the immigration stations. On the same card are blank spaces to be filled in by the ship's surgeon or agent, when it is desired by the steamship company to utilize this card for compliance with article 13 of the Immigration Regulations; also a column indicating the inspection by the ship's surgeon of each immigrant during the voyage, as demanded by the local quarantine officer at the port of arrival.

On the reverse of the card is a certificate of vaccination, to be filled out when the immigrant has been vaccinated; also instructions, in several languages, to the immigrant to retain the card until he reaches his destination in the United States in order to avoid detention.

This card is to be issued by the consular or medical officer to each steerage passenger, to every member of a family as well as to the head thereof. If not used by the steamship in complying with article 13 of the Immigration Regulations, April 25, 1893, a separate card must be furnished by the vessel, in compliance with the law.

Cabin passengers from cholera-infected ports or places shall be given a special inspection card, on which shall be printed the port of departure, name of passenger, name of ship, date of departure, and an indicated space for the seal or stamp of the consular or medical officer.

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[1] Centralbl. f. Bakt., [illegible], No. [illegible].

[2] Transactions of the Massachusetts Medico-Legal Society.

The baggage of said cabin passengers shall be properly labelled.

◆

TROPICAL SUPPURATIVE HEPATITIS.

Surgeon Patrick Hehir, of the British Indian Service, formulates, in the *Indian Medical Gazette*, the following pathological classification of cases of hepatic abscess:

(1) By far the most common are cases occurring consecutive to dysentery, and arising from a secondary infective process affecting the liver through the portal circulation. These cases arise from:

(*a*) The action of septic organisms, such as the streptococci, staphylococci, micrococci; or

(*b*) The irritation of the products of such septic organisms — ptomaines, conveyed to the liver from the ulcerated bowels and acting primarily on the liver, which plays the part of a filter upon the blood conveyed to it by the portal vein, or to the irritation of the amœba coli or cercomonas intestinalis, or both combined. Cases due to malarial poisoning, the blocking up of the radicles of the portal vein by the plasmodia of Laveran, these organisms acting as irritants and lighting up the suppurative process.

(2) Acute sthenic parenchymatous inflammation resulting from climatic causes, overcrowding, alcoholic excesses, excessive heat, or chill, acting upon a liver already in a partial state of disorganization.

(3) Idiopathic cases in which no assignable cause can be traced.

◆

THERAPEUTIC NOTE.

The Thymus, Thyroid, Pancreas and the Sweetbread. — In answer to correspondents in connection with the present use of the thyroid gland in myxœdema and the ingestion of fresh pancreas as a treatment for diabetics, the *British Medical Journal* offers the following statements in regard to the above organs: "It is not sufficient to recommend a patient to obtain a 'sweetbread.' The true sweetbread, regarded by *gourmets* as a great delicacy, is the thymus gland of the calf. As a rule, this is found only in the fœtus and young calf, under the lower surface of the trachea, 'partly without and partly within the chest, between the layers of the anterior mediastinum.' It is occasionally persistent, but usually disappears within a few months after birth. It is elongated, of a grayish-white color, irregular — that is, lobulated on its surface, and much more resembling a salivary gland and the pancreas than the thyroid. It is commonly known amongst butchers as the 'throatbread,' and rarely found except in animals supplying young veal or lamb. The pancreas is vulgarly termed the 'gutbread' or 'belly sweetbread,' and is the article which would be supplied in the great majority of cases by butchers asked for sweetbread. The thyroid is situated at the upper part of the neck, not at its root, and is not regarded as a favorite article of diet. Though the lobes are closer together than in man, they are spoken of as two, each being named a 'kernel' or 'gland.' As far as we can learn, they are not ordinarily included among the sweetbreads. As compared with the thymus and pancreas the thyroid is very small, regular on the surface, ovoid in shape, reddish-brown in color, situated at the upper part and not at the root of the neck. The thyroid is sometimes confused by butchers with the lymphatic glands of the neck. Its dark color and characteristic shape — convex externally while somewhat concave and flattened where it rests against the trachea — should prevent this mistake. While thymus and pancreas are valued highly, the market value of the thyroid is inconsiderable, and until its association with myxœdema it was rarely asked for."

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DR. GEORGE C. SHATTUCK.

At a meeting of the Boston Society for Medical Improvement, held on May 8, 1893, the following notice of the death of Dr. George C. Shattuck was placed upon the Society's record:

> In taking official notice of the death of Dr. Shattuck, the Boston Society for Medical Improvement desires to express its deep regret at the loss of one of its oldest and most eminent fellows. For many years he took an active part in our deliberations, though of late he has been prevented by delicate health from attending our meetings.
>
> He was an earnest promoter of medical education, and to his disinterested and successful efforts much of the prosperity of the Harvard Medical School is due, especially in the Department of Clinical Medicine, which he may be said to have created, and of which he was the first Professor.
>
> By all who knew him Dr. Shattuck will be remembered for his kindness of heart, his active benevolence, and the charm of his conversation.

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OBITUARY. — CHARLES CARROLL LEE, M.D.

The Medical Profession of New York has been greatly shocked by the death, after a short illness, of Dr. Charles Carroll Lee, the genial and popular President of the County Medical Society, who has been cut off in the height of his usefulness.

Dr. Lee, who was a descendant of the famous old Carroll family, of Maryland, was born in Philadelphia, March 24, 1839. His parents removed to Maryland soon after, and there he received his early education. After graduating from St. Mary's College, Emmittsburgh, he studied medicine in Philadelphia and received the degree of M.D. from the University of Pennsylvania in 1859. In 1861 he received an appointment as assistant surgeon in the United States Army, and he served with distinction throughout the Civil War.

Two years after the close of the war he came to New York, where he has since resided. His talents and his brilliant social qualities soon won him a high position as a general practitioner, and he afterwards devoted himself more especially to the field of gynæcology, in which he won distinguished success. At the Woman's Hospital he was intimately associated with that eminent group of surgeons, Sims, Peaslee, Emmet and Thomas, who have made that institution famous all over the world. At the time of his death he was President of the Medical Society of the County of New York and Professor of Gynæcology at the New York Post-Graduate Medical School and Hospital, and, besides being attending physician to the New York Foundling Asylum, was consulting surgeon to the Woman's Charity, and St. Elizabeth's Hospitals.

Dr. Lee married a daughter of the late Dr. Parrish, of Philadelphia, and his wife and five children survive him. One of his sons, James P. Lee, will long be remembered for his brilliant record in athletics and football at Harvard.

The funeral services were held at Stephen's R. C. Church on May 13th and were attended by an immense number of persons, including the County Medical Society, the New York Academy of Medicine and the Sons of the Revolution.

METEOROLOGICAL RECORD,

For the week ending May 6, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	Weather.* 8.00 A. M.	Weather.* 8.00 P. M.	Rainfall in inches.
S...30	30.14	[illegible]	[illegible]	44	[illegible]	[illegible]	78	N.	S.W.	6	[illegible]	F.	F.	
M.. 1	[illegible]	48	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	[illegible]	[illegible]	13	R.	O.	0.20
T.. 2	[illegible]	42	44	41	[illegible]	[illegible]	[illegible]	N.E.	[illegible]	11	[illegible]	O.	O.	[illegible]
W.. 3	[illegible]	42	43	41	[illegible]	[illegible]	[illegible]	N.E.	N.E.	11	18	R.	R.	[illegible]
T.. 4	[illegible]	46	[illegible]	[illegible]	100	[illegible]	[illegible]	E.	S.W.	[illegible]	17	R.	O.	2.71
F.. 5	[illegible]	[illegible]	58	47	[illegible]	[illegible]	74	W.	W.	18	8	F.	C.	
S.. 6	[illegible]	53	60	46	[illegible]	[illegible]	[illegible]	N.W.	W.	10	11	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 6, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	[illegible]	332	14.74	25.74	2.42	[illegible]	2.09
Chicago	[illegible]	614	251	19.52	21.92	4.00	[illegible]	1.76
Philadelphia	1,092,168	[illegible]	150	10.34	16.28	.88	6.38	2.42
Brooklyn	[illegible]	[illegible]	161	11.22	26.18	.44	3.96	[illegible]
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	469,645	[illegible]	66	10.08	28.98	[illegible]	5.04	1.68
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	[illegible]	—	—	—	—	—	—	—
Cleveland	281,353	[illegible]	—	15.64	11.96	—	6.44	[illegible]
Pittsburg	255,000	101	42	30.69	8.91	11.88	[illegible]	3.96
Milwaukee	[illegible]	—	—	—	—	—	—	—
Washington	230,360	102	31	[illegible]	[illegible]	.98	[illegible]	—
Nashville	87,754	37	9	10.80	13.50	—	2.70	—
Charleston	56,048	32	14	[illegible]	[illegible]	28.17	—	—
Portland	40,000	16	4		[illegible]	—	—	—
Worcester	[illegible]	[illegible]	12	6.99	30.29	2.33	—	—
Lowell	[illegible]	[illegible]	13	[illegible]	[illegible]	—	[illegible]	—
Fall River	82,128	33	12	—	[illegible]	—	—	—
Cambridge	74,644	[illegible]	8	9.09	24.24	—	3.03	—
Lynn	60,809	—	—	—	—	—	—	—
Springfield	47,052	[illegible]	7	7.14	[illegible]	—	[illegible]	3.57
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	[illegible]	[illegible]	6	[illegible]	[illegible]	[illegible]	—	—
Holyoke	[illegible]	13	6	23.07	30.76	[illegible]	7.69	—
Brockton	32,783	7	[illegible]	—	28.56	—	—	—
Salem	31,495	9	3	11.11	22.22	11.11	—	—
Haverhill	30,065	9	4	11.11	—	—	11.11	—
Chelsea	29,479	[illegible]	[illegible]	—	25.00	—	—	—
Malden	[illegible]	[illegible]	[illegible]	13.33	[illegible]	—	—	—
Newton	[illegible]	—	—	—	—	—	—	—
Taunton	[illegible]	[illegible]	2	8.33	16.66	8.33	—	—
Gloucester	26,008	[illegible]	[illegible]	—	16.66	—	—	—
Fitchburg	[illegible]	10	[illegible]	10.00	10.00	—	—	—
Waltham	[illegible]	7	2	—	[illegible]	—	—	—
Quincy	18,669	7	1	14.28	—	—	—	—
Pittsfield	18,294	3	0	—	33.33	—	—	—
Northampton	[illegible]	[illegible]	0	—	—	—	—	—
Everett	14,745	4	[illegible]	—	25.00	—	—	—
Newburyport	14,031	7	2	42.84	[illegible]	—	—	—
Amesbury	13,561	1	0	—	—	—	—	—

Deaths reported 3,470; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 475, acute lung diseases 746, consumption 391, diphtheria and croup 145, diarrhœal diseases 82, scarlet fever 58, typhoid fever 55, cerebro-spinal meningitis 42, measles 35, whooping-cough 32, erysipelas 9, malarial fever 6, small-pox 1.

From typhoid fever Chicago 22, Philadelphia 11, Cleveland 6, Pittsburgh and Washington 5 each, Boston and New York 2 each, Nashville 1. From cerebro-spinal meningitis New York and Chicago 16 each, Brooklyn 5, Philadelphia, Washington, Cambridge, Somerville and Holyoke 1 each. From measles Chicago 11, New York 9, Brooklyn and Pittsburgh 4 each, Philadelphia, Boston, Lowell, Cambridge, Fitchburg, Woburn and Brookline 1 each. From whooping-cough New York 12, Brooklyn 8, Chicago 6, Philadelphia 3, Nashville, Worcester and Lowell 1 each. From erysipelas New York, Chicago, Boston and Cleveland 2 each, Philadelphia 1. From malarial fever Brooklyn 3, Philadelphia 2, Nashville 1. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,[illegible], for the week ending April 22d, the death-rate was 21.4. Deaths reported 4,[illegible]; acute diseases of the respiratory organs (London) 390, measles 157, whooping-cough 112, diphtheria 72, scarlet fever 45, diarrhœa [illegible], fever 23, small-pox (London 9, Birmingham 3, Manchester and Halifax 2 each, Oldham, Burnley, Leeds and Sheffield 1 each) 20.

The death-rates ranged from 12.4 in West Ham to [illegible] in Salford; Birmingham [illegible], Bolton [illegible], Croydon [illegible], Gateshead 22.4, Hull 15.5, Leeds 23.7, London [illegible], Liverpool [illegible], Manchester 25.6, Nottingham 17.5, Sheffield 21.1, Sunderland 17.1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,[illegible], for the week ending April 29th, the death-rate was 19.7. Deaths reported [illegible]; acute diseases of the respiratory organs (London) [illegible], measles 124, whooping-cough 89, diphtheria 67, scarlet fever 55, diarrhœa 37, fever 33, small-pox (London 6, Oldham 4, Salford 3, Halifax 2, West Ham, Burnley, Sheffield and Hull 1 each) 19.

The death-rates ranged from 12.9 in Croydon to [illegible] in Preston; Birmingham 20.4, Bradford 20.9, Leeds 21.8, Leicester [illegible], Liverpool 23.3, London 19.0, Manchester 24.5, Newcastle-on-Tyne 20.4, Nottingham 14.7, Sheffield 21.4, Sunderland [illegible], West Ham 13.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 5, 1893, TO MAY 11, 1893.

A board of officers to consist of **Colonel Charles T. Alexander**, assistant surgeon-general; **Lieut.-Col. George M. Sternberg**, deputy surgeon-general; **Major John Van R. Hoff**, surgeon, is appointed to meet, at the call of the president thereof, at New York City, for the examination of such officers as may be ordered before it, with a view to determining their fitness for promotion.

Captain Curtis E. Price, assistant surgeon, ordered to report in person to the president of the examining board at New York City, for examination for promotion.

Captain Richard W. Johnson, assistant surgeon, relieved from duty at Fort Bowie, Arizona, and ordered to duty at Washington Barracks, D. C.

Captain William J. Wakeman, assistant surgeon, relieved from duty at Fort Bidwell, California, and ordered to Fort Thomas, Kentucky, for duty.

By direction of the Secretary of War, leave of absence for six months on account of sickness, is granted **Captain Robert B. Benham**, assistant surgeon, U. S. A.

Captain Louis Brechemin, assistant surgeon, U. S. A., is relieved from duty at the Presidio of San Francisco, Cal., and ordered to Columbus Barracks, Ohio, for duty.

First-Lieut. Charles Willcox, assistant surgeon, relieved from temporary duty at Angel Island, Cal., and ordered to Presidio of San Francisco, Cal., for duty.

Leave of absence for twenty days, to commence about May 24, 1893, is hereby granted **Major Curtis E. Munn**, surgeon, U. S. A.

Leave of absence for one month, to take effect June 1, 1893, is granted **Captain Walter D. McCaw**, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 13, 1893.

J. Mill Browne, surgeon-general, detached from duty as chief of Bureau Medicine and Surgery, May 10th, and placed on the retired list.

J. Rufus Tryon, medical inspector, detached from the U. S. S. "Chicago" and appointed surgeon-general of the Navy and chief of the Bureau of Medicine and Surgery.

A. A. Hochling, medical inspector; **G. A. Bright**, surgeon, and **George Rochganger**, assistant surgeon, ordered to examination preliminary to promotion.

Wm. Martin, surgeon, ordered to duty under the supervising surgeon-general, Marine-Hospital Service.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING MAY [illegible], 1893.

Bailhache, P. H., surgeon. To report to Superintendent of Immigration for temporary duty. April 24, 1893.

Purviance, George, surgeon. Detailed as chairman, Board of Examiners. May [illegible], 1893.

Gassaway, J. M., surgeon. Granted leave of absence for two days. April [illegible], 1893. Detailed as member, Board of Examiners. May [illegible], 1893.

Stoner, G. W., surgeon. Detailed to represent Service at International Congress of Charities, etc., Chicago, Ill. May 3, 1893.

Irwin, Fairfax, surgeon. To proceed to Naples, Italy, for temporary duty. April 17, 1893.

Carter, H. R., surgeon. Detailed as recorder, Board of Examiners. May [illegible], 1893.

Wheeler, W. A., surgeon. To proceed to Europe as inspector. April 17, 1893.

Banks, C. E., passed assistant surgeon. To proceed to Grosse Isle Quarantine Station, Canada, for duty.

Carrington, P. M., passed assistant surgeon. To proceed to Hamburg, Germany, for duty. April 17, 1893. To proceed to Marseilles, France, for temporary duty. April 28, 1893.

Geddings, H. D., passed assistant surgeon. To inspect Fishermen's Island, Virginia. May 6, 1893.

Stimpson, W. G., assistant surgeon. To proceed to Quebec, Canada, for duty. April 29, 1893.

Stewart, W. J. S., assistant surgeon. To report at Washington, D. C., for duty. April 22, 1893.

Branham, J. W., assistant surgeon. To proceed to New York, N. Y., for duty. April 21, 1893.

Sprague, E. K., assistant surgeon. To proceed to Charleston, S. C., for duty. April 21, 1893.

Prochazka, Emil, assistant surgeon. To proceed to Ellis Island, N. Y., for duty. April 18, 1893.

APPOINTMENTS.

John W. Branheim, of Virginia, commissioned as assistant surgeon, April 19, 1893.

Ezra K. Sprague, of New York, commissioned as assistant surgeon, April 19, 1893.

Emil Prochazka, of Wisconsin, commissioned as assistant surgeon, April 19, 1893.

PROMOTIONS.

Assistant Surgeon J. C. Perry, commissioned as passed assistant surgeon, April 19, 1893.

Assistant Surgeon A. C. Smith, commissioned as passed assistant surgeon, April 19, 1893.

ASSOCIATION OF AMERICAN PHYSICIANS.

Programme of the eighth annual meeting to be held in the Army Medical Museum and Library Building, Washington, D. C., May 30, 31 and June 1, 1893.

Tuesday, May 30th.

(1) President's Address. Alfred L. Loomis, New York. (2) General Business. (3) On the Course and Treatment of Certain Uræmic Symptoms. Beverley Robinson, New York. (4) The Reaction of the Urine with Ether. A. H. Smith, New York. (5) Detection and Significance of Proteids in the Urine. C. W. Purdy, Chicago. (6) Probable Origin and Early Symptoms of Certain Chronic Diseases of the Kidneys. C. S. Bond, Richmond, Ind. (7) A Study of Addison's Disease and of the Adrenals. W. Gilman Thompson, New York. (8) Two Cases of [illegible]. James Tyson, Philadelphia. (9) On a Simple Continued Fever. G. Baumgarten, St. Louis. (10) The Treatment of Typhoid Fever. S. G. Fisk, Denver. (11) Creosote in the Treatment of Tuberculosis. J. T. Whittaker, Cincinnati. (12) The Intestinal Origin of Chlorosis. F. Forchheimer, Cincinnati. (13) Coffee Drinking as a Frequent Cause of Disease. Norman Bridge, Los Angeles. (14) Experimental Observations Concerning the Nature of Chorea. H. C. Wood, Philadelphia.

Wednesday, May 31st.

(15) Discussion on Myxœdema. *Referee*, F. P. Kinnicutt, New York. *Co-Referees*, James J. Putnam, Boston, M. Allen Starr, New York. (16) Report of a Case of Myxœdema. W. Gilman Thompson, New York. (17) Sporadic Cretinism in the United States. William Osler, Baltimore. (18) Some Problems in the Etiology and Pathology of Texas Cattle Fever and their Bearing on the Comparative Study of Protozoan Diseases. Theobald Smith, Washington. (19) The Prophylaxis of Cholera with Especial Reference to Immunization. E. O. Shakespeare, Philadelphia. (20) A New Pathogenic Bacillus. H. C. Ernst, Jamaica Plain. (21) Experiments with the Bacillus Diphtheriæ. A. C. Abbott, Philadelphia. (22) Gonorrhœal Myocarditis. W. T. Councilman, Boston. (23) The Parasitic Nature of Cancer. Heneage Gibbes, Ann Arbor. (24) Acute Follicular Tonsillitis. Starling Loving, Columbus. (25) Sarcoma of the Lung, with Specimen. D. W. Prentiss, Washington.

Annual dinner of the Association at Arlington Hotel, at 8 p. m.

Thursday, June 1st.

(26) The Importance of Uterine Displacements in the Production of Vomiting during the Early Stages of Pregnancy. G. M. Garland, Boston. (27) Uterine Drainage in the Several Forms of Inflammation of the Uterus and its Appendages. William M. Polk, New York. (28) Pulsating Pleural Effusions. James C. Wilson, Philadelphia. (29) Sub-phrenic Abscess, with especial reference to cases which simulate Pneumothorax. A. L. Mason, Boston. (30) Sub-phrenic Abscess. S. J. Meltzer, New York. (31) Two Cases of Diaphragmatic Hernia. James Tyson, Philadelphia. (32) Concluding Business.

MASSACHUSETTS MEDICAL SOCIETY.

CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet for examination of candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, June 8, 1893, at 2 p. m.

Candidates should make personal application to the Secretary and present their medical diploma, or its equivalent, at least three days before the examination.

For further particulars, apply from 2 to 3 p. m., to

James J. Minot, M.D.,
188 Marlborough Street. *Secretary.*

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, May 22, 1893, at 8 o'clock, p. m.

"The Recent Epidemic of Cholera," Dr. R. W. Greenleaf.

"The Bacteriological Diagnosis of Asiatic Cholera; Demonstration of Cultures," Dr. A. K. Stone.

"Quarantine," Dr. H. P. Walcott.

Last meeting of the season.

John T. Bowen, M.D., *Secretary.*

American Laryngological Association. — The fifteenth annual meeting will be held in New York, May 22, 23 and 24, 1893.

The profession are cordially invited to attend.

Morris J. Asch, M.D., *President.*
Chas. H. Knight, *Secretary*, 20 W. 31st St., New York.

The American Association of Obstetricians and Gynecologists will hold its sixth annual meeting in Detroit, June 1, 2 and 3, 1893.

A cordial invitation is extended to the members of the medical profession interested in the work of the Association to attend its several sessions.

Lewis S. McMurtry, M.D., *President.*
W. W. Potter, M.D., *Secretary.*

RECENT DEATHS.

Ely McClellan, M.D., Lieutenant-Colonel and Deputy Surgeon-General of the United States Army and attending surgeon at the headquarters of the Department of Missouri, died in Chicago, May 8th, aged fifty-nine years. He served in the war from the State of Pennsylvania, and in 1866 was appointed captain and assistant surgeon in the army, and in 1876 major and surgeon.

Charles Carroll Lee, M.D., of New York, died May 10th, aged fifty-four years. He served during the war as assistant surgeon in the United States Army. At the time of his death he was consulting surgeon to the Woman's Hospital, the Charity Hospital and St. Elizabeth's, professor of gynecology at the Post-Graduate Hospital and School, and attending physician at the New York Foundling Asylum. He was also president of the New York County Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

Acne Comedo, and Acne Rosacea. By J. Abbott Cantrell, M.D. Reprint. 1893.

Annual Address before the State Board of Health of Pennsylvania. By Samuel G. Dixon, M.D. 1893.

Treasury Department. Laws and Regulations for the Maritime Quarantines of the United States. 1893.

Report of the *Lancet* Special Sanitary Commission of Inquiry Concerning the Water-Supply of Chicago, U. S. A. Reprint. 1893.

Metatarsalgia (Morton's Painful Affection of the Foot), with an Account of Six Cases Cured by Operation. By Thomas S. K. Morton, M.D. Reprint. 1893.

The Structures in the Mesosalpinx: Their Normal and Pathological Anatomy. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S.E., and J. D. Williams, M.D., B.Sc. Reprint. 1893.

Lecture.

LECTURES ON THERAPEUTICS.

II. Strophanthus, Caffeine, Etc.[1]

BY H. C. WOOD, M.D., PHILADELPHIA,
Professor of Therapeutics, University of Pennsylvania.

Next in importance to digitalis in the treatment of chronic cardiac disease is strophanthus. Strophanthus is an arrow poison from Africa. It is a curious fact that nearly all arrow poisons are peripheral poisons. You can see why. Any one who has ever shot a deer knows full well that the ball through the body often will not stop the creature, much less would an arrow, even though poisoned; but when the nerve trunk wilts under the influence of curare it is impossible for the animal to run, so that arrow poisons almost all act directly upon the motor apparatus; and the chief action of strophanthus is as a muscle poison. At first, the general muscles gain in tonicity, contract more readily and powerfully than normal, respond to stimuli that did not move them before; and when the contraction comes, it remains for a little time after the cessation of the stimulus. By and by the muscle begins to contract of itself, as it were; its tonicity goes beyond the normal line; and muscular stiffness comes and lack of power growing ever and ever, until at last the muscle sets itself in the death mask of post-mortem rigidity, and the animal is dead. It has been proved by the experiments of Frazer and others, that strophanthus acts not simply this way on the ordinary striated or voluntary muscles, but affects also the muscle of the heart, the influence of the strophanthus upon the heart being simply a part of its widespread general action. The heart muscle is much more sensitive to the action of strophanthus than are the muscles of voluntary life, and so the heart action comes out under the influence of strophanthus before the muscles of voluntary life feel its power. Hence it is that strophanthus is a valuable remedy. When we come to study the symptoms which are produced by strophanthus, we find they are, first, slowing and strengthening of the pulse; the slowing of the pulse, however, never equalling that produced by digitalis, and the power of the individual beat never coming up like the great tidal wave of digitalis action. Then by and by we have usually gastric distress, if the remedy be taken in toxic doses, and then purging and excessive diuresis; later, the pulse loses its power, becomes feeble, irregular, and then muscular relaxation or stiffness with inability to move develop, and so the animal goes down to death. After death we find that there is gastro-intestinal inflammation, and often very pronounced inflammation of the kidneys. Just here we may note a very distinct difference between the action of strophanthus and the action of digitalis. There is no lesion of the kidney after poisoning from digitalis; and we come, through the anatomical pathway so to speak, face to face with an important clinical fact, namely, that strophanthus has far more action upon the kidneys than has digitalis. It is much more of a diuretic than digitalis. It acts usually as a diuretic upon the healthy man while digitalis usually fails. In Phillips's experiments with the oncometer it was found that strophanthus increased enormously the flow of urine from the kidney without increasing the bulk or size of the kidney, that is, without markedly increasing the amount of blood in the kidney, evidence that the action of strophanthus is directly upon the secreting structure of the kidney.

We have not as complete and thorough knowledge of the heart action of strophanthus as we have of the action of digitalis. We know, however, from the experiments of Frazer and of a number of investigators who have followed him that strophanthus acts upon the cut-out frog's heart as a powerful stimulant, slowing it somewhat, increasing the force of its contractions, and finally producing arrest; and here we have a curious conflict of testimony. Frazer says that the arrest always takes place in systole, while others claim that it takes place in diastole. The probability is that sometimes the arrest takes place in systole and sometimes in diastole. We have no knowledge that there is an inhibitory stimulation under the influence of this drug like that caused by digitalis. What experiments we have, show that the cutting of the vagi does not prevent the slowing of the pulse; and it is even asserted that late in the poisoning the vagi are found paralyzed. Therefore, so far as our present knowledge goes, this drug differs, in the second place, from digitalis in not being a stimulant to the vagi nerves, therefore in not being a trophic stimulant to the heart. It is proved by the experiments of various investigators that after the action of the drug in the mammal, there is a great rise in the arterial pressure. This rise in the arterial pressure, accompanied by slowing of the pulse, persists a length of time, and then the pulse becomes small and feeble and more or less irregular, and the arterial pressure falls to nothing or almost to nothing. The cause of the secondary fall of the pressure has not been thoroughly worked out. There may be with strophanthus imperfect diastole, precisely as we have under the influence of digitalis; but we do not know positively whether this be the case or not.

The nature of the action of this drug upon the vascular system is at present uncertain. Popper states that previous section of the splanchnics does not prevent strophanthus from producing a rise of pressure; if these experiments be accurate, it is improbable that strophanthus strongly affects the vaso-motor centres in the medulla. On the other hand, it seems probable that the muscle-fibres in the walls of the blood-vessels feel the muscle-influence of the drug; but here again we have not positive information.

To sum up this brief and hurried statement, which may not seem clear to you, we note that strophanthus is a drug which acts very quickly and fugaciously as compared with digitalis; that it acts like digitalis directly upon the heart muscle; that it appears to be wanting in the trophic influence of digitalis; that its effects are less permanent than are those of digitalis; that, so far as the vaso-motor system is concerned, our knowledge is so imperfect we cannot say whether the blood-vessels are contracted or not; that strophanthus vastly exceeds digitalis in its diuretic action. The place of strophanthus, therefore, in our category of heart medicines is as an adjuvant and guard relief, so to speak, to digitalis. Digitalis is the thing we stand by; strophanthus is the remedy which we use to relieve digitalis.

And now let me call your attention still more briefly to a third remedy which is of great service in the treatment of chronic cardiac disease. I refer to caffeine. Caffeine sets itself apart, so far as our present purposes are concerned, from digitalis and also from strophanthus in that its cardiac action is only a small part of its widespread action upon the human organism. It is a powerful cerebral stimulant. It seems to be the only known substance which has the power of absolutely increasing human brain work. Opium stimulates the imagination; alcohol lifts a man up for the moment to throw him into confusion and irregularity of action; but caffeine increases his power of reasoning and absolutely adds to his brain-work capacity for the time. Caffeine is a valuable remedy as a respiratory stimulant. It ranks fairly well up among these drugs. We find caffeine has many points of resemblance in its action to strophanthus. It is a muscle poison. It stimulates, alters the contraction rate of the muscle, throws the muscle finally into a condition of death, from life directly into post-mortem rigidity as does strophanthus. Like strophanthus, it is a powerful diuretic, probably even a more powerful diuretic than strophanthus itself, and it is, therefore, a very suitable remedy in the treatment of cardiac dropsies. When we come to study the action of caffeine upon the circulation, we find here again we have much to learn, though the recent experiments of Professor Reichert of the University of Pennsylvania have given us some more settled data than we had. It differs from digitalis in its action on the frog's heart, belongs rather with the class of ammonia and alcohol, since it first stimulates and then depresses. The experiments of several investigators finally have reconciled the very contradictory results and assertions of the earlier investigators and shown that the influence of this drug on the heart muscle varies with the dose. The small dose of caffeine certainly increases the working power of the frog's heart. The large dose of caffeine paralyzes or depresses the heart, so that under the influence of a large dose the frog's heart does not do the work that it does in the normal condition, much less the work that it does when the caffeine is present in small dose. We have had similar discord in regard to the effect of caffeine upon the blood-pressure of the lower animals. The experiments of Reichert finally demonstrate that both in the non-curarized and the curarized mammal caffeine in small dose elevates blood-pressure, but that with a large dose sooner or later the first rise of blood-pressure is followed by a fall, and that, if the doses have been overwhelming from the beginning, there may be a primary fall and no rise of pressure. What is the cause of this rise of pressure? Here again we find ourselves upon uncertain ground. Reichert has shown that after breaking up of the medulla, caffeine still causes a rise of the pressure, in other words, after paralysis of the central vaso-motors caffeine still elevates the pressure. Whether that elevation be through action upon the peripheral vessels, or by an action upon the heart, still remains uncertain, except that we have this one guiding fact, namely, it is proved that caffeine acts upon the frog's heart; and, therefore, under the law I spoke of in my last lecture, we know it must act upon the heart of the mammal. The pulse is not slowed by this drug. Sometimes it is slowed, I should say, and sometimes accelerated. There is, however, no stimulation of the vagi. We have in caffeine a mild stimulant to the heart and a powerful stimulant to the kidneys which is able to serve us somewhat in heart disease, and is especially useful when there is dropsy in a case of heart disease.

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[1] Delivered before the Harvard Medical School Association, April [illegible], 1893.

There are other remedies in the treatment of chronic heart disease which are also valuable. Prominent among these is strychnine. I want to call attention to the fact that strychnine is one of the most powerful of the vaso-motor stimulants we have, and that it probably has some action on the heart. It stimulates the vaso-motor centres. It is a centric stimulant. The respiratory centre, the vaso-motor centre, the motor centres, all feel the influence of this powerful stimulant, and strychnine, therefore, serves us in cases of heart disease well, as an aid to other remedies when we want especially to tone up the vessels. I want just here to put in a word for the value of a certain remedy in these cases which perhaps never has suggested itself to your mind as a cardiac stimulant, and which is no cardiac stimulant in any proper sense of the term, but which is an invaluable aid to these drugs, and the use of which will, I believe, in many cases bring success when without it your other remedies would fail. I refer now to calomel. Probably most of you are familiar with the work of Jendrassik, which has been imitated and followed and elaborated by numerous clinicians and which proves that calomel is often a very valuable diuretic, especially in cardiac dropsy. Jendrassik's method consists in giving a grain of calomel every one or two hours, six to nine grains a day, for two or three or four days, guarding the calomel by the use of opium, and he affirmed under these circumstances that calomel would bring on frequently violent diuresis. I am perfectly clear that his statement is correct and it is after all but another instance of how the old clinical knowledge of our forefathers, which in our half-light of science we often forget, comes up in perfectness and beauty when science shines out with more light. I remember Dr. George B. Wood always taught us that *the* diuretic combination in cardiac dropsy was squill, calomel and digitalis. We trod calomel under our feet, and I remember how we laughed in Philadelphia when some mountaineer said he was curing diphtheria with calomel; but to-day with us every man is treading in the footsteps of the backwoodsman. I have seen calomel act well as a diuretic not only in cardiac dropsy but in the most advanced kidney disease even a few days before the post-mortem showed that scarcely a trace of structure could be found in the kidneys. It is not, however, this use of calomel I want to call your attention to chiefly or solely. The greatest strain of cardiac disease comes upon the venous circulation, and when the blood is backed upon the vena cava what is first affected? The liver — so that you can hardly find a bad case of heart disease in which the engorged and swollen liver does not come down below the ribs. Now, under these circumstances mercury will often bring on bilious excretion and relief to the liver. My own experience is very positive that if you will add a careful use of mercurials to the employment of remedies I have been speaking of, you will get results in old heart disease you cannot obtain in any other way. I believe that small doses of mercurials are not sedatives to the general nutrition, but that the minute dose of mercury is really a tonic; and I have myself found the greatest service from the use of small doses of corrosive sublimate in the treatment of various forms of neurasthenia: one-hundredth or one sixtieth or one-fortieth of a grain three or four times a day often has a marked influence in some cases.

A lesson I want to leave with the younger men is, that in heart diseases we must never give up the case. A year or two ago I saw a case to which I called Dr. Pepper in consultation. The woman had not been out of bed for a year. It was Dr. Pepper's view that the mitral valve was practically all gone and the case hopeless. I, in the first place, enjoined absolute quiet. In the second place, I used massage very carefully seeing always that the strokes of the massage were directed toward the centre so as to aid in the carrying in of the lymph exudations and of the venous blood to the centre. I put the woman first on calomel in such doses as to get her liver in action, and then I used digitalis: to-day, with strychnia with minute doses of mercurials; to-morrow, when the digitalis was losing its power a little I slipped in strophanthus, and when strophanthus was wavering, I put the woman back on digitalis with caffeine, taking care never to give the caffeine after three or four o'clock in the afternoon, so as to avoid the danger of keeping the patient awake and producing a peculiar nervous erethism. Thus, working the patient along with rest and very careful feeding, and mercurials and a little iron and digitalis and strychnia and caffeine, I so far restored her to health that she was able to go to Europe on a pleasure trip, and still lives in comfort.

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Original Articles.

LOOSE BODIES IN THE KNEE-JOINT.[1]

BY MAURICE H. RICHARDSON, M.D.,
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Until very recently removal of loose bodies from the knee-joint has been attended with great risk both to the life of the patient and to the joint itself. Larrey's tables, in 1860, gave a mortality of twenty-one per cent. by the method of direct incision, a hazard so serious that surgeons were very cautious in advising this procedure. Various make-shifts were accordingly devised, the most important of which was the indirect method of removing the body from the joint cavity. By a subcutaneous incision the floating body was withdrawn from the joint into the periarticular tissues, where it lay harmlessly fixed. The dangers of joint and constitutional infection were much diminished by this method, but the results were less satisfactory. By the earlier Listerian methods the mortality was much reduced, but the use of the drainage-tube, which at that time seemed essential, made the risk of joint infection still considerable. The present details of aseptic surgery have reduced the danger so much that it is now unjustifiable to allow a body of any considerable size to remain in the synovial cavity of the knee-joint.

Some years ago I looked up the cases of this kind at the Massachusetts General Hospital. The earliest one recorded was that of a patient of the late Dr. Bigelow. Since then a considerable number of operations have been performed there, and the results have been good, as a rule. With one or two exceptions all the cases have recovered. In the last decade all but one have been successful. In that case the greatest care had been taken in the preparatory details, and every known precaution was carried out to prevent infection. The floating body was removed with ease and the joint was irrigated with phenyle. Death followed in a few days from acute septicæmia. This deplorable accident, occurring in a healthy young man, after unusual surgical care, suggested doubts as to the possibility of invariable success. The error must have lain in the use of the sulpho-naphthol for joint-irrigation, or possibly in the digital exploration which the operator used in this case. In sulpho-naphthol as an antiseptic I have very little confidence, though I use it frequently for its cleansing qualities in suppurating cases. Whether in this case infection took place in some other way or not I cannot say, but the possibility of infection in spite of all human care and skill must always be entertained in advising operations on cavities like the abdomen and knee. There is always an opportunity for infection through human fallibility; and I can recollect several instances in which suppuration has followed an operation in which severe self-criticism could recall no flaw.

But if there is danger in opening the knee-joint, even with all the details of modern aseptic surgery, there is on the whole a greater risk in leaving loose bodies to themselves. In my experience there has been in every case but one a chronic synovitis. At times the effusion has been excessive, and in one case hæmorrhagic. Chronic synovial effusions are dangerous to the integrity of the joint, and justify the very slight risks which attend modern aseptic methods.

The Operation. — It is better to open the suprapatellar pouch of the knee-joint by an incision external to, and above, the patella, parallel with the fibres of the insertion of the vastus externus. On the inner side of the joint at this point are the thick muscular fibres of the vastus internus. The external incision is, therefore, preferable. Before cutting the skin the loose body is, if possible, isolated, grasped and retained under the desired point with the thumb and forefinger of the left hand. An incision about an inch and a half in length is then made through the skin and subcutaneous tissues. Before opening the synovial membrane all bleeding points must be secured with pressure forceps. The manipulations should be executed without touching the wound with the fingers. The cut surface should be kept dry with *dry* sterilized gauze held in forceps. The flaps should be kept apart by the assistant with Vulsellum hooks. Nothing should touch the wound except objects which have been previously baked or boiled. The impossibility of rendering the fingers sterile makes these precautions reasonable and necessary. Having dried the wound carefully, the incision should be continued through the synovial membrane upon the foreign body. This should be grasped with forceps and withdrawn. At the same time the synovial fluid, which is almost always present, should be carefully squeezed out, avoiding if possible the entrance of air. In one case a good deal of air was sucked in after slacking the pressure used to expel the fluid and no harm resulted. In another, after removing the main body, I was able to see several smaller bodies attached by pedicles to the fringes of the joint; these I twisted off with forceps. Unless there is some reason for it, digital exploration should not be made, for the reason already stated — that it is almost impossible to render the fingers, especially about the nails, sterile.

The joint should not be washed out; first, because it is unnecessary, and secondly, because of the danger of introducing some septic element unless very strong antiseptic solutions are used. If there is a chronic synovitis with large effusion it may be wise to inject a five-per-cent. solution of carbolic acid or a 1–1000 solution of corrosive sublimate, as in cases of chronic synovial inflammation from other causes. This procedure should not be adopted in cases of acute synovitis.

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[1] Read before the Boston Society for Medical Improvement, February 1[illegible], 1893.

To Prevent Infection from the Skin.— In the closure of the wound the needle should be introduced from within outwards, making it necessary to have a wire with a needle at each end, if wire is used. Silver-wire, I think, is better than any other material for this purpose, because it may be subjected to a much greater degree of heat, and therefore may be much more thoroughly sterilized than any vegetable or animal fibre. After the application of the stitches the wound should be sealed with cotton and collodion, the joint fixed upon a ham splint, and the whole covered by a thick absorbent dressing, with gentle pressure.

Errors. — The deplorable results which occasionally follow errors in the management of these cases make it important that such faults should be emphasized. There may be errors in the preparation of the field. This should not be left to the nurse unless she is a person of experience. The details of the preparation should be made either by the surgeon himself or by an experienced assistant, and should be more thorough, if possible, than before abdominal section. First the whole leg should be shaved and washed with soap and water, and ether; then a green soap poultice should be applied from the ankle to the groin and left on over night. On the morning of the operation the poultice should be removed, the skin washed with water, ether, peroxide of hydrogen and corrosive sublimate (1–1000), and a very moist 1–1000 corrosive wrap placed about the whole limb, not to be removed until the patient is under ether upon the table. Before commencing the operation the field should be sterilized anew in the same manner in which the hands are prepared — namely, by a solution of permanganate of potash, by a solution of oxalic acid and by peroxide of hydrogen. Finally, the parts should be made perfectly clean with boiled water.

Only those instruments should be used which have been free from septic infection in previous operations. Septic operations should be performed with instruments specially devoted to that class of cases. Clean operations should have a special kit of tools. They should be sterilized by prolonged immersion in moist or dry heat, or both. They should be carefully unpacked after the hands have been sterilized, and should be kept free from any possibility of contamination.

Special care must be taken in preparation of the hands. They should be kept in as good condition as possible by regular visits to a skilful manicure. Before the operation the hands, wrists and forearms should be scrubbed for a long time with soap and a nail-brush; next the nails should be cleaned carefully with a pointed stick of orange-wood, and the hands scrubbed again; then they should be immersed successively in solutions of permanganate of potash, oxalic acid, and peroxide of hydrogen; finally, they should be soaked in corrosive sublimate and rinsed with boiled water.

The next error is that of introducing into the wound germs upon the fingers in spite of these precautions. As I have stated, therefore, the wound should not be touched by the hand or by anything that the hands have touched, if possible.

In spite of all these precautions we shall occasionally have a bad result in these cases. It is therefore important that the knee-joint should not be opened for any trivial cause. If a floating body is doing distinct damage, or if it is likely to produce injury to the integrity of the joint in the future, it is certainly our duty to advise and perform an operation, taking throughout the excessive care which I have described.

CASE I. M. L., Jr., aged twenty-three, of Rockport, Mass., entered Massachusetts General Hospital October 5, 1887. He was an engineer by occupation.

One year previous to entrance he had slipped on the stairs and strained his left knee, which has had limitation of motion and considerable pain ever since. There have also been three sharp attacks of acute synovitis within the year. He has been incapacitated from active work and in constant fear of again "catching" his knee. He limped into the hospital.

I could easily feel a loose body, and, on October 8th, opened the joint and removed it. The greatest care was taken in the detail and preparation for the operation. There was a large discharge of bloody serum from the inflamed cavity. The joint was washed out with 1–1000 bichloride and closed without drainage. The wound healed perfectly without rise of temperature, and in two weeks the patient went home in a stiff bandage. A fortnight later this was removed. The leg has been sound and normal ever since.

CASE II. M. L., Jr., the same patient as Case I, returned to the hospital on August 1, 1888. Seven days before entering the hospital his right knee had "caught" in a semi-flexed position. There was a sharp attack of pain and within the week the limb had "caught" three times. A loose body could be felt in the joint. There was no effusion.

On the 2d of October I performed an operation similar to that on the left knee, described above. In this case also the knee was washed out with sublimate, though there was no synovitis. The bit of cartilage was the size of a fifty-cent piece.

He made a perfect recovery and was about his work at the end of a month.

CASE III. H. H., aged fifty-five, of Gardner, Mass., was a patient of Dr. R. F. Andrews of that town. For forty years he had had occasional attacks of acute synovitis of the right knee-joint, which gave great annoyance. There was a sub-acute inflammation of the joint when I saw him last November. A loose body could be distinctly felt. On the 6th of December, 1892, I operated on him at his home. A bit of loose cartilage as large as a double eagle and twice its thickness was removed through the usual incision. The wound healed promptly by primary union, and he was very well at the end of two months, though there was still some stiffness in the motions of the joint.

CASE IV. R. L., aged forty-eight, of Brockton, a patient of Dr. J. B. Kingsbury, of Holbrook, had had increasing pain and tenderness in the right knee for one year, with occasional sharp attacks of synovitis. A loose body could be felt in the joint. I operated at his home on the 16th of February, 1893. A piece of cartilage the size of a silver dollar was removed without introducing the finger into the joint. Several smaller bodies were twisted from the capsule. He made a perfect and uncomplicated recovery.

It is interesting to note that in Case I and II the onset of the trouble was sharp and acute, following a strain or wrench, and in Cases III and IV the condition was more chronic, with no definite history of its onset or the cause.

PAPILLOMA OF THE LARYNX IN ADULTS.

BY J. PAYSON CLARK, M.D.,
[illegible]

ALTHOUGH papilloma is the most common, forming as it does from sixty to seventy per cent., of all laryngeal growths, cases are by no means frequently met with even in a large throat clinic like that at the Massachusetts General Hospital. It therefore seemed to me that a report of the five following cases and their discussion in the light of the accepted views on this subject, might be of interest to this Society, especially since some of them present points of more than ordinary interest.

The chief interest in the first four which I shall report lies in the fact that they have been for so long a time under observation. For the first two I am indebted entirely to Dr. F. H. Hooper's case-book at the hospital, in which he kept a careful record of those cases which especially interested him.

The following are brief reports of the cases, giving, as far as possible, only the important points:

CASE I. Ellen O. D., age twenty-five, single, domestic. First seen by Dr. Hooper on February 20, 1883. Always healthy. Cannot state positively how long she has been hoarse, but certainly for two or three years. No cough; slight dyspnœa. Patient very short and stout. Examination shows a pediculated polypus in the middle of left vocal band, size of a whortleberry, smooth surface, dark red color.

An immediate improvement of the voice followed the removal of the greater portion of the growth on March 28th. Dr. Whitney's microscopic examination showed the growth to be true papilloma. On May 12th the voice was natural; the left cord was almost like the right. A year later there was still some thickening of the left cord, although the voice was excellent. The patient was last seen in October, 1888. There was no recurrence of the growth.

CASE II. Maggie D., age fourteen when first seen by Dr. Hooper in October, 1884. Family history good. Patient had scarlet fever in 1875; measles in 1878, followed by rheumatic fever and slight chorea; and in 1882 German measles. In June, 1884, her present throat trouble began. Hoarseness has grown gradually worse. For the past month has been able to speak only in a low whisper. Heart and lungs normal. Has shortness of breath. Examination of the larynx shows a large papillomatous mass situated in the anterior angle and on the right side of the larynx. It fills the right ventricular sinus and completely covers up the right cord. The left cord is only seen in the posterior third. The mass protrudes into the laryngeal cavity and almost fills it. It is smooth, pinkish in color, and very soft looking.

This growth was thoroughly removed and several months later a small regrowth from the right ventricle. The patient was last seen in March, 1891, at which time there was no recurrence.

CASE III. October, 1889. Minnie H., age sixteen. Had diphtheria when eight years of age. Began to grow hoarse in April, 1889; noticed it first in singing. Has grown steadily worse since. Practically aphonic at present. Both vocal cords are the seat of soft papillomatous growths, also ventricular sinuses. Later small papillomatous masses were discovered on base of tongue. During the next three months portions of the laryngeal growth were removed at different times by Dr. Knight, Dr. Hooper and myself. In spite of constant attention, however, it continued to recur. Dr. Whitney's examination showed the growth to be true papilloma. A record made by Dr. Hooper, December 4, 1890, states:

"Has been operated on several times by Dr. F. C. Cobb and others, last time being in April, 1890. Voice was afterwards perfectly clear. Began to grow hoarse again last month. This hoarseness has increased. Examination shows a small nodule under anterior portion of right vocal cord. All other portions of larynx healthy. Warty growths in mouth are gone." This patient was seen several times after this by Dr. Cobb, and the small recurrence above mentioned was thoroughly removed. In January, 1893 (two years after last operation), the cords were perfectly clear and the larynx normal in every way.

CASE IV. November 13, 1889. Mrs. A. M. B., age thirty-eight. This patient was first seen by Dr. Knight in 1878; and I am indebted to his notes of the case taken at that time for the following history:

The patient has always enjoyed good health with the exception of colds. Had measles at the age of seven, with sore throat and loss of voice for three months. Had diphtheria two years ago, and has had trouble with voice and throat ever since. Has been gradually growing worse. Breathes and swallows with difficulty. No evidence of lung trouble. Growth as in diagram (see Fig. I).

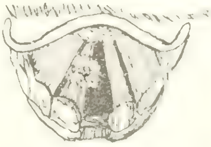

FIG. I.
(Copied from Dr. Knight's records.)

This growth was thoroughly removed by Dr. Knight, and the voice was good from that time until a year ago (1888). General health has been good. Is quite hoarse at present. Examination shows soft papillomatous growths on anterior third of each vocal cord, also a little at anterior angle. The patient's throat was exceedingly irritable and required considerable drilling before I was able on November 30th to remove a large part of the growth on the right cord. On December 5th I removed most of the growth on the left cord and part of the remainder on the right. The patient was seen several times after this and the growth thoroughly removed. When last seen, except for a slight injection of the vocal cords the larynx was normal.

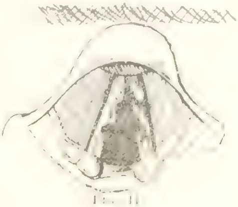

FIG. II.

February 8, 1893, the patient came to see me to-day, at my request. She had scarlet-fever last April. For past five months the voice has been husky, but it was not perfectly clear before the fever. Examination shows growth as in Fig. II.

CASE V. Mrs. F. E. W., age thirty-six, came to see me first on June 7, 1892. Mother died of cancer at the age of forty-one. After a severe cold when three years old the patient lost her voice for three

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[1] Read before the Boston Society for Medical Improvement, February 13, 1893.

years. It then began to improve, but never became clear. At the age of eighteen, after an attack of whooping-cough, the voice gradually grew worse again. Nine years ago, and at intervals of several months since then, she has coughed up a little blood. This has occurred several times during the past three weeks, and once there came half a cupful of bright blood. During the past year the patient has occasionally coughed up pieces of the growth. The examination of the chest was negative. The patient is well nourished but rather pale. Apart from the throat trouble the health is good. The voice is a hoarse whisper, evidently produced with considerable effort; and the dyspnœa is considerable. Examination of the larynx shows a large papillomatous mass, apparently rising from the right vocal cord, the ventricle and the ventricular band (later the growth was found to arise only from the right cord). The posterior portion of it flaps up and down between the cords on respiration. Fig. III will give some idea of the size and appearance of the growth at this time. The pharynx and larynx were sprayed with a four-per-cent. solution of cocaine at each sitting, and the growth was removed with Schrötter's tube forceps. Six sittings in a period of nine days were required to remove the whole growth. Hæmorrhage was never very troublesome although it was rather more at the last two sittings than at first. On June 20th there remained considerable thickening of the right cord but no growth.

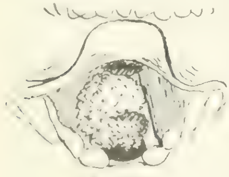
FIG. III.

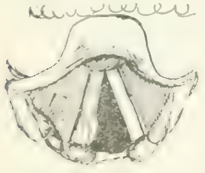
FIG. IV.

The patient was next seen on August 20th. She had had a slight hæmorrhage from the throat ten days after returning home. She had had a throbbing feeling in the throat occasionally; and when she got tired she "felt it" in her throat. Examination then showed the right cord still thickened and on the free edge of the cord in the posterior third a small growth (about the size of that in Fig. V). This was touched twice with trichloracetic acid without effect. On September 2d it was thoroughly removed with the forceps.

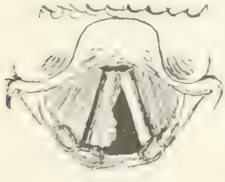
FIG. V.

Fig. IV gives some idea of the appearance of the larynx after this last operation. The small projection on the right cord was the seat of the recurrence and had the appearance of a fibrous thickening of the cord.

Fig. V shows how the larynx appeared when the patient was last seen on January 30, 1893. The voice is now somewhat husky, not so clear as it was in September. Nothing was done to the growth at this time as the patient was suffering from a cold. This recurrence will be removed later. Dr. A. K. Stone made a careful microscopic examination of the growth and reports, "a papillomatous growth, quite distinct from the mucous tissue in which it is implanted."

Our knowledge of the etiology of these neoplasms is still very incomplete and unsatisfactory. Some of the generally accepted predisposing causes are: catarrh of the larynx, over-exertion of the voice or its use under unfavorable conditions; the exanthemata, particularly measles; whooping-cough, diphtheria, and by some the syphilitic and tubercular dyscrasiæ. Fauvel "reports several instances of warty growths in the larynx, occurring in individuals who were subject to what he calls the 'papillomatous diathesis' as shown by the existence of warty growths in other portions of the body." In Case I of this series no cause was discovered. Case II had scarlet fever nine years before the appearance of the growth, measles six years, and German measles two years before. From the interval of time which elapsed before the appearance of the growth it hardly seems probable that there could be any causative relation between any of these diseases and the papilloma. Nor is it easy in Case III to trace any connection between the neoplasm and an attack of diphtheria eight years previous. In this case we might say there was the "papillomatous diathesis" which, of course, explains nothing. Diphtheria was probably the exciting cause in Case IV; and in Case V the growth apparently originated in a severe cold and was started into activity later by the attack of whooping-cough.

The only unusual symptom shown by any of the cases was hæmorrhage in Case V. This is an exceedingly rare symptom and Bosworth says a severe hæmorrhage would point rather to malignancy in the growth. Another fact which might excite a suspicion of malignancy in this case is that the recurrence has taken place in the posterior portion of the cord, a much less frequent seat for these growths than the anterior portion of the larynx. It may be of interest to notice in this connection that the patient's mother died of cancer. It is interesting also in this case that the growth had existed for so many years and attained so great size without being diagnosed or apparently even suspected. The symptoms which led the patient to seek advice were principally the hæmorrhage and cough which she was inclined to attribute to some lung trouble.

In the removal of these growths various forceps, snares, guillotines, curettes and cutting instruments have been used and every laryngologist has his favorite instrument. Doubtless, however, the instruments most generally used and which will be found to be best adapted to the majority of cases are Mackenzie's rectangular and Schrötter's tube forceps. My personal preference is for the latter instrument as it offers very little to obstruct the field of vision and is capable of very accurate manipulation. The objection of some writers that it is too delicate of construction for all growths appears to me not valid. To my mind these forceps grasp with all the force I should care to exert in so delicate an organ as the larynx.

The marked tendency which papilloma of the larynx has to recur is well illustrated in four of the above cases. In Cases II and V the recurrence was doubtless due to the fact that the growth had not been thoroughly extirpated. In Case III, however, and in the first instance in Case IV the new growth occurring in a different part of the larynx from the first could hardly be ascribed to this cause. The second recurrence in Case IV might be due to insufficient extirpation although there was not the slightest evidence of any remnant of the growth after the last operation. The fact of a reappearance of papilloma in this case nine years after the first growth was removed, shows that it would not be safe to prophesy future immunity for any of the other cases.

What is the best method of treating these growths? Is it possible to prevent their recurrence? In the first place it must be borne in mind that these are benign growths, only dangerous as they offer an obstruction to respiration by their increasing size, which is in adults always sufficiently slow to give ample warning of danger. It must also be remembered that their natural tendency has been shown to be, sooner or later to disappear. Our first aim therefore must be to choose some method of operation which cannot injure in any way the delicate structures of the larynx. Such a method, it seems to me, is offered by the use of laryngeal forceps, especially Schrötter's tube forceps. In operating, accuracy in bringing the instrument quickly to the desired spot in the larynx is an all important factor. Undue haste to grasp the growth and remove it must be carefully avoided. The operator must see distinctly what he is about to grasp with his forceps. To quote Dr. Hooper: "The peculiar nature of these benign papillary growths and the delicacy of the laryngeal structures demand that, when surgical interference is necessary, it should be conducted with the greatest prudence and patience."

The application of one of the various caustics to the part from which the growth has been torn seems to be either useless or harmful and sometimes even dangerous to life. In some cases the use of caustics or the galvano-cautery has only stimulated the growth, while on the other hand, cases are on record where from the use of powerful caustics adhesions have been formed which have permanently impaired the voice.

In treatment, therefore, it is well to avoid agents, such as powerful caustics, which may do injury to the normal structures of the larynx and simply to remove the growth as thoroughly as possible by other means whenever it becomes of sufficient size to interfere with phonation or respiration, bearing in mind its benign character and its tendency to ultimate atrophy and disappearance.

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REPORT OF ONE HUNDRED AND SIXTY CASES OF EPILEPSY.[1]

BY S. G. WEBBER, M.D., BOSTON.

(Concluded from No. 20, page 494.)

Case 73 is a marked instance of the petit-mal changing to the grand-mal after several years. This young man was thirty-six years old when I first saw him. About twelve years previously he began to have dizzy feelings with a disposition to move the bowels, he had to lean against the house to prevent falling, staggered in walking. He had these attacks two or three times a year for four years; then more frequently, every few weeks; they also became more severe; finally he would have three or four a day, and then go several weeks without one. During the attack he was first dizzy, then perspired, would not fall, staggered to the sofa; this lasted a minute; then he would be sleepy, have a nap and headache after.

About ten years after the first attack of dizziness he had a fully developed grand-mal occurring every four to six weeks. He bit his tongue; the blood settled under the skin of his face in spots.

Case 79 had for nine years petit-mal, consisting of attacks in which he would whirl round, then sit down. After nine years he had a convulsion.

Case 124 is that of a young woman, twenty-four years old. At twenty years of age she had bewildered attacks, would be all mixed up, and for an instant could not separate her ideas. "A thought would come to her, and she would try to think it out; then another thought would rush in." This lasted only an instant. Consciousness was not lost then. Generally she had these turns once a week, though sometimes every day. About a year later she would ask strange questions during the attack, and on recovering did not know what she had said. Sometimes she was sleepy afterwards. A little over three years later she had convulsions.

I have given the details of so many of these cases because it is important that epilepsy should be recognized early and no time be lost in instituting the proper treatment before a vicious habit is formed and the nervous system becomes accustomed to the attacks, when it would be so much harder to cure the patient. If one can ever be cured of this trouble, it is at the outset, before it has become fixed. We should never allow these suspicious cases of petit-mal to pass from our care without warning the friends and advising vigorous treatment.

Twenty-five of my patients had the petit-mal alone; forty-eight had the grand-mal alone; eighty-nine had both.

VARIETIES OF PETIT-MAL.

Dizziness or faintness	33
Momentary unconsciousness	16
Queer sensations in	
Head	5
Hands and arms	4
Stomach	3
Legs and feet	3
General	3
Numbness in different parts	4
Special sense	
Sight	3
Smell	1
Hearing	1
Motions in different parts	4
Nausea and vomiting	6
Mental	5
Affection of speech	4
Rush of blood to head	2
Fright	2
Rapid swallowing	2
Staring or blank look	2
Paralysis, or sense of weakness	2
Rigid all over	1
Things seem strange	1
Smothered sensation	1
Screams	1
Spits ten or twelve times	1
Sleepy	1
Distress	1
Sensation as if elsewhere	1
Cold	1
Undefined	3

It is not necessary to give here a detailed account of the phenomena of the major attack. I will only mention a few of the more interesting peculiarities of my patients.

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[1] Read before the Medico-Psychological Society, Boston.

The severe attacks began with a cry in only a small number of cases, 13; while in 98 it was absent. The cry is not a frequent symptom. In three cases a slight noise was made by the patient at the beginning of the attack, rather like a gurgling in the throat. One patient made this noise just as he had a petit-mal in my office.

Consciousness was lost in all the cases of the grand-mal and in most of the cases of petit-mal. Only about 16 of the patients claimed that they did not lose consciousness, and these were all cases of the petit-mal without the major attacks.

The time in which consciousness was in abeyance varied with the nature and severity of the attack. It may be only a few minutes, or it may be hours, before the patient knows what occurs around him. Consciousness is rarely recovered as soon as the convulsions cease.

Many patients froth at the mouth during an attack. This symptom was present in 28 cases, absent in 99.

Nineteen patients bit their tongue more or less frequently.

Six showed punctate hæmorrhages under the skin, usually of the face, after an attack.

The attacks may occur in groups, several coming near together; then none for an interval of variable length; then another group of several. Generally the intervals between the groups of attacks are of nearly the same length. Sometimes there will be an irregularity, several attacks coming in the interval; sometimes the interval is variable.

The petit-mal is rather more likely to occur thus in groups.

In 15 cases the spasm was unilateral. In three cases the left side was affected with clonic convulsions, while the right side was in a state of tonic spasm.

Several patients had only a few or perhaps only one grand-mal but many petit-mals. Case 49 had two fits at an interval of two years. Case 70 had frequent attacks of grand-mal from the age of twelve to fifteen; then he had four, each at an interval of three years from the preceding.

Case 53 had the petit-mal from the age of seven to fourteen; then she came to this country, was very sea-sick, and had none for three years; then, living in a very unhealthy location, she began to have the grand-mal.

Case 108 had frequent attacks from five to eight years; then none till he was twelve.

Case 41 had an interval of two years without an attack; then they recurred more frequently than before.

Case 40 had convulsions at two and half years, again at thirteen years, and again at nineteen years; after the latter he had petit-mal.

It is possible that some of these had been taking medicine while they were free from the attacks; but it was not so with all.

Case 28 give birth to a child during an attack. She had several attacks after the birth of two other children.

Some patients think they can prevent a fit; as they express themselves, "they can throw it off," by some act, which requires a great effort. It seems as though the mental effort necessary to accomplish the desired end served to abort the attack. It is not unlikely that the reason many patients do not have an attack in dangerous places is, that the instinctive and perhaps unconscious dread of having one in such places serves to inhibit the attack.

In a few cases of unilateral spasm there was a partial paralysis after the fit on the affected side. The paralysis passed off in most cases, except when it occurred in infants.

Either during or just after an attack some patients perform certain acts which seem to be voluntary, but which are automatic, of which they are not conscious on coming to themselves. Thirteen patients performed these automatic acts. Some acts were very simple others were more complicated.

Case 28 tried to take off her rings and to unbutton her dress when half over the fit.

Case 4 would sometimes begin to undress; once he began so to do while calling on a young lady in the evening, and on coming to found he had made some progress in removing his clothing.

Case 129 went into her parlor and began to undress; once she did this before company; another time she undressed to her corsets in the kitchen, then went up stairs and went to bed and asleep.

Case 110 left the supper-table, went up stairs as fast as she could, then down again into the pantry and started the water running, said "Feel bad." Her mother led her towards the stairs; then she became rigid.

Case 10 suddenly jumps, runs up stairs and down; if spoken to, gives a saucy answer.

Case 121, in my office, got up and walked round, as if looking at things.

Case 112 jumped out of bed, spit round the room a tough, thick sputa.

Case 120 tried to pick the paper off the wall, talked foolishly. Again he took his banjo, went to the cellar, took an axe, and when a woman tried to stop him he attacked her; she ran off, and then he smashed his banjo. In half an hour he was all right again.

Case 88 tore books, pulled clothes, marked with a pencil.

Case 113 had an idea that one wishing to help him was up to mischief. He started up, went out of doors, thought his friends wanted him to do something he did not wish to. Once when he was making a fire he had an attack, and the next he knew he was in a strange room dressing.

Case 42 for half an hour after an attack wants to get out the window, under the impression that it is a flight of stairs.

Case 22 talks, misplaces words, throws things about, takes hold of people, imagining they are going to strike him, and he tries to strike them. Once he went inside a building where he was at work, and began to pile up wood as if to take home.

It will thus be seen that these automatic acts differ widely in their nature in different patients. Some of them occur during or after the petit-mal, others after light attacks of grand-mal. They do not occur after severe attacks of grand-mal. The medico-legal importance of these acts is evident. In no case was the patient conscious of what he was doing, and had no recollection of what he had done, his knowledge of the acts coming from others or from the effects which he saw afterwards.

The relation of epilepsy to sick-headache is interesting. Fourteen patients had sick-headache in early life and in most of these the headache was less severe, or entirely disappeared when the convulsions commenced.

Case 102 at twenty years of age, twice fell not losing consciousness; after that she had sick-headache with nausea and vomiting, chiefly at the time of her catamenia until about forty-nine years of age. A few years before that they diminished in frequency. At forty-five she had dizzy turns, not severe; after forty-seven more severe. There was no loss of consciousness.

Case 118 had sick-headache from early life. At thirty-two years of age or a little later, she had a severe shock, after which she had the petit-mal: and after that the headaches were less frequent, and less severe.

Case 124 had much headache at school; at about twenty-two years old the headache was much less frequent. At twenty years of age she began to have bewildered turns.

Case 98 had sick-headache with scintillating scotoma, from ten to fifteen years of age; then she had visual phenomena without headache; this gradually left, and she had only one or two headaches in two or three years, one at forty-two years. About forty she began to have petit-mal, and later she had grand-mal.

Case 96, a girl eighteen years old, had always had headache every three or four months, with some pain all the time. The winter I saw her these were less frequent; and in May she had an attack of grand-mal.

Case 83 had sick-headache every month or so till thirty-three; then not so much; and after some teeth were out she had very little. At about forty-three she had petit-mal, and later the grand-mal.

Case 47 had terrible sick-headaches early in life; but after the attacks of petit-mal began, he did not have these. The petit-mal followed an exposure to the sun, merely standing in the sun.

Case 43 had headaches in the morning, which returned in the afternoon, from ten years old; before that she had had chorea. The headache was severe; sometimes she vomited; sometimes was dizzy. She had these attacks every day until she was sixteen. The headache then changed to darting pains of a neuralgic type occurring occasionally and after she had the epileptic attacks these ceased.

Case 162 had sick headaches once a week from fifteen years of age until the epilepsy set in, at about thirty-six; after which he had only one attack in a year.

As the correlative to these cases in which was headache in early life and the epileptic attacks later, may be mentioned Case 111, a young lady who had convulsions in infancy, recurring frequently until she was seven years old; after which she had sick headaches, which at the time I saw her were becoming worse.

It will be seen by these cases that there is, as it were, an interchange between the two explosive forms of neurosis; that when the earlier form ceases, its place is taken by epilepsy. It would seem as though the two cannot occur together. The cases are not numerous enough to warrant the statement that sick-headaches are likely to be replaced by epileptic attacks later in life; but we are warranted to be on the watch for any manifestation of epileptic phenomena in patients who habitually have headache and at once institute the proper treatment. I think I saved one such patient from falling into the habit of having the petit-mal at the time when the headaches ceased.

Among irregular and unusual manifestations of epilepsy, may be one in which a cough seemed to have a relation to the attacks similar to petit-mal. The patient was a boy, aged sixteen, when I saw him. He had had a cough every two to four months; he rarely raised any sputa; the cough lasted two or three weeks. He did not seem to catch cold. About a year before I saw him he had a very bad coughing spell; after which he had a common epileptic attack, lasting only a few seconds; a short time after, he had another fully developed attack in the night. After these attacks he had very much less coughing.

The question whether epilepsy affects the mental powers of the patient is an important one; and the question is often asked. I am sorry that my notes do not give enough information on that point to be of value. In only a few cases is the mental condition of the patient mentioned. My impression is that the mental powers of patients were impaired in only a small proportion of the cases where the disease began after childhood; but where it began in early life, or where the epilepsy followed convulsions in infancy, the mind was much more likely to be affected.

The question which will most interest our patients is in regard to the prospect of relief. What proportion of patients recover, and how many are relieved?

Many of my patients were seen only once. Of sixty from whom I heard more than once, only ten obtained no perceptible benefit from treatment. Four or five recovered who had not had syphilis. Eighteen are recorded as having fewer attacks, two as having less severe attacks (and in these it is probable that the attacks were fewer also). Nineteen are mentioned as having fewer and less severe attacks. Nine are simply recorded as receiving benefit. Two were relieved at first, but afterwards became worse. One of these had fewer and much lighter attacks for several years, before they again became severe. Two died in the status epilepticus, one after being benefited by the treatment.

Those who were helped were in many cases very much relieved. One went eleven months without an attack; one, who was having spells two or three times a week and sometimes two or three a day, had only one in two months; another, having four attacks in four weeks, had only three in three years; another, having petit-mal several times a day and the grand-mal every two weeks, had the latter only three times in a year and the petit-mal was reduced to about three a week. Others report no fits for two, three or five months. One patient went five months, then had one; then he went six months without. One reports that when he takes the medicine he has few or no fits; went eight months without any.

Case 137 went two years without an attack; then he had one, having had no medicine for over a year.

Case 60 came to me when eighteen years old, having had thirteen epileptic fits in the previous two and a half years. The cause seemed to be overheating, indigestion and hard study. As petit-mal, he was frequently confused for half an hour.

Three months after I saw him he had an attack; a year later he had another; and four months after, a third. It was two years and eight months before he had the fourth; and since then he has had none, having been ten years without an attack.

This patient was very careful in regard to his diet, exercise, studies and devotion to business; he would undertake no new enterprise, would not go to the country, would make no change in his habits without consulting his physician. Much of the success of his treatment is owing to this carefulness.

Case 132 had no attack after I saw him for six months, when he ceased coming to me.

Case 108 had a fit on December 8, 1882; then two slight spells, not severe fits, more like petit-mal, about the first of February, and a very slight one in June, 1883; and after that none for five years, since which I have not seen him.

Another patient with phymosis was circumcised; and while the wound was sore had an increase of attacks, up to eighty a day. When he had healed, these ceased; and for many months he had none. He has not been seen since.

A little girl had trouble with her second teeth, a double tooth pressing on the gum. This was remedied and the fits ceased. She was seen for several months, and had no attacks.

In the treatment of epilepsy I have found nothing better than the bromides; indeed, these salts have done so well that I have made only a few trials with other remedies. I give at least ten grains three times a day to adults from the first; in many cases I begin with fifteen. The drug is increased rapidly, according to the frequency and severity of the attacks, until an impression is made upon them or there are symptoms of bromidism. With the bromide I always combine iodide of potassium, giving five grains three times a day. If there is a history of syphilis, the iodide is given in much larger doses. The patient who did the best, had ninety grains of bromide a day for several years, four or five, with no unfavorable effect.

I always give iron in some form with the bromides to counteract any tendency to anæmia caused by the drug. When the bromides cause much acne I give arsenic (a few drops of Fowler's solution) after meals.

The diet is very important. I forbid the use of meat, allowing any other wholesome food. I found one of my patients several years ago was not doing well, and directed that no meat should be eaten; he immediately did much better. I have had a similar experience since in other cases; and now I always give this direction.

It is not easy to keep patients to this treatment and diet. One patient was doing very well, had done well for some years, but found the bromides so repulsive that he could not continue with them, and gave up the treatment. He had the attacks again, but I do not know with what frequency.

Of course, any condition acting as a cause of the fit, should be corrected, as phymosis, irregular or irritating teeth.

It will be seen from the accounts given of some of the patients that it is not safe to leave off the treatment very soon after the attacks cease, as there is a liability that they may return. In one of my patients they returned two years after they had ceased, and one year after the medicine had been omitted. It is not easy to induce a patient to continue taking medicine which seems to be unnecessary for so long a time.

Removal of Aniline Stains from the Hands. — The stains used in microscopic work may be largely removed by a little alcohol, or hydrochloric acid; but, to do it completely, some bleaching agent is required. Unna has lately recommended that the hands be first washed in a solution, containing about five per cent. of common salt, then in hydrogen peroxide solution, of about the same strength, and finally wiped with a cloth moistened with alcohol.

OVARIOTOMY IN AGE.

BY JOHN HOMANS, M.D.

In looking over my cases of ovariotomy I was surprised to find that I had operated on twelve women over seventy years of age.

It seems to me that this list of cases is worth reporting, particularly as showing how well elderly women bear the operation, and as a stimulus and a warrant to the general practititioner to send elderly women to the ovariotomist. These cases can only be shown in a table, and I know how readers of a medical journal detest tables; but I can see no other way, and the table will be very short and I think interesting.

Of these twelve cases, nine recovered and three died. The three fatal cases would have had the same termination at any age if the subjects had been in the same condition. In one the tumor was cancerous, and was not completely removed at the end of a long and bloody operation; in another case the patient had been paralyzed for eighteen months, had been tapped four times, and the tumor was adherent; while the third had been tapped six times, had œdema of the lower extremities, and the operation was long and tedious on account of the adhesions.

No. V is the oldest ovariotomy ever published, and is still living in excellent health, at the age of eighty-seven years and seven months. Indeed, all but one of the nine recoveries were living in December, 1892.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE HUMAN SACRUM.[1]

We have as yet only an abstract of this important paper by Prof. A. M. Paterson. He begins by pointing out that the variations of the human vertebral column have of late years attracted much attention. Rosenberg's memoir is a much-quoted one. This observer started the theory of a phylogenetic shortening of the vertebral column by the advance of the sacrum towards the head. According to Kölliker, the sacrum in early fœtal life is attached behind its ultimate position. Something may happen to accelerate its advance thus giving fewer præsacral elements, or to retard it thus giving a greater number. The former kind of column he considers the "future" form, while the latter is stigmatized as "ancestral." Topinard holds that anomalies in the thoracic and lumbar regions may result from excess, or defect, or compensation. Holl believes that there is no shifting of the ilium during development and that in most cases the first sacral vertebra is originally, as well as later, the twenty-fifth.

Having thus cleared the way (though this is but a much abbreviated statement), Dr. Paterson gives his own results. His first conclusion is as follows:

"The examination of a large series of vertebral columns compels one to discard as inadequate the theory of 'intercalation' and 'excalation' to account for the variations in the number of vertebræ in the several regions. The hypothesis of inherent variability, of

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[1] Proceedings Royal Society, London, vol. li, 1892.

TABLE OF OVARIOTOMIES (HOMANS).

No.	Age.	Tapped, and when tapped.	Date.	Result.	Complications, etc.	Nature of Tumor. Size, weight, etc.	Remarks.	Present Condition.	Where published.
1	[illegible]	[illegible]	Nov. 28, 1881.	Recovery.	Incision [illegible] inches, adhesions to [illegible] peritoneum, [illegible] Recovery rapid. Temperature only once above 99°.	Multilocular cyst of right ovary, [illegible] 24 lbs., [illegible], non-malignant.	Strong healthy woman.	Is living and perfectly well [illegible] aged [illegible] years.	[illegible], Boston, [illegible]
2	[illegible]	[illegible]	Dec. 8, 1882.	Recovery.	Incision 3 inches, adhesions to omentum, recovery rapid.	Unilocular cyst of right ovary, fluid [illegible] lbs., solid 1 lb., non-malignant.	Strong healthy woman, farmer's wife.	Died August 1[illegible], 18[illegible] [illegible]	1883.
3	[illegible]	[illegible] Sept. [illegible], 188[illegible].	April 4, 188[illegible].	Died on fourth day.	Adherent to parietes over an extent of 12 inches, and to pelvis. Glass drainage tubes.	Multilocular cyst of left ovary, 75 lbs., non-malignant.	Cyst tapped Sept. 1[illegible], 188[illegible], [illegible] lbs., Dec. [illegible], 2[illegible] lbs., Sept. 2[illegible], 1881, [illegible] lbs.	Died [illegible] day. Had had hemiplegia [illegible] months previous.	188[illegible]
4	[illegible]	Ovariotomy, [illegible] second [illegible] by me [illegible] Feb. [illegible], 188[illegible] [illegible]		Recovery.		Multilocular cyst of left ovary, with ascites. Bowels and ascites in a lateral pouch with narrow neck. Tumor so adhesive to uterus that body of uterus was removed also, and stump treated extra-peritoneally. Glass drainage tube. Tumor non-malignant.	Ascites. Recovery uneventful.	Strong and well Dec. 1[illegible], 18[illegible].	18[illegible]
5	[illegible]	Two years [illegible]	[illegible]	Recovery.	Incision 2 inches. Cyst wall thin and brown.	Multilocular cyst of left ovary, weighed 1[illegible] lbs., non-malignant.	Strong healthy woman.	Living and well Dec., 18[illegible].	[illegible] Boston Medical and Surgical Journal, [illegible]
6	[illegible]	[illegible]	March [illegible], 188[illegible].	Recovery.	Incision [illegible] inches, adhesions to [illegible] abdominal wall.	Multilocular cyst of left ovary, 1[illegible] lbs., non-malignant.	Healthy woman.	Living and well Dec., 18[illegible].	Never published.
7	[illegible]	In 188[illegible].	April 2[illegible], 188[illegible].	Died on fifth day.	Long, tedious and difficult operation, adhesions. Cyst adherent in epigastric region quite extensively.	Multilocular cyst of right ovary, non-malignant.	Oedema of feet and ankles; had been tapped [illegible] times in [illegible] years.	Death on fifth day.	Never published.
8	[illegible]	[illegible]	June 1[illegible], 1889.	Recovery.	Incision 4 inches, adhesions.	Multilocular cyst of right ovary, fluid [illegible] lbs., solid 6 lbs., non-malignant.	Healthy woman.	Believed to be well [illegible], 18[illegible], but not heard from.	Never published.
9	[illegible]	May, 18[illegible].	Dec. 1, 18[illegible].	Recovery.	Long incision, burst cyst. Patient bore operation perfectly well.	Multilocular cyst, fluid [illegible]. Not weighed, probably 3[illegible] lbs. Non-malignant.	Urine involuntary.	Living, much improved [illegible]	Never published.
10	[illegible]	Just before operation.	Oct. 9, 18[illegible].	Recovery.	Cyst friable with thin, degenerated walls.	Multilocular cyst of left ovary, the other, several small masses, [illegible] present.	. . . . . .	Dec. [illegible], 18[illegible], in perfect health.	Never published.
11	[illegible]	Thirteen times, last time, Nov., 18[illegible].	Dec. 1[illegible], 18[illegible].	Died on [illegible] day.	All vessels could not be tied, abdomen stuffed with gauze.	Solid, malignant, cancerous, in Cul-de-sac, left ovary.		. . .	Never published.
12	[illegible]	.	Feb. 2, 18[illegible].	Recovery.	Incision [illegible] inches, one adhesion to omentum.	Solid, 16 lbs., in left ovary.		No rise of temperature after operation. [illegible] Returned home [illegible], perfectly well.	Never published.

shifting of one region at the expense of another, fully explains the cases of individual variation. The changes met with may be regarded as produced, not by the sudden (and anomalous) interposition or loss of a vertebral segment, but by a conversion of the segments of one region into those of another and contiguous region."

That this is the usual process seems highly probable, but this theory fails entirely to account for the cases of the suppression or addition of a vertebra to one region without any change in number of the vertebræ of the other regions and without the vertebræ at the junction of the regions becoming transitional.

We cannot give all of Dr. Paterson's conclusions, but will state some of the more important.

"There is a marked tendency on the part of the first sacral vertebra to be liberated from the rest of the sacrum. It retains its individuality more clearly than the other vertebræ, and frequently approximates in type to the lumbar series." He finds that six sacral vertebræ are much more common than four and that the extra one is usually taken from the coccyx.

He finds that increase in the total number of bones is more common than diminution. This is true of the spine as a whole, and of the præsacral, sacral and post-sacral divisions.

"The examination of the correlation of the spinal nerves and limb-plexuses with the vertebral segments shows both specific and individual differences in this respect. The individual differences may be classified under three types: (1) a variation in the arrangement of the nerves without any concomitant variation in the vertebral column; (2) a variation in the vertebral column without any concomitant variation in the nerves; and (3) a coincident variation in both nervous system and vertebral column." From this the author draws the important conclusion that "these varying relations of the nervous system to the vertebral column diminish the value of the spinal nerves in the determination of the serial homologies of the vertebral segments."

He sums up, as it seems to us very justly, against Rosenberg's views, except on one point. He says that "the array of facts presented does not afford much support to the theory of a phylogenetic shortening of the spinal column". . . . but "rather that there is in the human vertebral column a certain limited variability in the correlation of the several parts. . . . There is no evidence to show that any definite process of either shortening or lengthening of the vertebral column is going on phylogenetically." Dr. Paterson agrees, however, with Rosenberg and Topinard, that a fusion of the coccygeal vertebræ with the sacrum is in progress.

ROTATION OF THE SPINAL COLUMN.[2]

In the lumbar region the rotation is almost nil. The thoracic vertebræ rotate one on another, and the entire thorax can turn half a right angle — perhaps more. The lowest thoracic vertebræ have less power of rotation than the upper. Rotation is especially free in the neck.

The most effective rotator muscles are the more superficial parts of Edward Weber's muscular spiral, which begins below at the pelvis with the broad abdominal muscles and is continued above in more slender prolongations such as the splenii, the posterior serrati superiores, the scaleni, sterno-mastoids, etc. These muscles are powerful and inserted well out of the axis of rotation, that is, to a fairly long line, which accounts for their action. The so-called rotatores amount to very little.

RELATION OF DURA MATER TO THE JOINT OF THE JAW.[3]

Mr. Edward Fawcett has found by dissecting the region of this joint from above that a tube of dura mater passes through the foramen ovale around the third division of the fifth pair of nerves. This soon breaks up into an anterior, external and posterior portion. The anterior band, carrying with it the baccal and external pterygoid branches passes to the inner surface of the external pterygoid muscle and is lost in its sheath. The external band, containing the masseteric nerve, passes over the external pterygoid muscle and blends with the front part of the capsular ligament. The posterior band, with the auriculo-temporal nerve in it, passes backward and blends with the inner side of the capsule. The anterior is the only one of these bands that is made distinctly tense by the movements of the jaw. This occurs when the lower jaw is strongly depressed, as in yawning.

THE REGIONS OF THE ABDOMEN.[4]

In our last Report we alluded to the discussion which had been started by Professor Anderson on the confusion resulting from the many methods of dividing the abdomen into the nine conventional regions. The Committee of the Anatomical Society of Great Britain and Ireland has reported. Professor Cunningham has published a paper which is stated to be essentially this report. We are not aware that the Society has taken any action in the matter. Dr. Cunningham proposes that the subcostal plane (for it is evident that we have to deal with organs below the surface and therefore must speak of planes rather than lines) "should pass through the abdomen at the level of the most dependent part of the tenth costal arch, that is, the lowest of the fixed ribs — the eleventh being a floating rib, and, moreover, so variable in point of length that it is well to discard it altogether." He is unwilling to adopt the line of the anterior iliac spines, though satisfied that the plane of the highest points of the ileo is too high, and proposes an intermediate one. "Every anatomist," he says, "is familiar with a prominent tubercle which juts out from the outer lip of the crest of the ilium about two inches behind the anterior superior spine. It constitutes the upper extremity of the strong bar of bone which extends upwards in the ilium from the upper part of the acetabulum. . . . As a prominence it is usually better marked on the surface of the body than the anterior superior spine of the ilium."

This statement may be correct if we are to judge only by sight, but we submit that it is possible by touch to place the anterior spines much more accurately. For vertical lines, Professor Cunningham would retain those from the middle of Poupart's ligament.

Professor Anderson has his say in the new anatomy edited by Mr. Morris. Were it not for tradition, he would divide the abdomen into an upper and lower portion by a transverse plane at the level of the umbilicus or (what is practically the same thing) at that of the highest points of the iliac crests, and then by two vertical planes from the middle of Poupart's ligament mark out six regions instead of nine. He seems to feel, however, that this change is too radical, and the course he recommends (taking Quain as a basis) is the converse of Dr. Cunningham's. He would retain the upper plane and change the lower. The former is the lowest point of the cartilaginous border of the thorax, usually the eleventh costal cartilage. He would put the lower plane at the level of the anterior superior iliac spines although this has the fault of passing below the promontory of the pelvis. He would draw his vertical lines along the outer border of the recti. "This," he says, "is easily localized by the lateral intercostal furrow above, and by the pubic spine below; and while reducing the width of the middle zone without interfering materially with existing indications of contents, it leaves an inguinal region that includes the whole of the inguinal canal."

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[2] Hughes: Arch. fur Anat. und Entwicklungs, 1892.

Journal of Anatomy and Physiology, vol. xxvii, January, 1893.

[4] Loc. cit.

Dr. W. Wilberforce Smith[5] writing from a clinical standpoint favors Anderson's first plan of six regions with one important modification, namely, that the vertical lines should be the outer borders of the recti. These lines, he justly remarks, are easily felt and seen, while verticals from the middle of Poupart's ligament are intangible. On the other hand, as Cunningham points out, the borders of the recti are very uncertain guides, depending, not only on the development of muscle, but on other varying conditions. It is well known that the lower parts of these muscles may move outwards in pregnancy or in cases of tumors.

The discussion of this question was taken up at the meeting of the Association of American Anatomists, last December, at Princeton. Dr. Kalloch, of Washington, proposed that the abdomen should be divided into quadrants by a vertical and transverse line meeting at the umbilicus.

Professor Gerrish, of Portland, read a paper which he had prepared while abstaining from reading anything that had been written in the controversy. In fact the paper was begun before he had heard of the controversy at all. Dr. Gerrish proposed that the upper horizontal should be drawn at the level of the lowest point of the inferior margin of the tenth costal cartilages, the lower through the anterior superior spines of the ilium, and that the verticals should be drawn from the middle of Poupart's ligament.

Certainly there does not seem to be much chance of an agreement. If the writer of this Report may venture to give his opinion, it is that the familiar names for these regions should be retained but that they should be used as general terms absolutely devoid of accuracy. The great range of individual variation in length and breadth of the body, in the size and shape of the lower ribs, in that of the pelvis and in its inclination, to say nothing of sexual and pathological peculiarities, makes it impossible to hope for absolute accuracy or for any very near approach to it. On the other hand, the terms have a convenience. If I say in answer to an inquiry that Princeton is south of New York and north of Philadelphia, I make a statement that geographically is incorrect, that to a surveyor would be absolutely false; but which probably tells all that the questioner wanted to know. In the same way thousands have received information when told that some pain, for instance, was in the umbilical region, though, as Cunningham has shown, this region may be reduced to a mathematical line. Let us take these names then for what they are worth and seek accuracy by other methods.

FREQUENCY OF OCCURRENCE OF THE PSOAS PARVUS AND OF THE PYRAMIDALIS.

The frequency of the former of these muscles is given in the report of the Committee of Collective Investigation of the Anatomical Society of Great Britian and Ireland.[6] It shows that 457 bodies were examined and that the muscle was wanting in 270 (59 per cent.), that it was present on both sides in 139 (30 per cent.), on one side in 48 (11 per cent.). It was found only on the right side 27 times against 21 on the left. It was, therefore, more often wanting than present. The sex was stated only in 174 instances. Both muscles were wanting in 54 per cent. of the males, and in 65 per cent. of the females.

The late Professor Gruber had found in the dissecting rooms of St. Petersburg, from a series of 450 bodies that it was present on both sides in 44 per cent., that it was wanting in 40 per cent., and present on one side only in 15.4 per cent. This shows that the psoas parvus is much more common in Russia than in England.

The writer of this Report has published observations made on both sides of 250 bodies (165 male and 85 female) at the Harvard Medical School, with the following result for the psoas parvus.[7]

		Male.		*Female.*		*Both Sexes.*	
Present on both sides		[illegible]	[illegible]	20	[illegible]	80	[illegible]
Present on neither side		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Present on right side only,	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Present on left side only,	[illegible]						
Total		165	[illegible]	85	[illegible]	250	100.0

It will be noticed that these figures, intermediate to the others, approach the English results much more nearly than they do the Russian ones. The writer obtained the following figures, concerning the pyramidalis in the same series of 250 subjects.

		Male.		*Female.*		*Both Sexes.*	
Present on both sides		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Present on neither side		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Present on right side only,	5	15	9.0	[illegible]	[illegible]	[illegible]	8.0
Present on left side only,	10						
Total		165	[illegible]	85	[illegible]	250	100.0

One of the results of this inquiry is to throw some light on the question of the relation of one variation to another. By dividing these two series into groups it was found that in the bodies in which both pyramidales were present the psoas parvus was present on both sides rather more frequently (about three per cent.) than in the whole series; and conversely that in those in which both pyramidales were wanting the number of instances of a psoas parvus on both sides is less than in the entire series, the difference being six and one-half per cent. Thus there seems to be a tendency, though a slight one, for variations by excess and by defect to go together respectively. Some observations with other muscles did not, however, bear out this conclusion.

THE VIENNA SCHOOL.—The report of Winter Semster states that 57 professors and 70 docents were engaged in the University courses: 223 courses of lectures were given to 5,995 students, 2,879 of whom were medical, 2,102 ordinary, and 777 extraordinary.

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[5] Journal of Anatomy and Physiology, January, [illegible].

[6] Journal of Anatomy and Physiology, January, [illegible].

[7] Proceedings of the American Philosophical Society, [illegible].

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, February 13, 1893.

ORAL COMMUNICATION.

DR. S. J. MIXTER: I wish to speak of a case of general peritonitis where I did laparotomy a couple of weeks ago. I report it because it belongs to a class of cases not very common, which, so far as I can learn in the short time I have had to look up the subject, are almost always fatal, no case having yet been reported in which recovery has followed operation. One great point of interest is the question of diagnosis when the patient is first seen. It is possible, of course, that if an operation could be done early enough, the patient might be saved; but the question is always one of diagnosis and of obtaining the consent of the patient and family, and perhaps of the physician, to a very early operation.

The patient was a very strong, healthy, active, young woman of twenty-one. She told me that she never had had a sick day in her life before, and the doctor who had known her and her family very well and had been a near neighbor, told me that he had never known her to be sick. One morning at about ten o'clock she went into the cellar, gave the furnace a shake and then came up stairs. As she reached the head of the stairs, she was seized with terrible pain which she located in the epigastrium. She sent for Dr. —— who gave her morphine subcutaneously. She vomited once. Temperature was normal. Her pulse was not quick; and throughout the day with the exception of the very severe pain which required one or two more subcutaneous injections she had no symptoms. The next day she became somewhat worse. Her temperature was only about 99° through the forenoon, but as I had had one case of perforation of the appendix with general peritonitis in Dr. ——'s practice which had (as do most of these cases) resulted fatally, he telephoned for me, and I went out immediately and operated in the evening, about thirty hours after the first symptom. There was at that time a temperature of about 100° and a pulse of 120. There was nothing to suggest the seat of the perforation or the cause of the peritoneal trouble. There was some distension of the abdomen and a little more resistance in the flanks than elsewhere. An incision was made in the median line, and pus was found between all the folds of the intestine. The pelvis was filled with purulent fluid. The only sign pointing to any one spot as the seat of the primary inflammation was on drawing out the omentum, and here was found a large flake of lymph such as is often seen about the appendix or a perforation, where the peritonitis starts. The condition of the patient was such that it was not considered best to hunt for the source of the trouble. The tip of the appendix only was seen, and that seemed to be normal in appearance, but as the pus was low down in the right flank a second opening was made well down in the loin and a drainage-tube put in. The abdomen was washed out and a tube and gauze placed in the pelvis. The patient lived till the third day. Dr. Brooks went out and changed the dressing both days.

The autopsy was performed by Dr. Whitney the day after death. The condition which was found was a general peritonitis, and at first on opening the abdomen the starting-point could not be seen. Dr. Whitney started at the lower end of the bowel at the rectum and working up through the large and small intestine, finally discovered a hole in the anterior wall of the stomach to which the liver was firmly adherent, and behind that, around the spleen, was a small amount of material evidently from the stomach. That, then, was the starting-point of this peritoneal inflammation, which extended throughout the whole cavity, and the pus, as I have said, was found very largely deep in the pelvis. The specimen shows very nicely the ulcer which caused the perforation — chronic ulcer of the stomach. The only reason that I can see for supposing before death that this was a perforation of the stomach, was the fact of the pain at the very first being in the upper part of the abdomen, but pain is referred to different points in the abdomen, very often at a considerable distance from the site of the original trouble, perforation or whatever it may be. The fact of the constant vomiting and straining in the last day of life being unable to separate the adhesions between the liver and stomach, shows how completely an opening may be closed by adhesive peritonitis in a very short time. Only once was there any vomiting until the last day.

I find that cases of sudden death following perforation of the stomach without premonitory symptoms, are not uncommon. Dr. Councilman tells me that Dr. Formad has reported several cases where people in apparent health have died very suddenly and no diagnosis having been made, perforation of the stomach was found on autopsy, and in these cases there have been no premonitory symptoms. In this case we have a strong, healthy girl with absolutely no symptoms, except that (after her death) her father said he remembered that about ten days before her attack of pain, she said one day that she thought she must have a little indigestion. It was nothing more than one would say after eating anything that disagreed with them, and no importance was attached to it. There was no hæmorrhage, nothing to call attention to the stomach. I also understand that there is no case reported where laparotomy after perforation has been able to save life.

DR. M. H. RICHARDSON read a paper on

LOOSE BODIES IN THE KNEE-JOINT.[1]

DR. MIXTER: I have here a specimen of multiple cartilages in the joint which shows how, perhaps, it is possible for such bodies to escape notice, and may explain the reason of Dr. Richardson's finding a second body in some of his cases. As to the nature of these bodies in the joint, I think it is a fact that these are often neither cartilage nor bone, but fibrous tissue without cartilage cells and simply calcified, having their starting-point in the bone fringes of the joint and not from the cartilage itself. The case is as follows:

L. C., stone-worker, age forty-two, entered Carney Hospital July 29, 1892. Seventeen years ago he slipped and fell, injuring right knee. The joint became enlarged and swollen, and motion was limited. At this time, he says, he felt something moving in the joint. After resting for a month, he was in good condition, and had no further trouble. At times he would feel a catch in the joint, but got along comfortably for fourteen years. Something over two years ago the joint became enlarged, sensitive, etc., and he had pain on motion of the joint. This attack lasted about a month, but since then attacks have been frequent. Examination showed knee enlarged, motion limited, stiffness and crepitus on movement. Large movable bodies were felt within the joint. On August 1, 1892, the knee-joint was opened, and four large loose cartilages, and also a number of small, bead-like bodies attached by pedicles to the capsule, were removed. Discharged, cured, August 19, 1892.

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[1] See page 511 of the Journal.

Dr. M. H. Richardson: I do not think the finger should be introduced into the joint unless it is absolutely necessary. I have seen a number of cases in which there was a small pedicle and the use of the finger was indispensable. But as we cannot boil or bake our fingers as we do our instruments they should not be introduced simply for purposes of exploration. Since the consequences may be so deplorable in faulty methods of exploring joints, I think we must err on the side of excessive care. If the young man referred to by Dr. Mixter went skating at the end of two weeks, I think he ran a great risk. I would keep a man in bed two weeks before I would let him stand at all. If you look up the statistics of opening the knee-joint you find a long list of most lamentable mishaps. Dr. Hodges said to me, several years ago when he sent a friend to the hospital who had been thrown from a carriage and had received a cut into the knee-joint, "When the knee-joint is laid open, you never can tell: the man may be dead in twenty-four hours." So it is necessary to be excessively careful.

Dr. Goldthwait: Were these cartilages examined microscopically?

Dr. Richardson: They were all examined by Dr. Whitney.

Dr. Goldthwait: Were any of them found to be tubercular?

Dr. Richardson: They were not.

Dr. Goldthwait: There was an article published in one of the journals two or three years ago in which the writer claimed they were all tubercular, and I remember that Dr. Whitney rather agreed with that view.

Dr. Richardson: These patients have no tubercular history and they are strong healthy men.

Dr. Mixter: The rice bodies which are found in synovial sheaths are very apt to be tubercular. I have operated on a considerable number of such cases and they have been found to be tubercular. Here is a little specimen which shows how closely a body which from its situation cannot contain cartilage may resemble these bodies in the knee-joint. It is a free lentil-shaped body removed to-day from the præpatellar bursa.

Dr. Richardson: I have operated on many cases of chronic teno-synovitis and have found almost invariably numbers of so-called rice bodies both in the great bursa of the palm and in the bursal dilatation of the tendon of the knee. In almost all cases there has been a local tuberculosis. In such the prognosis is bad, and in almost every case there has been a recurrence. Not only were bursæ found and demonstrated but the gross appearances of the surrounding tissue were distinctly tuberculous. In some cases not only were the tendon sheaths involved, but the tendons at the wrist and the metacarpal bones.

Dr. Goldthwait: In the article to which I referred the writer spoke of that and then he included with it all the loose bodies that occurred in the other joints. He thought they were all tubercular in nature.

Dr. J. P. Clark read a paper on

PAPILLOMA OF THE LARYNX IN ADULTS.

Dr. F. I. Knight: I am sorry to say that I do not remember anything about the case which Dr. Clark says I operated on nine years ago, but he has given a very good history of the ordinary run of a certain class of these cases. Those which are at all sessile in their attachment are very prone to recur, and those, on the other hand, where the attachment is slight or pedunculated do not recur, and you can usually give a favorable prognosis in operating upon them. The tendency in these growths to disappear, in children particularly, should forbid the operation of thyrotomy, which was done a good many times and much too often, in the earlier days of laryngoscopy. In those days when the laryngoscopist found a large growth in a very young child which he could not manipulate through the mouth he called in the surgeon, and the surgeon split the larynx and removed the growth. Two things happened: in the first place, the growth came back almost invariably, and in the second place, the voice was ruined. The modern treatment for a good many years now is to put in the tracheotomy canula, if necessary to relieve respiration, if there is sufficient obstruction to endanger the life of the child, and to wait either until the child is old enough to allow an operation through the mouth or until the growth disappears. A good many of them have disappeared spontaneously. The question of malignancy in these growths or the tendency to become malignant is interesting and important. There was a feeling on the part of a good many practitioners a few years ago that they might be irritated into malignancy by frequent operations with forceps, particularly when those operations were not skilfully done, but the collection of a very large number of cases by Dr. Semon have shown very conclusively that the tendency in these growths to become malignant is very slight. Many practitioners of long experience report no cases, and others very few. I remember only one case in all the growths I have seen and have removed or seen removed, where we felt at all confident in the beginning of the diagnosis of a benign growth, where after frequent removals it did become a well-marked case of epithelioma. That was in a girl sixteen years of age and after several removals during the year between sixteen and seventeen it began to assume a malignant aspect, and she died from it the following year.

The hæmorrhage in Dr. Clark's case is certainly extraordinary. I have never seen a case except that one where there has been anything like a profuse hæmorrhage, and I do not know that I should say that a profuse hæmorrhage in a patient who presented on laryngoscopic examination so little evidence or no evidence of ulceration or no obstructive process in the larynx, pointed to possible malignancy. Where you get hæmorrhage in malignant cases you get some evidence of the ulcerative process going on.

The only thing in addition to the rapid recurrence which might suggest malignancy is, as Dr. Clark says, the tendency to appear rather on the posterior part of the cord. This adds suspicion to the case as does also the extent and the general thickening. I always like to see a cord come out with something like the healthy mucous membrane and with not much thickening, though of course in these cases of years' standing you have oftentimes to wait a long time to secure that.

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[1] See page [illegible] of the Journal.

Dr. G. A. Leland: Papillomata of the larynx have not come under my observation very much either in this country or any other. Not more than six cases come now to mind. I had intended to report a case of intralaryngeal tumor of which I have pretty full notes, but I think it is not quite suitable for report in this connection. Cases of this kind come mostly in hospital practice. I have had one lately at the City Hospital where it required considerable force to remove it with McKenzie's forceps. I was almost afraid to pull as hard as necessary, but finally found that I had the growth itself in the forceps and not any of the cord. I will just mention a case of a small growth in the larynx which does not, strictly speaking, come under the head of papilloma. A lady came into my office the other day with a voice which troubled her a great deal in singing, on account of the production of a different tone from the one she intended to produce. About two years ago in the winter after having sung to excess in a very cold place two or three hours and being "hoarsed up" a little thereby, she was exposed for a considerable time more to cold in walking home. For several days she was exceedingly hoarse, almost aphonic, but the voice gradually recovered itself until she thought for speaking she had a pretty good voice; although even in speaking, when the throat is relaxed, she produces a peculiar squeak. In singing when she comes to soften the tone, to come down in a diminuendo, she suddenly produces the fifth above. On examination was found, about at the junction of the middle and posterior thirds of the right vocal cord, a very small fibrous nodule. At near the end of a diminuendo passage, just as the cords begin to separate, this minute nodule acts to bisect the vocal cord so that, while the posterior third ceases to vibrate, the anterior two-thirds produce the fifth above, acting similarly to the finger on a violin string. The excrescence was so small I could not advise removal unless she was totally unable to overcome its effect by education. It seemed to me if she could train her voice so as to be able to produce the diminuendo by diminishing the force of the air current through the larynx, and only separate the vocal cords after the sound had ceased, that she might get along very well. This was not a papilloma, but a minute fibroma, the cicatrix where there had been an abrasion of the mucous membrane on the edge of the right vocal cord caused by abuse of the voice. It was not larger than a small part of the head of a pin.

Dr. F. C. Cobb: I think the way in which these growths sometimes subside comparatively suddenly is quite interesting. I found a case in a book of Jaratz, of Heidelberg, which struck me as unusual enough to make a short *résumé* of. The case was that of a boy of seven years of age, who had a typical papilloma of the larynx. Obstruction to respiration was so great that a tracheotomy had to be done before attempting endolaryngeal operation. For a period of two years pieces of the growth were removed, but constantly recurred. At the end of this time, in November, 1876, the laryngological examination was as follows: "The false chords are uneven, covered with small projections, the interarytenoid fold with soft white excrescences, while on the edges of the true chords as well as on their surfaces were numerous rough projecting masses. From the commissure to the middle of the glottis hung an irregular mammillated mass of a grayish-white color." Specimens of the growth previously removed had confirmed the diagnosis under the microscope. The voice was rough and hoarse. Immediately following upon this examination the patient fell ill with a typical typhoid fever. Toward the close of this he complained of severe pain in the abdomen and vomited considerable blood, which increased his already well-marked anæmia. During the typhoid he was not examined laryngologically, but two months from its beginning on being asked how he felt he replied, stopping the end of the canula with his finger, in a perfectly *clear voice*, that he was well. Examination of the larynx showed it to be quite normal, with the vocal chords smooth and glistening. Only on the anterior commissure was a small papillomatous mass. This was removed once or twice and its base cauterized, and five years from the date of illness there had been no recurrence. Jaratz assigns no cause for the atrophy of the growth, but it seems to me probable that the great anæmia must have been an important factor in it.

Dr. Knight: I should like to give Dr. Leland a good deal of encouragment that that will disappear spontaneously. I presume it is the little thickening first described by Turck as trachoma, sometimes called "singer's node." I have had some cases in singers where I was in the beginning in despair, knowing that the growth could not be operated on probably without spoiling the voice of the patient, and where one was urged to do something; but I have found in a good number where it was of very recent origin that the complete rest of the voice would cause it to completely disappear so that you could not see the slightest vestige of it. I have had one within a few months where a patient was able to sing just as well as ever after a rest of six weeks, but rest of the voice should be almost complete in both speaking and singing.

One point I meant to have spoken of in connection with these operations on papillomata and that is in regard to the use of cocaine. The use of cocaine has been a tremendous blessing in operations where it is a blessing at all, where, instead of working three or four weeks in order to get the larynx trained so that you could use instruments to any advantage, we can in some cases operate at the first sitting. But I remember one case at the hospital where Dr. Hooper and I repeatedly operated in which the patient was apparently insusceptible to it. We used a ten or twelve-per-cent. solution and there would be at once a tremendous flow of saliva and gagging and choking, and she apparently spit the whole thing up before enough of it could be absorbed to have any effect at all on the reflex which is, of course, what we want. In other cases the reflex is abolished almost at once.

Dr. A. Coolidge, Jr.: I have here a specimen of papilloma, which shows very well the cauliflower appearance. The largest piece, about three-eighths of an inch in diameter, was removed the first time I went down into the larynx with the McKenzie forceps, and half of the remainder was removed at the same sitting, but it took at least ten more sittings to get out the remaining quarter. The first large piece came away very easily and the tumor was friable, but near to its attachment it was very much harder not only to seize but to take away after it was seized. The amount of anæsthesia which it is possible to get with cocaine in the larynx, varies in different cases, but the effect of cocaine in abolishing the reflex varies very much more. And as the ease in removing a papilloma depends largely upon the amount of reflex gagging present, it is impossible to predict how much time will be necessary in clearing the larynx. In regard to the advantages of the McKenzie and Schrötter forceps, it always seemed to me that the latter, although more effective where it can be watched continuously, is a much more savage instrument. The McKenzie forceps are less liable to seize normal tissue and one is better able to judge how firmly it is grasping.

Dr. Clark: The fact that these growths were all sessile accords with their tendency to recur. As Dr. Knight says, after the removal of growths with small pedicles one can give a prognosis of future immunity as a rule.

Dr. Knight: I think Dr. Clark has not got on exhibition here the best form of tube forceps. He has got the common form where the forceps on closing withdraws from the growth. If you get down on a pin or any growth you have got to make a compensatory move forward or else you lose it. I think where the tube is made to push over the forceps and so close them is a much better instrument. For many years I have had mine made in that way.

Dr. Clark showed a specimen of two tonsils he removed recently. They were interesting on account of their size. The patient was a man twenty-three years of age. He had had these tonsils since he was twelve. The hæmorrhage was slight on removal. After they had been in alcohol nearly two weeks they measured: one, one and seven-sixteenths inches in length, the other, one and one-fourth; both, one and one-eighth inches broad, and both a little over one-half inch in thickness.

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Recent Literature.

A Manual of the Operations of Surgery. For the use of Senior Students, House Surgeons and Junior Practitioners. By Joseph Bell, M.D., F.R.C.S. (Edin.), Consulting Surgeon to the Royal Infirmary, etc. Seventh Edition, revised and enlarged; 360 pages; 42 illustrations; four plates. Edinburgh: Oliver & Boyd. 1892.

The book is a guide in the study of operative technique. It treats of the typical operations, namely, ligation of arteries, amputations, excisions, trephining, tracheotomy, larynx operations, œsophogotomy and amputation of the female breast. A chapter is devoted to operations on the eye; another to plastic work, including hare-lip and cleft palate. The remainder of the work describes the more common typical operations of the pelvis and abdomen, tenotomies and nerve surgery.

The book is published in a neat, convenient form, and is an interesting work. It is fairly complete, most of the surgical procedures now used being included in the list. The criticism must be made, however, that the descriptions are at times so abridged that they give no hint as to the manner in which the operations are to be performed, except in the most general way. It would have been an improvement if the writer had not attempted to cover so large a field and had written a book which would be what its title leads one to expect, namely, a full and satisfactory description of the more common operations.

Leprosy. — A case of Asiatic leprosy has been reported at Fort Wayne, Ind. The patient is a Syrian woman.

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PURULENT PLEURISIES.

Twenty-five years ago the text-books spoke of purulent pleurisy, now we read of *purulent pleurisies.* Then the operation of pleurotomy was regarded by many of the best authorities as "one of the most disastrous in surgery" (Chassaignac), and even tapping for empyema was performed "with fear and trembling" in many parts of the civilized world. Now, thoracotomy is of daily performance in hospitals and in private practice everywhere, and in bad cases, surgeons fearlessly exsect parts of several ribs on the affected side.

It is now considered as quite important in a given case to differentiate the kind of microörganism which is the cause of the empyema, as this will give help both as to prognosis and treatment.

There is one kind of purulent pleurisy caused by the *pneumococcus.* Netter has found this microörganism in 53 out of 121 cases (43.75 per cent.). Pneumococcus-pleurisy may succeed an attack of pneumonia ("metapneumonic purulent pleurisy"), or it may be primary, occurring apart from any previous appreciable attack. There is reason to believe that in comparatively rare instances the pneumococcus may traverse the lung to the pleura without irritating or inflaming the lung. With regard to the more common or *metapneumonic* variety, it may be remarked that the pleura is often simultaneously involved in a case of lobar pneumonia, and so frequent are the inflammatory alterations of this membrane, that Andral employs systematically the expression of *pleuro-pneumonia* to denominate ordinary pneumonia.[1] The pleuritic exudate ordinarily disappears when the pneumonia undergoes resolution. In many cases, however, the pleurisy does not appear until several days after the defervescence which has marked the end of the pneumonia (Netter). The explanation is "that there are deposited in the pleural cavity in the course of the pneumonia a certain number of germs whose virulence is only temporarily suspended at the moment of the defervescence which marks the end of the career of the pneumococcus in the pneumonic focus." This virulence is fanned into new activity at the end of several days, and the microorganisms which pullulate in this serosa "have acquired a longer vitality and pyogenic power."

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[1] Netter, Traité de Médecine [illegible]

The presence of the pneumococcus in abundance can be detected in the pus when the specimen has been stained by gentian violet: the pus is of a "laudable" character.

A peculiarity of this kind of pleurisy is that it may get well spontaneously, whether by reason of the resorption of the effusion, or after the formation of one or more vomicæ communicating with the lung. Purulent pneumococcus pleurisy is probably the only kind which may end in recovery, and often does get well, after a single tapping or aspiration. Netter has observed four cases which have recovered after a single aspiration, and he has collected thirty-two similar cases from different sources. It would seem, then, that in pneumococcus pleurisy we have to do with pathogenic agents of little vitality, and whose duration is short. Therefore this form may be regarded as relatively mild, in which active surgical intervention is not so necessary as in the other varieties. Nevertheless, even here, it is regarded as not best to trust to temporizing and merely medical means. In children, one or two aspirations may be followed by rapid recovery, but in patients of any age, if, after a reasonable number of antiseptic aspirations there is not marked improvement, it is better to resort to the incision in the eighth or ninth interspace. Pneumococcus-purulent pleurisy gives more brilliant results from antiseptic pleurotomy than any of the other varieties — on this the best authorities are agreed. Cases are extremely numerous [2] of patients who have been completely cured in less than three weeks of a pneumococcus-pleurisy after the incision of the pleura alone, without any subsequent washings of the thoracic cavity.

If the pneumococcus variety is the most benign, *streptococcus purulent pleurisy* is the most common. Netter's statistics show that in eliminating the tuberculous and putrid forms, sixty per cent. of empyemata are due to the streptococcus pyogenes.

This pleurisy is generally secondary to some infectious disease, being brought in the blood, in the lymphatics, or being communicated by contiguity: thus, it may accompany erysipelas and puerperal septicæmia; it may follow influenza, scarlet fever, typhoid fever, even tuberculosis, as a secondary infection. It may spread from a streptococcus peritonitis, pneumonia, or broncho-pneumonia.

Streptococcus pleurisy has neither the rapidity of evolution of pneumococcus — empyema, nor the chronicity of primary tuberculous pleurisy. It is characterized by a high fever *with* great and irregular oscillations (the typical fever of suppuration), and by the incessant reproduction of the effusion which almost never yields to simple punctures.[3] The fever is preceded or attended by chills and profuse sweats: it falls markedly after aspiration or thoracentesis. The quantity of pus is seldom greater than three quarts in the adult, or less than a pint. The pus is soon reproduced after tapping; the tendency to resorption or to evacuation by the skin or bronchi is nil. Encystment is also very rare.

Although this is, perhaps, the most violent form of purulent pleurisy (septic, infectious pleurisy of some writers), the diagnosis cannot be made certain without an examination of the pus. The appearance of little chains after staining with gentian violet is quite peculiar. The behavior of this streptococcus in the various culture media is very characteristic. The *fern-leaf* appearance of the growth in test-tubes of gelose has been especially indicated by bacteriologists.

The treatment should be energetic and thorough. Nothing short of a free incision with antiseptic irrigations and the most complete drainage will ensure recovery. The point of election, according to Netter, should be the posterior region of the thorax, in the eighth interspace, just under the bend of the eighth rib. Several large drainage-tubes should be inserted. There is general unanimity among foreign authorities as to the necessity of a first antiseptic lavage, and that the preference should be given to corrosive sublimate, as most certain to destroy the pus-microbes *in situ*: as to whether the irrigation shall be repeated, the physician must decide by the state of the temperature of the patient, and the character of the pus that flows from the chest.

The German surgical authorities still seem to favor sub periostical resection of one or several ribs (see Löbker, third edition, p. 444), and doubtless in many obstinate, and especially chronic cases, this method should be adopted, for weighty reasons. Such an operation is, however, a formidable one, and will hardly be attempted except by accomplished surgeons and in the large hospitals.

The two varieties of purulent pleurisy which we have above considered are the most frequent, and the most important. The encapsulated bacillus of Friedländer has been found in a few cases, and may be looked upon as a rare cause of purulent pleurisy. The typhoid bacillus, according to Debove, has also been met as the sole agent of suppuration in pleuritic effusion. Staphylococci frequently exist in purulent effusion of the pleura, but it is extremely rare that they exist alone. The cases where the staphylococci have been found associated with other microörganisms are, on the contrary, extremely numerous. They are generally mingled with the streptococcus, the bacillus tuberculosis, and the microörganisms of putrefaction.

Always, according to the authorities whom we have cited, staphylococcus-pleurisies should be treated according to the same rules of early and thorough operative intervention as streptococcus empyema.

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[2] Debove and Courtois-Suffit: Traitement des Pleurisies purulentes, p. 155.

[3] Debove and Courtois-Suffit, Loc. cit.

The clinical history of purulent pleurisies has made conspicuously prominent one danger which cannot be too much guarded against by the most careful antiseptic precautions: a benign case of pneumococcus-pleurisy may be converted into a grave streptococcus-pleurisy by the introduction of the germs from without during an operation for drainage, or during the subsequent care of the case.

Putrid pleurisies are caused by the introduction into the pleural cavity of the microbes of putrefaction. It is only within about twenty years that these pleurisies have been studied from a scientific standpoint. In 1875, Baucquoi sought to prove that they have for constant origin a superficial cortical, pulmonary gangrene. It has been found of late that this view is a little too absolute. The saprogenous agents may come from divers parts of the digestive tube, the œsophagus, stomach, intestine. Gangrenous pleurisy sometimes complicates cancer of the neighboring organs, abscesses of the liver, spleen, kidney, etc. Putrid pleurisy demands early and thorough intervention: a very free incision, and antiseptic irrigation are indispensable, during and after the operation and on subsequent days.

There is a form of purulent pleurisy that is *uniquely and exclusively tuberculous*, when Koch's bacillus localizes itself in the pleura, sojourns there, producing characteristic granulations on the surface of the serosa, and finally a purulent effusion, "the consequence of successive softening of the products of new formation." This variety is essentially chronic. The patient has the history and the aspect of a tuberculous subject. Paracentesis often gives issue to an enormous quantity of fluid, which is generally sero-purulent, rather than laudable pus. The general condition of the patient then improves, but repeated tappings are necessitated. The ordinary curative treatment of empyema is inefficacious. Netter, followed by Debove and Courtois-Suffit would treat these cases by repeated tappings or aspirations, and would be very chary of antiseptic injections, believing that any kind of treatment can be only palliative. It is certain that neither the simple incision of the thoracic wall, nor Estlander's operation have ever been followed by good results.

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PERIODS OF INCUBATION AND INFECTIVITY IN INFECTIOUS DISEASES.

In 1889, a Committee of the London Clinical Society, of which Dr. Broadbent was President, issued a circular letter with a view to eliciting information in regard to the periods of incubation and contagiousness in certain infectious diseases. The numerous replies obtained were tabulated and carefully considered, and the information thus obtained was controlled and supplemented by a study of the reports made by its medical inspectors to the medical department of the Local Government Board since the year 1878. The results of the whole of this work, much of which was done by Dr. Dawson Williams, one of the honorary secretaries of the committee, is set forth in an interesting and valuable report presented to the Clinical Society at a recent meeting (April 28th), and which is issued as a supplementary report to the twenty-fifth volume of the Society's Transactions.

The diseases considered are diphtheria, scarlet fever, measles, rubeola (rötheln), variola, varicella, mumps, epidemic influenza and typhoid fever.

The system upon which these summaries are prepared has been to take first those cases in which the exposure to the source of infection was for a short time — a few minutes or hours — at a known date. These have been made "the basis of the conclusions drawn as to the duration of incubation, while other histories, in which only the date of the commencement or cessation of exposure to a source of infection was given, have been used for contributory evidence." The duration of infectiousness is also investigated by the light of the data supplied and the length of time which a patient who has suffered from the disease should be isolated, the period during which a susceptible person exposed to infection should be quarantined, the liability to the retention of infection in clothes, and to its dissemination by milk and water are also considered.

In regard to Diphtheria, there were sixty communications, detailing 87 separate cases. In 27 cases, the exposure to infection was for a short period on a single occasion, and practically in all of these the period of incubation was seven days or less; in 63 cases the period was four days or less. Combining with these 75 other cases, the general conclusion is reached that the incubation period of diphtheria does not, as a rule, exceed four days and is more often two days; not seldom it may be five, six, or seven days, but it is doubtful if it ever exceeds seven days. Personal intercourse was affirmed as the source of infection in the great majority of cases. The generally accepted opinion is reaffirmed, that infection may take place, in the incubative stage, during the developed attack, or for a period of long but uncertain, and probably varying, duration after apparent recovery.

The conclusions in regard to Scarlet Fever are based upon 140 cases and many reports of epidemics. It is stated that the incubation period is usually between twenty-four and seventy-two hours; it is occasionally less than the shorter time, and frequently more than the longer limit. It is very doubtful whether it is ever extended to eight days. When conveyed in milk the period of infection is probably, as a rule, short — two days or less. Infection persists from the onset of symptoms as long as there is any desquamation. If the conclusions in regard to the period of infection are correct, it results that a "quarantine" of seven days is sufficient for a person who has been exposed.

Measles. — Fourteen days is reaffirmed as the usual period between exposure and the appearance of the rash. The primary or catarrhal stage is variable. In rare cases the interval may be as short as seven days; and intervals of sixteen, seventeen and eighteen days probably occur occasionally. Measles may be infectious, not only through the primary stage and throughout the acute attack, but also after convalescence has been well established.

The incubation period of RUBEOLA is thought to vary from six days to three weeks. Infectivity extends from two or three days before the rash appears through the time the rash is out, and then diminishes rapidly.

The incubation period of SMALL-POX is commonly twelve days. The "quarantine" period ought to be fifteen days. It is much more infectious during the height of the active stage of the disease than during the initial illness.

The incubation period of VARICELLA seems to be a little longer than that of variola.

The incubation period of MUMPS is more nearly three weeks than two. The chance of infection diminishes progressively from the onset of the parotitis, and has ceased in two weeks probably, and in three weeks almost certainly; it is very infectious during the prodromal stage, which is of uncertain duration, and may last as long as four days. Since a person who is about to suffer from mumps is not infectious until at most four days before the parotitis appears, it is possible, by quarantining a person first seen ten days after his exposure to infection, to ensure that he shall not infect others; further, since the incubation period is most commonly nineteen to twenty-one days, and is sometimes twenty-five days, it is worth while to quarantine a person who has been exposed to infection a fortnight or even three weeks earlier.

EPIDEMIC INFLUENZA. — The incubation period varies from one day to four or five days. A patient may convey infection throughout the whole course of the disease and even after convalescence has been well established.

TYPHOID FEVER. — The conclusions as to the incubation period are founded on only 70 cases and various reports of epidemics. In 14 cases the infection was traceable to a single short exposure to the liability to infection; in 15 other cases the evidence showed that the period of incubation must have been less than fourteen days. The period of incubation in typhoid fever may vary within rather wide limits. The interval between exposure to infection and the development of distinct symptoms is probably most often twelve to fourteen days; it is not very infrequently nine or ten days, occasionally eight and possibly even less. . . . In rare cases it is prolonged to fifteen, eighteen, or even twenty-three days.

A case of ENTERIC FEVER remains infective throughout the whole course of the disease, from the date of the earliest symptoms of illness until convalescence has been established for at least a fortnight. Evidence is offered that infection can be conveyed by fomites, and retained in them at least two months. The conditions under which the infection is conveyed by water and by milk are discussed. An epidemic due to contamination of milk may be expected to cease at or about the end of the second week after the arrest of the contaminated supply. An epidemic due to contamination of a public supply from large reservoirs is found to come to an end, as far as the occurrence of new cases is concerned, as a rule not later than the fourth week after the source of specific pollution has ceased. An epidemic due to infected well water may continue for a much longer period after the pollution has ceased, if the use of the well be continued.

All careful contributions to this subject, such as those from which we quote seem to be, are valuable to the hygienist and to the practitioner and of service both to preventive and curative medicine.

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ADVISORY MEDICAL INSPECTORS.

A BILL providing for the appointment of Advisory Medical Inspectors of Health throughout the Commonwealth of Massachusetts will come up for action before the Legislature next week. The bill has been favorably reported upon by the Committee on Public Health, and unfavorably reported on by the Finance Committee.

The bill provides that the Governor shall nominate such advisory medical inspectors for the districts into which the State shall be divided. These inspectors shall hold office for seven years, shall reside in their districts, and have advisory powers and duties only. They shall inform themselves respecting all influences affecting or threatening to affect injuriously the public health within their districts, and shall promptly notify the local authorities of the existence of all conditions affecting or likely to affect the health of their districts, and shall advise with the authorities as to the best methods of controlling these. They shall keep records and shall annually make a report to the health authorities of each city or town within their districts touching matters affecting the cities and towns, and shall transmit a copy of each report to the State Board of Health annually. They shall from time to time, as requested, furnish to the State Board of Health information touching the sanitary condition of the whole or any part of their districts. They may make such reports and suggestions to the State Board of Health or to the local authorities as they may deem advisable; but shall in every instance forward to the State Board a copy of any such communication with the local authorities.

The number of districts would probably be about forty, and the necessary appropriation about $40,000.

We think the objects and the provisions of this bill are excellent, and hope the Legislature will not fail to give the State the benefits which would undoubtedly result from its passage. The appropriation involved is insignificant compared to the cost of an active epidemic of an infectious disease in a single city or large town.

We notice that the State has spent, without a murmur, some $270,000 the past year to protect its citizens' interests from the comparatively harmless Egyptian moth. Is $40,000 too much for protection against filth and infectious diseases, especially in a cholera season? This question the Legislature must decide, and the responsibility of the decision must rest with those who vote on it.

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MEDICAL NOTES.

Influenza. — Slight local outbreaks of influenza are still reported from different localities in Great Britain, Italy and other countries.

The Surgeon-General of the Navy. — Surgeon-General J. Mills Browne reached the age of retirement on the 11th. The president has promoted Medical Inspector J. Rufus Tryon to the position of Surgeon-General of the Navy. He was born in New York, and entered the Medical Corps of the Navy in 1863. In 1865 he was ordered to the naval hospital in Boston. He later served on different squadrons and in different stations. He was not next in seniority in the department. It has been rumored that the president would make no appointments to the heads of staff corps or bureaus in the army and the navy, except of officers who had at least four years remaining of service on the active list. Whether or not this accounts for Dr. Tryon's promotion, his fitness for the place is conceded.

Kundrat and Schnitzler. — The medical faculty of Vienna have recently lost two of their most distinguished members. Hans Kundrat, Professor of Pathology, died of apoplexy on April 25th. He was born at Vienna in 1845. While he was yet a student he was Demonstrator under Hyrtl and Rokitansky. On taking his doctor's degree, in 1868, he was at once chosen by Rokitansky as his assistant. In 1873 he qualified as *Privat docent*, and in 1875 he was promoted to be Extraordinary Professor. In 1877 he was called to the Chair of Pathology at Graz. That post he held for five years, when he was appointed to the Chair of Pathology at Vienna, which he continued to hold till his death. He was for many years Chief Secretary of the Imperial Royal Medical Society, of which he was one of the leading spirits. He was a conscientious teacher and a most laborious worker, having conducted some 70,000 *post-mortem* examinations. He has left in manuscript a catalogue of his own pathological museum, which contains a very large amount of most instructive material. Professor Schnitzler was one of the foremost of modern laryngologists, who had done much to advance the science of the subject to which he had devoted his life. He was founder of the *Wiener Medicinische Presse* and of a medical school, extra-mural to the University, in which he never became a full professor.

NEW ENGLAND.

Boston City Garbage. — A special committee have reported at length to the city government on the question of the disposal of garbage. They show that the delivery of the garbage of the city proper, South Boston and Roxbury at one central station aggregates about 170 tons per day. The committee are of the opinion that this large quantity can be handled and treated in a better sanitary manner by the utilization process than by the cremation process, while at other stations, where ten to twenty tons per day are delivered, the cremation process can be operated with good sanitary results.

Centenarians. — Two deaths have recently been reported in this vicinity of persons over one hundred years of age: one, a man, at Brimfield, Mass, had lived in that town for forty-seven years, and died at the age of one hundred and three.

NEW YORK.

Four Years' Course at the College of Physicians and Surgeons. — The Board of Trustees of the College of Physicians and Surgeons have determined to extend the course of instruction from three to four years, and under the new system more extended facilities for laboratory and clinical work will be afforded.

Escape from an Infectious Ward. — A little romance has occurred at the Willard Parker Hospital for contagious diseases. A young woman, twenty-two years of age, who had been under treatment there for scarlet fever, escaped at midnight out of the window by means of a rope, which she fastened to the bed-post. The rope, it seems, was thrown to her from the street, in the absence of the nurse, by her *fiancé*, who had been much exercised over her being sent to the hospital at all. Fortunately, the patient was practically well, and it is said that she would have been discharged within a day or two.

Cerebro-Spinal Meningitis. — For the past four weeks cerebro-spinal meningitis has been unusually prevalent, and during the week ending May 13th twenty-three deaths were reported from it. In the week ending May 20th, however, the deaths from it were five less. The mortality from pneumonia, which has been so exceptionally large during the spring, is slowly diminishing, although the number of deaths from it last week, 134, is still 16 above the average for the corresponding week during the past five years.

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Miscellany.

DISINFECTION BY THE NEW YORK BOARD OF HEALTH.

On May 18th, Dr. H. M. Biggs, pathologist to the Health Department, read a paper before the New York Academy of Medicine on "The Organization and Equipment of the Division of Disinfection of the Board of Health." He explained what had been accomplished in the pathological, bacteriological and experimental sections of the Division, and mentioned in detail the measures pursued in the work of disinfection. A complete system is now in operation, with strict rules for all the employés; and the building in Bleecker Street, where much of the disinfection and laboratory work is done is in good working condition. Not the least important advance, he said, was the plan to determine by bacteriological tests the true nature of cases of disease, notably diphtheria, where so many supposed cases, lacking the characteristic bacillus, are isolated, and oftentimes subjected to the virulent type in the hospital. He also described what was being done in determining the germicidal value of different gases, the methods of procedure at houses where contagious diseases are discovered, the details at the new quarters of the Division, and the manner in which the city is districted and covered by the force. Since the first of the year more than sixteen thousand pieces have been disinfected.

The discussion of the paper was opened by Dr. A. Jacobi, who thought that there should be more disinfecting stations in the tenement districts, and that the Board of Health should have a more complete control over the hotels, where cases of contagious diseases frequently occurred. He spoke of the almost utter impossibility of securing satisfactory disinfection in tenements, where so many families were crowded together in one house, and advocated the establishment of refuges for the well children when diseases occurred in them. Dr. J. D. Bryant believed that the one thing most needed was a place where the sick from the better classes could be taken and properly cared for. The President, Dr. Roosa, said that in his opinion, in addition to all the other wise things advocated, some accommodation should be provided for those suffering from contagious ophthalmia. At present there was none.

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CONSTIPATION.

Fleiner, in the *Berliner klinische Wochenschrift*, January 16th, divides constipation into atonic and spastic.[1] The former is due to insufficient peristalsis. It is seen in young people owing to sedentary occupations, and in old people as the result of the general atrophy in which the intestine shares. Dietetic measures, mild laxatives, water enemata, massage of the abdomen, gymnastic exercises, and especially faradization of the abdomen, usually suffice. Almost complete paralysis of portions of the gut or catarrh of the large intestine with mucus in the stools may be superadded. The stools are usually dry and firm, and are made up of large-sized cylindrical masses or of scybala. The abdomen is distended, symmetrically or not according to the condition of the colon. This form may also occur in children and in girls about puberty. Spastic constipation, on the other hand, occurs in the neurasthenic, the hypochondriacal, and in women with uterine disease. Parts of the intestine contract and hinder the onward movement of fæces. It occurs in lead poisoning, and sometimes even as a result of contraction of the sphincter without fissure. The stools are made up of cylindrical masses of small calibre, and small rounded masses of fæces may be present. The constant appearance of small scybala is in favor of spastic constipation. The presence of malignant disease must be excluded by examination. Spastic constipation may be accompanied by irritable catarrh. Massage is harmful. Warm clysters, hyoscyamus, and belladonna may be useful. The value of opium is well known in lead colic. Large oil enemata are most useful; 400 to 500 c. c. of warmed oil should be slowly (fifteen to twenty minutes) siphoned into the rectum, the patient being on his back with raised pelvis. The nozzle of the tube should be olive shaped. High introduction is unnecessary as long as the sphincter is intact. The return of the enema may not occur for a few hours. A part of the oil may be absorbed in softening the fæces. If the intestine is full of fæces, the enema should be repeated on successive days. When the stool becomes bile-stained the full effect of the oil is obtained. If there are very uncomfortable sensations after the injection, defæcation can be brought about by a small water enema. If symptoms of irritation are produced, the quality of the oil should be looked to.

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THERAPEUTIC NOTES.

The Disinfection of City Sewage by means of Lime. — The practical employment of lime for the disinfection of sewage, as recommended by Pfuhl, is as follows:[1] In order to render free from danger fresh sewage that may contain the organisms of typhoid fever or Asiatic cholera, it is necessary that lime be added to the sewage in the proportion of at least one to one thousand. In this proportion disinfection is complete in from one hour to one hour and a half. It is necessary that during the addition of the lime the sewage be kept in motion, so that there will be a homogeneous distribution of the lime throughout it, for it has been shown by experiment that, in sewage not so stirred, lime may be added often to the extent of three to one thousand, and yet living typhoid bacilli may be detected after two hours, a condition evidently due to the restriction of the activity of the lime to and immediately about the point in the still sewage at which it was deposited. In practice it is further to be observed that the disinfectant activity of the lime is frequently interfered with through the presence of precipitating substances, such, for example, as the salts of sulphuric acid. It is also necessary that the lime should be of the best quality and freshly burned, so that, in calculating the amount necessary for a given volume of sewage, only pure calcium hydrate will come into the computation.

The Surgical Treatment of Cholera. — Five cases have up to the present time been published in which cholera was treated surgically. M. Lambotte operated upon two patients last autumn. The abdomen was opened in the middle line, and the bowel sewn to the wound, incised and flushed out with a solution of corrosive sublimate (1 in 3000) by means of an india-rubber tube one metre long. Both patients died. A Russian physician, M. Meerovitch of Ekaterinodar, operated upon three patients last August. Only a small puncture was made into the bowel, which was not stitched to the wound. From 2000 to 3000 grammes of a solution of tannic acid were injected in two of the cases and 4000 grammes of a solution of thymol in the third. In all three cases there was a fleeting improvement in the symptoms, but all the patients died.

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[1] British Medical Journal.

[1] International Medical Magazine.

METEOROLOGICAL RECORD,

For the week ending May 13, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...7	30.10	48	55	41	[illegible]	[illegible]	[illegible]	N.	E.	8	5	C.	O.	
M...8	[illegible]	52	[illegible]	[illegible]	59	[illegible]	[illegible]	N.W.	S.E.	6	12	C.	C.	
T...9	30.28	[illegible]	[illegible]	44	[illegible]	[illegible]	[illegible]	S.W.	S.	2	14	F.	C.	
W..10	30.19	66	82	50	55	[illegible]	46	W.	W.	8	12	O.	F.	
T..11	30.16	68	76	[illegible]	57	41	[illegible]	W.	S.	4	11	C.	C.	
F..12	29.98	68	77	58	[illegible]	77	[illegible]	S.W.	S.	6	9	C.	C.	
S..13	[illegible]	49	53	45	94	[illegible]	94	N.E.	N.E.	24	[illegible]	R.	R.	[illegible]
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 13, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Cerebro-Spin. Meningitis.
New York	1,827,396	949	[illegible]	15.62	21.78	[illegible]	[illegible]	3.08
Chicago	1,250,000	—	—	—	—	—	—	—
Philadelphia	1,092,168	482	150	13.26	20.80	1.04	6.50	.26
Brooklyn	[illegible]	—	—	—	—	—	—	—
St. Louis	477,873	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	62	9.36	24.18	1.95	2.73	.39
Baltimore	[illegible]	—	—	—	—	—	—	—
Cincinnati	[illegible]	112	46	8.01	29.37	—	3.56	—
Cleveland	[illegible]	79	15	8.89	—	—	[illegible]	[illegible]
Pittsburg	[illegible]	105	53	[illegible]	19.00	3.80	[illegible]	—
Milwaukee	[illegible]	80	[illegible]	[illegible]	8.75	8.75	3.75	—
Washington	[illegible]	[illegible]	[illegible]	12.32	20.02	2.31	2.31	2.31
Nashville	87,754	32	9	9.39	9.39	6.26		
Charleston	[illegible]	38	13	28.93	13.15	18.41	2.63	2.63
Portland	40,000	17	5	—	35.28	—	—	—
Worcester	92,313	32	13	9.39	18.78	—	6.26	—
Lowell	[illegible]	48	19	14.56	18.72	4.16	—	2.08
Fall River	[illegible]	32	17	12.52	[illegible]	3.13	—	—
Cambridge	74,644	33	9	9.09	27.27	—	3.03	—
Lynn	[illegible]	21	4	9.52	28.56	—	—	4.76
Springfield	47,052	19	7	—	[illegible]	—	—	—
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	[illegible]	15	3	13.33	20.00	—	—	—
Holyoke	40,099	15	6	20.00	20.00	—	—	13.33
Brockton	32,783	9	5	11.11	—	—	11.11	—
Salem	31,495	12	5	—	16.66	—	—	—
Haverhill	[illegible]	15	0	—	20.00	—	—	—
Chelsea	29,479	[illegible]	0	—	[illegible]	—	—	—
Malden	27,252	8	1	[illegible]	12.50	—	—	—
Newton	[illegible]	—	—	—	—	—	—	—
Taunton	26,464	13	2	—	15.38	—	—	—
Gloucester	26,008	7	[illegible]	—	—	—	—	—
Fitchburg	25,444	12	[illegible]	16.66	8.33	—	8.33	—
Waltham	20,942	7	1	—	42.84	—	—	—
Quincy	18,669	[illegible]				—	—	—
Pittsfield	[illegible]	4	0	—	[illegible]	—	—	—
Northampton	15,684	8	[illegible]	—	25.00	—	—	—
Everett	14,745	7	2	—	—	—	—	—
Newburyport	14,031	16	2	—	6.25	—	—	—
Amesbury	13,561	2	1	—	—	—	—	—

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) [illegible], acute lung diseases 521, consumption 332, diphtheria and croup 101, diarrhœal diseases 50, cerebro-spinal meningitis 40, typhoid fever 38, scarlet fever 34, measles 31, whooping-cough 28, erysipelas 14, small-pox 3, malarial fever 2.

From typhoid fever Philadelphia 10, New York 8, Pittsburgh 7, Washington 4, Boston 3, Milwaukee 2, Cincinnati, Lowell, Lynn and Holyoke 1 each. From scarlet fever New York [illegible], Boston and Pittsburgh 4 each, Philadelphia 2, Milwaukee, Fall River, Cambridge and Malden 1 each. From measles Pittsburgh and New York 7, Cincinnati and Philadelphia 3 each, Boston 2, Washington, Lowell, Cambridge, Somerville, New Bedford, Fitchburg, Woburn and Brookline 1 each. From whooping-cough New York 12, [illegible] each, Cincinnati, Cleveland, Charleston, Worcester and Lowell 1 each. From erysipelas New York, Philadelphia, [illegible] Washington and Fall River 2 each, Cleveland, Lowell, Somerville and New Bedford 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of [illegible], for the week ending May 6th, the death-rate was [illegible]. Deaths reported [illegible]: acute diseases of the respiratory organs (London) 349, measles 103, whooping-cough 94, diphtheria 79, diarrhœa 55, scarlet fever 51, fever 37, small-pox (London 11, Bradford 4, Birmingham and Oldham 2 each, Nottingham, Liverpool, Manchester and Burnley 1 each) 23.

The death-rates ranged from 13.9 in Derby to 29.0 in Burnley; Birmingham 21.5, Bradford 20.5, Bristol 20.4, Croydon 15.3, Gateshead 20.1, Hull 15.5, Leeds 21.2, Leicester 14.5, Liverpool 23.3, London 19.1, Manchester 27.8, Newcastle-on-Tyne 21.7, Nottingham 16.5, Portsmouth 15.6, Sheffield 23.9, Sunderland 19.8, Swansea 15.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 13, 1893, TO MAY 19, 1893.

The leave of absence on surgeon's certificate of disability granted Captain William G. Spencer, assistant surgeon, U. S. A., is extended four months on account of disability.

Captain James C. Worthington, assistant surgeon, ordered to report in person to Colonel Charles T. Alexander, assistant surgeon-general, president of the examining board, appointed to meet at New York City, N. Y., at such time as he may be required by the board for examination as to his fitness for promotion.

Leave of absence for one month, on surgeon's certificate of disability, is granted Major Samuel M. Horton, surgeon, San Diego Barracks, Cal.

Captain Blair D. Taylor, assistant surgeon, will report in person to Lieut.-Colonel Dallas Bache, deputy surgeon-general, president of the examining board, convened at Omaha, Neb., at such time as he may be required by the board for examination as to his fitness for promotion.

PROMOTION.

Major Johnson V. D. Middleton, surgeon, to be deputy surgeon-general, with the rank of Lieut.-Colonel, May 8, 1893.

CASUALTY.

Lieut.-Colonel Ely McClellan, deputy surgeon-general, died May 8, 1893, at Chicago, Ill.

APPOINTMENTS.

To be assistant surgeons with the rank of First-Lieutenants, May 12, 1893. Alexander N. Stark, of Virginia; Charles Lynch, of New York; John S. Kulp, of Pennsylvania; Edward L. Munson, of Connecticut; Charles E. B. Flagg, of South Carolina; James M. Kennedy, of South Carolina; Guy C. M. Godfrey, of Ohio; William F. Lewis, of North Carolina.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 20, 1893.

E. H. Marsteller, passed assistant surgeon, detached from Naval Academy and to the Practice-ship "Constellation."

S. H. Griffiths, passed assistant surgeon, detached from Practice-ship "Constellation" and granted four months' leave.

S. G. Evans, assistant surgeon, detached from the U. S. S. "Monongahela" and granted two months' leave.

Henry LaMotte, assistant surgeon, ordered to the Practice-ship "Constellation."

D. Bloodgood and H. M. Wells, medical directors, ordered as delegates to the American Medical Association at Milwaukee, Wis.

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Twelfth Anniversary.

The annual meeting will be held at 9 o'clock A. M., Wednesday, June 14, 1893, in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

Meetings of Sections will be held in the same place on the preceding day, Tuesday, June 13th.

Tuesday, June 13th.

The Hospitals. — At 10 A. M., the Fellows of the Society are invited to visit the Massachusetts General Hospital on Blossom Street; the Boston City Hospital on Harrison Avenue; the

Children's Hospital on Huntington Avenue; and the Carney Hospital, South Boston.

Section in Medicine, Russell Hall, 2 P. M. — Dr. J. C. White, of Boston, Chairman; Dr. R. W. Greenleaf, of Boston, Secretary. "The Influence of College Life on Health." By Drs. Grace A. Preston, of Northampton; Edwin Farnnam, of Cambridge; W. M. Conant, R. W. Greenleaf, of Boston. Discussion by Drs. H. P. Walton, S. W. Driver, J. L. Hildreth, of Cambridge; C. H. Cook, of Natick. "The Treatment of Pneumonia." By Dr. F. C. Shattuck, of Boston. Discussion by Drs. William Osler, of Baltimore Md.; G. K. Sabine, of Brookline.

Section in Surgery, Banquet Hall, 2 P. M. – Dr. C. B. Porter, of Boston, Chairman; Dr. C. L. Scudder, of Boston, Secretary. "How Should the General Practitioner Deal with Strangulated Hernia?" By Dr. A. G. Gerster, of New York City. Discussion by several Fellows of the Society.

There will be no session of the Section in Obstetrics and Gynecology.

Shattuck Lecture, Cotillon Hall, 8 P. M. "Tuberculous Pleurisy." By William Osler, M.D., of Baltimore, Md.

COUNCILLORS' MEETINGS.

The Annual Meeting, at 11 o'clock, A. M., Tuesday, June 13, 1893; stated meetings on Wednesday, October 4, 1893, and on Wednesday, February 7, 1894, at the Medical Library, No. 19 Boylston Place, Boston.

EXHIBIT.

The Bacteriological Department of the Harvard Medical School will give an exhibit of cultures of various bacteria, together with demonstrations by the microscope, at the Medical School, on Boylston Street, from 2 to 4 P. M. Tuesday, and until 12 M. Wednesday.

There will be an exhibit of surgical appliances, etc., at Mechanics' Building.

The Disinfecting Station of the Boston Board of Health on Swett Street, near Chester Park, will be open to Fellows of the Society during Tuesday and Wednesday.

WEDNESDAY, JUNE 14TH.

Annual Meeting, Cotillon Hall, 9 A. M. — "A Consideration of Erysipelas Occurring during the Puerperium." By Dr. C. W. Galloupe, of Boston. "Demonstration of Modern Methods and Instruments in Genito-Urinary Surgery." By Dr. Paul Thorndike, of Boston. "Diphtheria and other Membranous Affections of the Throat." By Dr. F. H. Williams, of Boston. Discussion by Dr. W. T. Councilman, of Boston.

Introduction of delegates.

The Annual Discourse, 12 M. – By J. T. G. Nichols, M.D., of Cambridge.

The Annual Dinner, 1 P. M. — At the close of the discourse the annual dinner will be served.

J. C. WHITE, M.D., *President.*
DR. E. J. FORSTER, *Treasurer*,
440 West Chester Park, Boston.
DR. F. W. GOSS, *Recording Secretary*,
217 Warren Street, Roxbury.

APPOINTMENTS.

At a meeting of the Board of Directors of the New York Post-Graduate Medical School, held May 17, 1893, A. PALMER DUDLEY, M.D., was elected Professor of Diseases of Women; GEORGE M. EDEBOHLS, M.D., Professor of Diseases of Women, and GEORGE T. ELLIOT, M.D., Professor of Diseases of the Skin. J. WEST ROOSEVELT, M.D., has resigned his position as Professor of Clinical Medicine.

RECENT DEATHS.

CHARLES H. PINNEY, M.D., of Derby, Conn., died May 16th, aged sixty-two years. He graduated from the College of Physicians and Surgeons, New York, in 1853, and since then has practised in Derby.

GEORGE CHANDLER, M.D., of Worcester, died May 17th, aged eighty-seven years. He graduated from the medical department of Yale University in 1831. He was for some years connected with the Worcester Insane Asylum either as assistant or superintendent, resigning in 1856. He served in the war and later in the city government and in the legislature.

GEORGE W. SNOW, M.D., M.M.S.S., of Newburyport, died May 21st, aged fifty-eight years. He graduated from Jefferson Medical College in 1859, and entered the army. From May, 1864, until the close of the war, he was surgeon in charge of all the hospitals of the Ninth Army Corps. He went to Newburyport in 1866. He was several years secretary and two years president of the Essex North Medical Society, and has been medical examiner in the district for many years.

ARNALDO CANTANI, M.D., Professor of Clinical Medicine in the University of Naples, died May 1st, aged fifty-six years. He had attained a world-wide reputation from his pathological writings and from his method of treating cholera by injection of fluids.

HANS KUNDRAT, M.D., Professer of Pathological Anatomy in the University of Vienna, died April 27th, aged forty-nine years. For the past twenty-seven years he had been connected with the Pathological Institute at Vienna.

J. SCHNITZLER, M.D., Professor_Extraordinary of Internal Medicine and Laryngology at the University of Vienna, died May 4th, aged fifty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Malpractice. By Clark Bell, Esq. Reprint. 1892.

New York State Reformatory at Elmira. Seventeenth Year-Book. 1892.

How to Operate for Hemorrhoids. By Charles B. Kelsey, M.D. Reprint. 1893.

Malpractice. Privileged Communications. By Clark Bell, Esq. Reprints. 1893.

Pocket Dose Book. Compiled by John Edwin Rhodes, A.M., M.D. Chicago, Ill.: Sharp & Smith. 1893.

Transactions of the John Guitéras Medical Society of Undergraduates; University of Pennsylvania. 1893.

Idiopathic Muscular Atrophy. Chronic Meningo-Myelitis. By J. T. Eskridge, M.D., Denver, Colo. Reprints. 1893.

The Present State of the Medical Profession in Australia, Tasmania and New Zealand. By Ludwig Bruck. Reprint. 1893.

The Recrudescence of Leprosy and its Causation. A Popular Treatise. By William Tebb. London: Swan, Sonnenschein & Co. 1893.

Preparation of the City of Brooklyn for the Anticipated Epidemic of Cholera in 1884 and 1885. By Joseph H. Raymond, M.D. Reprint. 1892.

Transactions of the Fourteenth Annual Meeting of the American Laryngological Association, held in Boston, June, 1892. New York: D. Appleton & Co. 1893.

A Treatise, Practical and Theoretic on Cancers and the Cancer Process. By Herbert Snow, M D., Surgeon to the Cancer Hospital. London: J. & A. Churchill. 1893.

The Treatment of the Nasal Catarrhs. A Study of Two Cases of Paroxysmal Sneezing, with the Treatment. By William T. Cathell, M.D., Baltimore, Md. Reprints. 1890.

On Some Fallacies Inherent to the Parasitic Theories of the Etiology of Carcinoma. A Study of Seventeen Cases of Empyema. By James P. Warbasse, M.D., of Brooklyn. Reprints. 1893.

Vertebrate Embryology, a Text-book for Students and Practitioners. By A. Milnes Marshall, M.D., D.Sc., F.R.S., Professor in Victoria and Owens College, etc. New York: G. P. Putnam's Sons. 1893.

A Remarkable Respiration Record in Infantile Pneumonia. Acute Enlargement of the Thyroid Gland; Angio-Neurotic Œdema. By William A. Edwards, M.D., San Diego, Cal. Reprints. 1892.

Points of Similarity Between Us and Homœopathic Physicians. The Annual Address of the President of the Philadelphia County Medical Society for 1892. By John B. Roberts, A.M., M.D. Reprint. 1893.

State Board of Health of Pennsylvania. Circulars 34–38. The Treatment of the Apparently Drowned or Suffocated. Prevention of Blindness. Sanitary Protective Associations. Emergency Hospitals. Care of the Eyes.

The Ability of the State to Prevent an Epidemic of Cholera. Responsibility of the National and State Governments for the Protection of the Purity of the Water-Supplies. By Benjamin Lee, M.D., of Philadelphia. Reprints. 1892.

On the Relation of Eczema to Disturbances of the Nervous System. Clinical Study and Analysis of 1,000 Cases of Psoriasis. The Internal Treatment of Lupus Erythematosus with Phosphorus. By L. Duncan Bulkley, A.M., M.D. Reprints. 1891–3.

A Clinical Study of Puerperal Peritonitis A Clinical Contribution to the Subject of Symphysiotomy. The Relative Value of Certain Obstetrical Operations (Embryotomy, Cæsarean Section, Symphysiotomy). By Egbert H. Grandin, M.D., New York. Reprints. 1893.

Diseases of the Rectum and Anus, their Pathology, Diagnosis and Treatment. By Chas. B. Kelsey, A.M., M.D., Professor of Diseases of the Rectum at the New York Post-Graduate Medical School and Hospital, etc. Fourth edition. New York: William Wood & Co. 1893.

Lecture.

LECTURES ON SURGERY.

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

VIII.

SPECIAL FRACTURES.

Fracture of the Nose. — Displacement in this fracture is usually only in one direction, and that is backwards and downwards.

The nose is made of two structures, partly bony and partly cartilaginous, supported by a centre piece which is partly bony and partly cartilaginous. Where the cartilages are fastened on to the bone, occasionally separation takes place, and the nose drops, or becomes twisted on one side, that is, the cartilaginous portion of the nose. This, of course, is a separation and not a fracture. It is very difficult of correction. It is notoriously hard to make cartilage repair. It is also very difficult to make it readhere to bone with its original strength and in its former position; and the depression of cartilage separating it from the bone is much more unsatisfactory to treat than the injury of the bone itself.

An external splint moulded on with gutta percha, or light plaster, with the cartilage pressed up in place is the best, and is about all, we can do. A steel pin has been occasionally passed through from side to side, pinning the cartilage up into place. This practically, I suppose, is harmless. The pin can be withdrawn after a few days, and is not likely to do anything more than make a slight ulceration.

The fractures of the bone itself are almost always driven down and inwards towards the nasal cavities. They unite very promptly, so that any treatment to be of use must be early. Union takes place quite solidly within seven days.

Obviously the indication is to try to press the bone up into place from the inside. We are instructed to try to do this with the female catheter, or some instrument of that shape. A female catheter, however, is too large for insertion into the upper nasal fossa, and a director covered over with a piece of rubber tubing forms the best sort of lever to force the fragments out. With the aid of that, and the fingers on the outside, the bone can be easily moulded into place, and if it stays there, it speedily unites. Of course, after the pressure is withdrawn, the patient may have some slight coughing or sneezing, and be liable to throw the fragment out of place. Some have thought a support could be put inside the nose to hold the bone in place. A plug cannot be tolerated there long; and, if used, should be of some antiseptic material like gauze, and changed once in twelve to twenty-four hours, because it becomes very offensive. An internasal tubular splint of hard rubber, or gutta-percha, is also used.

The danger in doing too much to the fragment of so delicate a bone is, that if we press it and handle it too much, apply too much pressure inside and outside, we may lead to necrosis; and that, if we lead to necrosis, the piece of bone is eventually discharged into the nose. It is not replaced. It gives rise to a more disastrous deformity and gaping of the parts than if it had remained a little crooked. It is to be borne in mind that a good many of the fractures of the bones on account of the nearness to the surface are compound outside. They are almost invariably compound inside, as evidenced by the nose-bleed.

The trouble with the injuries that are compound outside through the skin is that they may lead to abscess or necrosis, with a sinus. If a sinus exists afterwards, leading into the nasal passage, it is constantly kept open by the passing through of the air, and makes a disagreeable whistling sound, and is a serious deformity. Some slight plastic operation can be done to make the skin heal over the gap, but the bone itself cannot be restored. The pin can be used, just as it was in the cartilage to hold the bone up in place. The splint of gutta-percha or plaster or wax moulded on from the outside is also, sometimes, very useful. If possible, the parts should be thoroughly washed and irrigated with boracic solution (four per cent.), the bone gently pressed up into place from within the nostril; and if it will stay in place, and there is no external wound, the best treatment probably is to put nothing on it, but confine the patient to the house, for fear he may catch cold and be sneezing and coughing.

Any displacement can be corrected in the first five or six days. After that, union takes place in a false position. These injuries of the nose are not serious, but are a source of great anxiety to the patient, and a slight tip one way or the other is a lasting deformity.

Sometimes the septum of the cartilage, or a portion of the bone, or both, are so broken and displaced that, after they reunite, one of the nasal passages becomes narrowed and obstructed. This is a source of great trouble and annoyance, leading to uneasy, distressed breathing and the accumulation of mucus and deposition of secretions behind the obstruction, followed by a chronic ozæna, which is very offensive and difficult to cure. In those cases an operation should be done inside the nose. The septum may be drilled or partly cut off; the turbinated bones may be partially removed; and some measure must be taken by which the calibre of that side of the nasal passage shall be approximately restored, in order to get the patient well.

Fracture of the Malar Bone. — The malar bone is sometimes broken by a direct blow, usually by a fall. The patient falls violently, perhaps, and happens to strike directly upon this buttress upon some sharp angle, like the edge of a step, or something of that kind. A blow coming exactly in the right direction upon this bone, which is very much exposed, is liable to break it. When it is displaced, it can be only displaced downwards and inwards. It may encroach on the temporal fossa and sometimes on the orbit. When it encroaches seriously on the temporal fossa, it interferes with the perfect play of the temporal muscles, leads to partial stiffness, fibrous anchylosis, etc. A more serious trouble, however, is when it is displaced so as to press into the orbit, in which case it sometimes protrudes the eye, destroys the exact axis of vision, leads to quite serious deformity, and, of course, a lasting deformity, unless it is relieved.

Now the majority of these cases of fracture of the malar bone are simple fractures. Most of them are very slightly displaced; and if they are so, if they do not encroach on the temporal fossa or upon the orbit seriously, it is questionable whether it is wise to do anything at all to try to restore the fragment to its normal position. Unless the depression is very great,

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[1] [illegible] part of the regular course.

the subsequent deformity will be but slight. If, on the other hand, the temporal fossa or orbital fossa is seriously encroached upon, then, although the fracture of the malar bone is simple, it demands some radical treatment to get the bone back into place. There is nothing we can get hold of. There is no way to get it back into place, except by making a compound opening and prying it up into position. This can be done by making an opening below the malar bone, or by using a gimlet. This measure is practicable and proper in cases of marked depression; but in the simpler cases, without any compound opening and without any very great depression, it is probably as well to let the parts alone.

When the fracture involves the external orbital plate, it is somewhat more conspicuous, and therefore it can be easier manipulated and pressed up in place than where the bulk of the fat of the cheek lies over and around the bone.

Fracture of the Upper Jaw. — Fractures of the upper jaw occur usually in consequence of direct blows with timbers, or bricks, or stones, or from a railroad accident. They are always compound into the mouth and nose. They may also be compound through the skin, and they may not. The position of displacement is always downwards and backwards; inasmuch as the blow is received somewhere upon the upper jaw, it gives way usually across the nasal process and just below the antrum, below the zygoma, and this fragment is driven back and down into the nose and throat. Occasionally double fracture occurs, that is, a blow is received in such a way that the arch is broken entirely across below the malar bone, depressing both superior maxillary bones backwards towards the nose and throat.

Double fracture of the upper jaw is an extremely serious injury, and in about sixteen per cent. of the cases, or perhaps more, is followed by a fatal result. Single fracture of the upper jaw is almost always recovered from. The reasons of the fatality are hæmorrhage, erysipelas, which is very apt to supervene, and septic absorption, which is also quite apt to occur on account of the numerous spaces which are open and broken into, and the collection of foul secretions which may take place, and thence their absorption from lymphatics or veins followed by septic symptoms. Abscess, with caries and necrosis, is also a quite common sequence.

Now, the superior maxillary bone is a very light bone. It is built out into certain strong bridges where it holds the teeth, where it joins the nose; but it contains the antrum. It is a porous open bone; it contains a very delicate process called the palate process, which extends back over the upper part of the mouth. When it is broken, it is very apt to be chipped into a good many fragments, so it is almost always a comminuted fracture of the more delicate part of the bone.

Intimately attached to, and lined as it is everywhere, with mucous membrane, very many of these comminuted fissures and breaks become compound and bleed largely from the mucous membrane, and are also somewhat difficult of repair and replacement. The teeth also are liable to become loosened and displaced. It is rather a wise caution not to attempt to draw any tooth which is at all firm in this fracture, inasmuch as we usually render the fracture a great deal more complete and disastrous in the effort to extract the tooth. The teeth should be carefully pressed back into the sockets, and we should make an endeavor to restore the parts to place.

Another important point is this, that no fragment which appears to be quite loose and comminuted should be removed. A mosaic almost of fragments of the upper jaw will reunite and form a very respectable roof of bone, because these bones are very thin, and so intimately connected with the mucous membrane and the vessels on both sides, that it is difficult to destroy their vitality. If we pick away the fragments, we shall usually break the mosaic, and make a deformity which is not necessary.

Do not try to draw teeth which are firm. Do not pick away loose fragments.

How shall the jaw be retained in place? Fortunately, we have in the lower jaw the natural splint to adjust the part. Bandage that firmly against the upper. Where there is a large lacerated wound across the front of the lip and below the nose, leading down to the fractured surface, then we have a very good opportunity, if necessary, to drill and wire at some point, and hold the bone very firm; but unless there is a compound opening, it is not always wise to make a wound, and usually the splint of the lower jaw will prove sufficient. This is certainly true of fracture of one superior maxillary bone. In fracture of both superior maxillary bones, it may be necessary to wire the parts.

In these cases an enormous amount of tumefaction and distress occurs. The patient is constantly choking and gurgling, and endeavors to expectorate, swallows secretions, loses a good deal of blood, collects a great deal of foul matter as the days go on, and is nourished with difficulty. They are hard cases to nurse and take care of. They must be fed with great care. They can be fed sometimes by means of a teaspoon, sometimes by means of a tube or soft catheter through the nose, whereby the fluid can flow down through the pharynx to the stomach.

The external parts of the face must be carefully watched, and every source of irritation removed. Tight bandaging is to be avoided on account of the chance of œdema terminating in abscess, or an erysipelatous inflammation being set up.

The single fractures usually do well. The double fractures are usually serious.

Only extreme violence can give rise to this injury. In ordinary blows received from the fist, the upper jaw rarely gets the force of the blow. It is more apt to light upon the lower jaw or the malar bone. The upper jaw is almost invariably broken by accidents received from steam power, from rapid locomotion or from a fall from buildings, falling from a height — something of that kind.

Fracture of the Lower Jaw. — The lower jaw is much more frequently broken than the upper. It usually gives way at the symphysis. The next place of weakness in breaking is opposite the inferior dental foramen. That would bring the line of break down between the bicuspid teeth. That is a favorite place. The symphysis first; then a point opposite the mental foramen; and, lastly, the ramus or the junction of the ramus and body.

It must be obvious that the easiest case to treat is fracture at the symphysis. But little displacement takes place, also, because a double set of muscles attached into either half of the bone are pulling equally, and there is not much to draw the fragments out of place.

If the teeth remain sound, a wire can be passed across them and twisted; and usually that is sufficient to restore the contour of the parts.

The fracture through the mental foramen is liable to a good deal more of displacement, because we have attached to one of the fragments all the hyoid group of muscles, and to the other fragment the pulling action of the masseters and the rotating action of the pterygoids.

When we come to the junction of the ramus and body, the case is a great deal worse; and the action of the external pterygoid muscle, which pulls across, is such as to twist the ramus far away from contact with the body of the bone.

Fracture of the symphysis easy to treat; fracture at the mental foramen moderately hard; fracture at the ramus extremely hard to avoid deformity.

All these fractures are compound in the mouth. They break through the gum, through the alveolus, communicate with the mouth, do not necessarily communicate through the skin with the external air. They are compound in rather a worse place than if outside, because it is very difficult to keep the parts clean.

Crepitus can be got. Deformity is always present to a certain degree; and, if it is not marked, it may be recognized by looking carefully at the line of teeth, and seeing whether they match, closing the jaw against the upper jaw, and seeing whether the natural lines of divisions between the teeth are central, or whether those on the lower jaw are drawn a little to one side of the true line. Then by lateral deformity judged in that way, or vertical deformity, we can always recognize the presence of displacement and fracture, and on moving the jaw we can get crepitus; so that I should say it would be difficult to overlook a fracture of the lower jaw provided any one made even a very moderate examination.

It is easily diagnosticated. Unfortunately, it is not so easily treated. Its powers of repair are very great; and the lower jaw unites (with none, or but slight, provisional callus) in fourteen to twenty-one days; most of them in fifteen to sixteen days, quite firmly, in spite of the compound connection into the mouth.

The disasters that may follow this injury are quite numerous: displacement, loss of teeth, imperfect restoration of the line of the jaw, so that the patient never afterwards can make the teeth meet evenly, so that they meet on one side of the mouth, and do not meet but leave a gap between the teeth, on the other side. Abscess, caries and necrosis are quite common sequences of fracture of the lower jaw.

Rarely we find fracture of the lower jaw double; that is, we find two breaks, usually on the same side, but a separate fragment of the bone broken in two places.

We must be very much on our guard in treating these cases to be sure that a displaced tooth has not got dropped in and lodged between the fragments. This has occurred and been overlooked many times, and is an efficient prevention of any union, the tooth lying as a foreign body, preventing apposition and union, and provoking caries of the jaw and discharge of the tooth. You must count the teeth and look around carefully to see if the fragments are clean and no foreign substances lodged between, and press them in place and hold them there. If the patient has a good set of teeth, we can wire across with a silver wire, and draw the bone pretty thoroughly together. This, with the aid of setting the jaw against the upper jaw, and bandaging from the outside, is sometimes sufficient. A more efficient mode is to take a cast of the lower jaw and teeth with hot gutta-percha, which will set firmly in place. In that way there may be constructed what is called the interdental splint, which fits over all the teeth, and, if accurately applied and allowed to cool while the jaw is held in place, is a perfect splint. In addition to this, it is easy to mould a piece of gutta-percha on the outside to make an external splint, and between these two, with a bandage, the fragments can be held in place.

Some have gone farther, and drilled and wired together the two splints, the internal and external splint of gutta-percha, so that the parts should be held together. That, however, usually is not necessary. It is difficult to feed the patient with this splint on. They must be fed with a tube through the corner of the mouth or through the nose. We have the consolation of knowing that, if we can hold the parts in place for a fortnight, we are pretty sure of union, and the confinement of the patient need not be so very long.

There do occur cases where it is impossible to hold the fragments together. Then, rather than that the patient should grow up with a crooked and misplaced jaw, and the chance of non-union, it is wiser to make a compound opening on the outside, to scrape bare the bone on each side of the fracture for a little space, drill and wire, and draw the bone firmly in contact. This leads to perfect and bony union. It is followed by slight caries around the site of the wire-holes, and after union has taken place, and we desire to remove the wires, they will invariably be found loose, the bone will have given way through the hole that has been drilled, the wire will be playing backward and forward although the twist is still on it. There is practically no difficulty in pushing back the granulations and untwisting and drawing out the wire after union has taken place. About four weeks should be allowed for this. I have had some experience in wiring the jaw, after making sections of it for various operations, and I have invariably found good union to result at the end of about four weeks. Then you find the wires loose, and easily withdraw them, and healing of the wire-holes usually is not very long delayed.

Mild cases can be treated by wiring the teeth. More severe cases with the interdental splint and external splint. Severe cases, if necessary, by wiring the bone itself, but that is rarely necessary. Bandages holding the lower jaw firmly in contact with the upper are indispensable, and the patient must be fed, and the parts kept as clean as possible.

It is surprising, in a foul cavity like the mouth, how rapidly and safely repair takes place in many cases without the occurrence of any septic consequences that are at all serious.

Fracture of the Hyoid Bone. — Once in a while the hyoid bone gets broken. It can hardly be broken unless in a violent struggle, when it is broken by the hand in clutching the throat, or something of that kind.

The patient feels a good deal of pain and distress in swallowing; the hyoid bone giving attachment to so many of the muscles which move the jaw and throat, that the resulting distress is a good deal.

It cannot be held in place perhaps, but it can be replaced with the finger in the mouth far down in the throat and the hand manipulating outside; and that is the best that can be done.

It is not a serious injury.

Fracture of the Thyroid Cartilages of the Larynx. — Fracture of the thyroid cartilages of the larynx is produced in the same way by violence directly inflicted, usually by the hand, occasionally by the patient being run over by some light vehicle, by a light wagon, for instance, which passes across the neck and breaks and depresses one of the thyroid cartilages.

This injury is usually not compound; and it is to be diagnosticated by taking hold of the larynx and rubbing it from side to side, and feeling the mobility of one part as compared with the other, by a sort of click and rubbing like a crepitus, and a rapid occurrence in the larynx of œdema and hoarseness. It may lead to such œdema of the glottis as occasionally to destroy life. If, then, there is an undoubted fracture of the larynx with hoarseness coming on, it is sometimes wiser to do a preliminary tracheotomy and retain the trachea tube a few days, while repair can take place. If the displacement is not easily held in place, it is proper to make an incision, drill and wire the two thyroid cartilages, and treat it as a fractured bone with a wire passed through it. This will hold it in place. Union will occur. The trachea tube avoids the danger of suffocation by œdema of the glottis.

Unfortunately, it is not so safe and successful to wire cartilages as it is to wire bone. Cartilage does not tolerate that sort of interference so well. Cartilage is a poorly nourished structure, ulcerates easily, and very frequently the wires that are passed through give rise to slight suppuration and some ulceration of the parts. They should not, therefore, be left in too long. They should be carefully watched, and in a fortnight withdrawn, union having taken place.

I perhaps should have said a word more about fracture of the lower jaw at the ramus. This is excessively difficult to treat, and unless we cut down upon the parts, and wire the fragments together, it is practically impossible ever to get them into perfect contact.

This cutting down and wiring the parts here is a much more serious operation than doing it elsewhere. We have got to go through important muscles, and the parotid gland and its vessels, and there is a good deal more chance of abscess, than in front. Consequently, wiring of the ramus is not to be adopted except in the extreme case.

What happens if the parts do not get in perfect contact? Practically, that there is overriding and displacement; there is almost invariably union. The displacement is due to the twist of the pterygoids, the other fragment being drawn violently upwards and backwards by the action of the masseter muscle. The temporal pulls the upper fragment out of reach, the external pterygoid twists it into the mouth, and, meanwhile, the lower fragment is drawn backwards and upwards by the masseter.

Fracture of the Sternum. — The sternum is usually described as being made up of three pieces: manubrium or handle, a body, and a xiphoid or ensiform cartilage. The junction of the upper piece, manubrium, and the body is always opposite the insertion of the second rib; the second rib is inserted into this notch. Many cases which are considered fracture of the sternum are separation at that joint. That is the place where the injury usually occurs, opposite the second rib. Extreme violence may fracture it across the body, in the middle, of course. Separation and bending of the xiphoid cartilage may occur in consequence of a violent and peculiar blow received on it, either by the fist or falling on some hard substance, and occurs at the junction of the lower piece with the body.

Now, fractures of the sternum are rare, fortunately. They occur in consequence of the caving-in of a bank of earth; once in a while in wrestling and struggling by the pressure of the weight of the knee on the breastbone; occasionally by contre-coup. Such an instance occurred to me once, where the patient was frescoing the top of a church and lying in a sling. The rope gave way; he fell and broke the scapula and some of the ribs, and broke the sternum by the transmitted force, apparently.

In very feeble old people it is well known that a sort of fatty degeneration of the bones of the thorax takes place, and spontaneous fracture of a rib from coughing is occasionally an actual occurrence; so also, it is said, that sometimes the sternum has been broken in a violent fit of coughing; but at the best the accident is rare.

The displacement is of the lower fragment backwards and inwards, with the upper fragment overriding it, as a rule. The bone is so superficial that the deformity can be traced as a marked line. The bone rides up into place with a snap which gives crepitus when the patient breathes, and then drops down again.

The consequences of the accident are described as sometimes serious. I have never seen any serious consequence myself, but one can conceive of it. The mediastinum and pericardium are in direct relation with the sternum; and inflammation may be set up inside and behind the bone, resulting either in mediastinal abscess, pericarditis, or limited pleurisy.

The diagnosis is not difficult.

The treatment is difficult; for it is hard to see how we can get hold of this bone and spring it back into place. Usually the patient sets the bone himself, and if he is laid on the back with the shoulders thrown back and arms held, and encouraged to make two or three strong inspiratory efforts, he generally brings the broken fragment up into place. When this does not occur and the depression is considerable, it is important to bring it back into place; and this can be done with comparative safety by making a small opening over the fragment, putting in a gimlet or drill and pulling the bone up into place, and closing the wound and letting it heal.

The only fracture of the sternum so-called, which gives rise to severe and immediate symptoms, is the separation of the ensiform or xiphoid cartilage below, which occasionally gets bent-in in such a way as to compress the diaphragm, and give rise to very painful spasm and distress in breathing, pressure on the solar plexus, etc.

In that case we are hastily to cut down and pull the bone back into place, if necessary.

I do not know that any particular treatment would be of use in the subsequent care of the fractured sternum except to apply perhaps a light thoracic belt, which can be laced around the body, the patient forced to lie in bed a week or ten days, kept quiet on the back, and kept from turning or moving. Opiates probably would be a great addition to prevent the chance of sneezing or coughing or rapid breathing.

Union takes place promptly; and I believe such a thing as non-union is practically unknown.

Fracture of the Clavicle. — The collar-bone is very frequently broken. It is a buttress, holds the arm off.

It is the only thing that connects the arm by bone with the thorax.

Blows received on the shoulder are transmitted along the collar-bone and are liable to break it; so that a fall on the shoulder in a young child is almost always followed by fractured clavicle; and a direct blow on the clavicle is a ready means of breaking it, because it is so exposed. It is, however, a very strong bone. If you have ever had occasion to saw it, you know how strong it is. It possesses great power of repair. It will mend without treatment; it will mend rapidly with treatment, — and union takes place in from one to three weeks. It will mend in little children and babes without any treatment at all, not always without displacement and deformity, however. Usually where the bone is broken near its middle, the full width of the shoulder as compared with the other side is not perfectly restored. The patient is always a little more narrow on this side than on the other. Those whom I have questioned, and the common opinion seems to be also, that the strong and laboring man who uses his arm with vigor after the break is solid, has as much strength as ever, and does not miss the quarter-inch or more of loss of width.

Now the collar-bone is tied down at the two ends by a strong ligament, here to the first rib and there to the coracoid process. Fractures which take place at either end, within the fibres of these ligaments, are not accompanied by displacement; no deformity is produced. Crepitus can only be elicited by taking the arm and manipulating it around so as to move the centre of the collar-bone.

Obviously no treatment is required in such case except to keep the parts still. They cannot be much displaced, but you do not want them turned about by the motions of the arm; so you put the arm in a sling, and perhaps a light bandage on, and hold it still. The fragments are held in place, and union promptly occurs.

In little children with broken collar-bone without treatment, union will take place in ten days, as a rule; and in babies it takes place in a week. In the adult it takes about three weeks.

When we come to the junction of the outer third with the inner two-thirds, that is the favorite seat of fracture; and there the majority of the cases of break occur. Displacement there is extreme. The weight of the shoulder pulls the outer end down, so that it droops down and in towards the thorax; meanwhile the attachment of the sterno-mastoid pulls the other fragment up, and they are always shot by each other to a very marked degree. Meanwhile, the position of the patient is quite characteristic and peculiar. The shoulder droops, drops in so that it is less wide; and the patient instinctively supports his arm and elbow to give freedom from the pain.

The obvious indications of treatment are to try to get the parts together into their natural position by raising the shoulder, pressing it upwards and drawing the elbow back, putting a pad in the axilla, forcing it backwards and upwards, and having the elbow well confined to hold the parts in place. Without apparatus the bone can be restored to place, and will stay there if the patient is put in a certain position. That position is lying directly on the back without much of a pillow, the shoulders flat on the bed, the elbow bent, and the arm fastened to the side. In that way the fragment will fall into very good position and stay there without apparatus, as long as the patient avoids lifting the head, or turning. In this way most of the deformity from this injury can be avoided; but in all ordinary cases of fracture of the collar-bone at this point the subsequent deformity is something, and a perfect outline of the collar-bone after a fracture there is almost unknown; so that the patient should be made to understand that the shoulder will be a little narrower, that there will be a slight bunch at the seat of the fracture, but that the arm will be as useful and strong as ever.

In the case of young females, where it is very desirable that the perfect contour of the neck shall be restored, if they will submit to a fortnight's confinement on the back, it will give a better result than anything else, and diminish the amount of subsequent bunching up and deformity in the outline of the neck.

This fracture in children unites in all sorts of ways, with and without treatment. They always have deformity, a bunch; but, as a rule, as the child grows up this callus diminishes, rounds off, absorbs, disappears, and the child shows very little deformity after it reaches adult life. Not so the fractures that occur in people who have passed the age of fifteen or sixteen years. In them the deformity is permanent.

Cases occur, rarely, in which disastrous results are said to have followed the occurrence of great deformity from there being set up about the part a tendency to form osteophytes upon the under surface, which press upon the vein, and give rise to subsequent pain, œdema and paralysis. Such cases are not very common, but they have occurred; and it is well to remember them in order that, if such a case should occur, we could assure the patient it could not be the fault of the physician, but one of those vagaries of nature that we have no means of controlling.

In little children fracture of the collar-bone can be perfectly treated by merely confining the arm to the side. In the baby the body and arm can very well be sewed up in a pillow case. In the older child the double bandage can be applied; but when we come to the period of twelve or fifteen or beyond, where deformity and overlapping is considerable, we have got to put on a more complicated apparatus, if the patient is going to walk about. The axillary pad is very important to lift the shoulder and to restore the width; then draw back the collar-bone, push back the arm and hold the elbow back towards the loins.

This is accomplished in a great many ways. Fox's apparatus is perhaps as comfortable as any. Dr. Sayre introduced a treatment by strips of plaster. The Velpeau bandage sometimes does pretty well. Strapping the elbow back is an important assistance. Nothing can be done, so far as I have observed, by pressure on the collar-bone itself. You do not want any pressure on the outer fragment, you want to keep that up; and the only way you could overcome the tendency to displacement of the inner fragment would be to divide the clavicular belly of the sterno-mastoid muscle. That is not to be thought of except in extreme cases where no other means would avail.

This bone generally breaks at the junction of its outer third and its middle third. The fragments always overlap. The inner fragment rides upwards and backwards. The shoulder droops. The width of the shoulder is permanently diminished afterwards. Union takes place promptly; always with deformity. The amount of deformity may be regulated a good deal by care, by apparatus, by the amount of confinement that the patient will endure. The subsequent utility of the arm is about as good as ever. If the fracture occurs at a young age, deformity will be smoothed off and melt away. If it occurs at an older age, it is permanent.

Fracture of the Scapula. — The scapula may be broken across the infraspinous fossa, may be broken at the acromion process (that is a very common place), may be broken rarely at the coracoid process; and, it is said, may be occasionally broken at the neck, by the neck meaning the constricted part, behind the glenoid cavity where the head of the humerus rests.

The common fracture is across the lower part of the bone, usually inflicted by direct violence, as a blow or fall upon the back; generally it is broken in an oblique direction, and the deformity is considerable on account of the varied attachment of the scapular muscles. Strap with plaster, and confine the arm to the side, about four weeks. Fracture of the acromion is treated by raising the elbow and forearm, and confining the arm to the side.

The coracoid process is the next in order of frequency. If you remember the extreme strength and the various attachments of the ligaments which fasten the collar-bone and the acromion and the coracoid, and which are inelastic firm masses of fibres, you see when the coracoid process gets accidentally broken there can be but very little displacement. The ligaments would probably resist more violence than the bone itself. As a rule, the reason why a fracture of the coracoid process is notoriously rather hard to detect is the fact that it is not drawn much out of place, and is so situated that it cannot very well make any deformity. You do not see anything of the broken coracoid until you hunt for it and find it, except possibly a bruise. You examine over the tops of the two shoulders and try every manipulation of the arm, and test for every point, as the collar-bone, acromion, humerus, etc., and still you are conscious that there is a crepitus somewhere, but you cannot locate it; and finally you find it in the coracoid process; and once having found it, you can reduce it quite readily. It being not much displaced, there is not much setting of the bone to be done.

The only treatment is to prevent motion. The muscles which are attached are the pectoralis minor and the coraco-brachialis. To put a pad in the axilla would be poor treatment, for it would press up the fibres of the coraco brachialis and probably displace the fragments. In order to relax the parts as much as possible, put it into the Velpeau position or bandage, in which the hand is put on the opposite shoulder.

It is a long treatment — four to six weeks. It is slow to join. If it is not recognized and treated, it remains ununited and gives rise to constant grinding, neuralgic pain and troubles resembling rheumatic arthritis, for a long while afterwards. This is a fracture which is occasionally overlooked, and that is the result.

The diagnosis once made, you have a reason to give why the treatment should be long and exacting; and then the patient must begin to exercise the pectoralis muscle and the coraco-brachialis with a good deal of caution, for some time to come.

Now the remaining fracture of the scapula is so rare that some authors deny its existence; and it depends a good deal, I think, upon how we consider it, whether we can admit it. If we mean by a fracture here of the glenoid cavity simply a stellate series of cracks, I have no doubt they occasionally occur. Experience and sections have proved that they occur also at the end of the radius; a violent fall upon the end occasionally forcing the bone to give way where its weak part is, drives these bones of the carpus up against the radius and chips it and cracks it. The same thing occurs undoubtedly in the glenoid cavity; and that is an injury without any visible displacement, and with no symptoms except lameness. Given a lame shoulder, where you can detect no deformity and no displacement, where there is some obstinate fact behind which seems to prevent its moving with ease, or getting well, then you may suspect a crack of the socket. That, I have no doubt, occurs, especially in old people. But the other, true fracture of the neck, it seems almost impossible should occur. What is to break that off except the extreme violence of a lacerated compound fracture, or something of that kind? By the ordinary injury this must be very hard to detach. In the first place, it is a solid bone, no epiphysis; it is extremely thick and well protected. If a fracture exists, it is excessively rare and could be diagnosticated only from the fact that the shoulder would drop, and when replaced would drop again, because the socket itself would drop with it.

The treatment would be just the same as to reduce a dislocation, and to reduce fracture of the anatomical neck.

Stellate fracture is not very uncommon. Fracture of the infra-spinous fossa is the common thing. Separation of the acromion is the next. Fracture of the coracoid process is rare, and true fracture of the neck is almost unheard of. All fractures of the scapula, then, are easily treated. The one that requires the longest time, of the ordinary ones, is fracture of the coracoid process.

Fracture of the Ribs. — Nature has protected the upper ribs so much that they are very rarely broken, especially the first rib. Fracture of this rib is extremely rare; and, as you see, it can hardly be got at unless the collar-bone is broken first, and even then it must be a very peculiar force to reach it.

The second rib, again, is very thoroughly and largely covered in by the pectoralis muscles. So is the third; the fourth, fifth, sixth and seventh are those most exposed to fracture, first, because they are more superficial, and second, because they are pretty firmly attached at both ends, whereas the lower two or three ribs, which are loosely attached to the sternum, the eighth and ninth, and the eleventh and twelfth, which are floating, are much more likely to yield to a blow without cracking; so the fourth, fifth, sixth, seventh and perhaps eighth are the common ribs that are broken.

Then as to place, they are usually broken about one-half way between the angle and the sternum, on the side of the thorax; that is the usual place. It is rare that two ribs are broken; one rib usually. It must be by a fall on some singularly well-arranged point to break two ribs — a peculiar fall on the corner of a step, or on the edge of a curb-stone.

Ribs are quite frequently broken by the shafts of passing vehicles when persons are struck or run over. That is quite a common cause. A blow by the fist is a rare cause, however. Once in a while in a feeble old person — I have known one or two cases — a rib has been broken by coughing. In the healthy person, however, the rib resists a good deal, and has to have a sharp peculiar blow to break it. It is not likely to be broken where it floats, and therefore it is the fourth, fifth, sixth and seventh, that usually give way.

Fractured rib in the female under the mamma, or in the fat male, is hard to get at, hard to detect. In the average person, who is not stout, the ribs can be thrown out into sight pretty well by getting the patient to lean over or getting the arm up, then by inspiration you can diagnosticate the fracture easily; but under the large mamma it is sometimes quite difficult.

The most marked and peculiar symptom is an acute, fixed, stabbing pain on inspiration which is very strictly located in one little point. Thousands of people fall and bruise themselves and have pain in the side, and think they have broken ribs. You may think so also. You investigate to see, and you find that they cannot locate the pain in any spot smaller than the palm of the hand. It hurts here and there and all around, an area as large as the palm of the hand. You must not either be deceived by a strictly localized pain; because certain acute diseases give rise to very acute pain about the rib. And if in any case you are in great doubt, it is wiser to look at the surface of the skin to see if that is healthy, or whether that is the seat of any trouble which may give rise to the pain. A female may have a slight blow, apparently not violent enough to break a rib, but followed by intolerable pain. Such cases will be found occasionally to be due to the earlier stages of herpes zoster, which is intensely painful; and if you can find three or four of these vesicles beginning to break out, the next day you will see plenty, going round from the sternum to the vertebræ: and the diagnosis is established. Of course, that is not very often a cause of deception, but it may be. I would urge upon you in examining for broken ribs to see the naked skin, if possible. Make the patient locate the pain; put the finger on it, and see if they can bring it down to a point within an inch. If they can, then you become very suspicious.

Now we diagnosticate broken rib in the most accurate way by feeling crepitus, but the crepitus is very slight, more slight than that of most other fractures; and with firm pressure upon the chest with the hand you often fail to detect it. Having located what you consider the doubtful point, it is best to make very light pressure with one or two fingers, and then if you can induce the patient to cough, that often will give you the characteristic snap under the finger, which once heard is enough. The stethoscope is sometimes used, and may enable you to hear crepitus. A perfectly localized, stabbing, fixed pain, produced by inspiration; the history of an injury; crepitus, of course, if you can get it. Other symptoms come on later which are very marked; such, for instance, as a slight attack of pleurisy, cough and, particularly, emphysema; if you have a little bubbling of air under the skin, with no wound of the skin, you surely have got a fracture of the rib, nothing else.

Broken ribs, if untreated, will finally unite of themselves; but remain a long while loose and uncomfortable. If treated, they unite promptly, generally in about three weeks, certainly in four, without much callus and without much deformity. The patient is more comfortable, if allowed to sit up. There is no particular reason to keep him constantly lying down. Inasmuch as the sitting up in bed is a very tiresome performance, it is best to let him have a large chair, and sit in some quiet spot where he can adjust himself. Strict orders, however, must be given that the patient with fractured rib must not be allowed to go out of doors, because in the simplest case we have the great risk of pleurisy ensuing; and pleurisy, of course, means acute pleurisy followed by cough, rapid breathing, shaking up of the fracture, delaying the union, possibly a serous effusion terminating in a purulent one, so that we may have no end of troubles arising from this simple cause. A patient may be allowed a good deal of latitude and liberty in a warm room, but should not be allowed to go out of doors.

Treatment consists in holding the ribs still by compressing the thorax with strips of plaster. If but one rib is broken, sometimes it is sufficient to encircle one-half of the thorax with plaster. If there is a fracture of several ribs, or if it is not held still and easy, it is best to put the plaster all the way around, and girdle him with strips high up on the neck and down to the ensiform cartilage. Hold the thorax still and let the patient breathe with the diaphragm, and the comfort afforded by this treatment is immense. He ceases to feel the pain, ceases to hear the clicking of the broken rib, he can turn over with an ease he could not do before. The rubber adhesive plaster, spread on very strong cloth, is the best; and may be cut in strips about an inch and a half wide and of a length to encircle the chest; or to reach only from the sternum to the vertebræ; and strip after strip should be put on, pretty tightly.

Now comes another point, which is quite important. If you are going to keep the rib perfectly still, you have got to immobilize the arm; otherwise you defeat your object. The scapular and pectoral muscles and the latissimus dorsi all are attached to the arm; and any motion of them is pulling on some portion of the broken rib; consequently the rib must be bound with plaster, then the arm must be firmly confined to the side by a bandage and by a sling over the shoulder, the patient being kept exactly in this position. Thus being kept perfectly still, he can get up or sit down with freedom and more comfort than to be kept lying on the back.

Emphysema, as a rule, does not require any treatment. If excessive, it may be punctured, though the relief afforded is questionable. It absorbs generally with rapidity. We are speaking now of simple fracture of the rib. Compound fracture of the rib, of course, would require more radical treatment in the way of washing out the cavity, taking out fragments of bone, etc. Simple fracture of the rib is a very common accident, and happens especially to middle-aged and elderly people. Naturally in advanced age, the ribs, which are never very strong bones, become more brittle, and are quite apt to be broken.

Almost all cases, if treated judiciously, make a good recovery. One can conceive of a fractured rib in an old person injudiciously treated; as, if one insisted on keeping him flat on his back, and kept him absolutely still, one can conceive that the slight irritation of the pleura, the hypostatic congestion, etc., would easily bring on a pneumonia, which in old people is rapidly fatal.

Make a diagnosis with gentleness; secure the parts with firmness; keep the patient warm, and in one atmosphere; and that is all.

PROFESSOR LOEFFLER, by means of the bacillus typhi murium (which is fatal to both field and house mice, but harmless to other animals), has saved the wheat crop of Thessaly from a plague of field mice which seriously threatened its destruction.

Original Articles.

SOME REMARKS ON ARSENICAL POISONING, WITH SPECIAL REFERENCE TO ITS DOMESTIC SOURCES.[1]

BY FREDERICK C. SHATTUCK, M.D.,
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MR. PRESIDENT AND FELLOWS OF THE PHILADELPHIA PATHOLOGICAL SOCIETY: — In the first place, pray allow me to express to you my very high appreciation of the honor which you do me in inviting me to address you. When I received your flattering invitation I was somewhat puzzled to explain to myself why you sent it out of Philadelphia, and why it was sent to me. The first difficulty I could account for on the ground of the embarrassment of riches at home; the second difficulty I have not been able to solve.

The subject which came immediately into my mind as perhaps suitable to the occasion, I put aside on learning that your distinguished fellow, Dr. Da Costa, had addressed you on a cognate subject last autumn. It was thus demonstrated to me that it is no easier to get ahead of a Philadelphia doctor than the proverb says it is of a Philadelphia lawyer. From the other subjects which occurred to me I have selected one which has been called a "Boston fad," and I beg to call your attention to some remarks on arsenical poisoning with special reference to its domestic sources.

Before entering, however, on my special subject-matter, there are some more general considerations on which I should like to touch briefly.

Arsenical poisoning may be either acute or chronic. Speaking broadly, the manifestations of the acute form vary according to the mode in which the poison influences or enters the system, whether its action is mainly local on the skin or exposed mucous membranes, whether it is taken into the stomach, or reaches in a gaseous form the blood and tissues by inhalation through the lungs. We thus have inflammation of the skin or superficial mucous membranes, intense gastro-intestinal irritation, or symptoms of a very grave but more general character. There is less close relation between the manner of exposure and the character of the leading symptoms in the chronic forms, which include most cases of so-called domestic poisoning; but, in these, as we shall see later, all avenues of entrance into the system may be open at once. It is interesting to note that patients who survive the early stages of acute poisoning may present later, through absorption into the blood and deposition in the tissues, symptoms identical with those which may also follow the slow and more or less continuous absorption of far smaller, perhaps of very small doses. I have seen, for instance, in a husband and wife who nearly died from arsenic administered once or at most twice in their food by a daughter who hoped thus to secure an inheritance and render herself more acceptable to a lagging lover, the development of extreme general neuritis, and of pigmentation of the skin resembling that of Addison's disease except in its universality. In the husband ninety-three days elapsed before Prof. E. S. Wood failed to detect arsenic in the urine.[2] Such cases form part of the evidence that the metal is stored up in the system and forms albumenoid compounds from which it is only gradually set free, and also illustrate the double toxic action of arsenic, its local irritant and general systemic effects. It may be mentioned here perhaps as well as elsewhere that arsenic seems to be stored up in the brain and spinal cord more largely than even in the liver.[3]

The leading statements which follow admit, I suppose, of no dispute:

A. (1) The continued administration of arsenic by the stomach is liable to lead to symptoms of poisoning. These symptoms may be direct, — gastro-intestinal irritation; or indirect, — anæmia and debility, dermatitis of different forms, skin pigmentation, redness of the conjunctiva, puffiness under the eyes, headache, irritation of the upper air-passages, irritation of the kidneys (as shown by small traces of albumen, casts and blood in the urine), and peripheral neuritis. The list could be made longer, but comprises the more frequent manifestations. In some respects the neuritis is one of the most interesting of these. With regard to it I recall reading, but cannot now remember where, the statement of Seguin that in his very large experience he has never seen neuritis follow the medicinal use of arsenic. In my more limited experience I have seen at least two such cases. One was that of a young woman successfully treated for chorea with large doses of Fowler's solution, which was well borne as far as the digestive organs were concerned; but she developed a marked and widespread paralysis of both motion and sensation, from which recovery was slow. The other was also a young woman treated by me last autumn for leukæmia, with Fowler's solution gradually increased to fourteen drops thrice daily and maintained for some weeks at that level. She developed a mild but unquestionable neuritis and also the characteristic brown discoloration of the skin. One post-choreic case of arsenical neuritis has been observed at the Boston Children's Hospital.

(2) Medical literature contains reports of a fair number of cases of poisoning by arseniuretted hydrogen; although Professor Chandler[4] says, "I never knew a case except those mentioned in the books many years ago — Galen, for instance, who put his nose to it, and is said to have been killed by it, and I have never heard of one." These cases are chiefly acute and mostly rapidly fatal. The possibility that chronic non-fatal cases of poisoning originating in this way may be pretty common will be touched upon later.

(3) Arsenical stockings, veils and other articles which are liable to be closely applied to the human skin have often been held responsible for toxic symptoms as well general from absorption of the drug as local from its irritant effect. A well-known Boston physician had two attacks of sore fingers. He consulted Dr. J. C. White, who asked him whether he had had anything to do with arsenic. He could think of nothing except some playing-cards which he had used. These were found to be loaded with arsenic, were discarded, and he has never had any similar trouble since. Reports of general poisoning from the use of arsenical pastes, lotions, and ointments are also to be found. Dr. Stillé cites a number in his "Therapeutics and Materia Medica."

B. The great difference between different persons in susceptibility to arsenical poisoning must be admitted; but the influence of idiosyncrasy does not seem to be greater here than in the case of lead, alcohol, tobacco, and many other toxic agents. It is highly probable that habituation also plays a part. Here we naturally think of the Styrian peasants so often brought up in this connection. It seems to be a fact that some of them gradually acquire the power of taking without obvious inconvenience doses which would prove fatal to virgin soil — six grains, for instance, it is said. But no modern physician has, as far as I know, in very recent times carefully investigated this peasantry to ascertain how many try to become arsenic eaters and fail in their attempt, how many develop neuritis or other indisputable toxic symptoms. I cannot regard the statement of Marik[5] as conclusive. He bases his opinion that arsenical paralysis is rare in Styria upon conversations with physicians practising in that province, and on a paper of B. Knapp[6] written in 1885 when we knew much less about neuritis, especially in its milder forms, than we do now. A degree of neuritis might well pass unnoticed in a peasant which an artisan, for instance, would find forced upon his attention.

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[1] The Semi-Annual Address before the Philadelphia Pathological Society, April 27, 1893.

[2] The husband is still, after a year's interval, a paralytic and in the poorhouse, I am told.

[3] Poncy and Livon: Journal de Pharmacologie et Chemie, October, 1879, p. 514. Scolosoboff: Bulletin de la Societe de Chemie de Paris, xxiv, No. 3. Gautier: Annales d'Hygiène, January, 1876, p. 136.

[4] Appendix to No. 117, House of Representatives, Massachusetts, 1886.

We have all seen patients to whom we wished to give arsenic for anæmia, chorea or other cause, show intolerance even of the smallest doses given with every precaution. I remember a leukæmic boy in my hospital ward who bled at the gums and grew worse in every way whenever an arsenical course was instituted, even though only one drop of Fowler's solution thrice daily was given.

C. Arsenic is widespread in civilized countries. It enters as component or impurity into many articles of domestic use. I will not weary you with an attempt to form a complete list. Among those articles, however, may be mentioned wall-papers; cretonnes and other prints; red striped bed-ticking; Turkey-red cotton; child's paints; the "plated" or "glazed" papers used for kindergartens, for covering paper boxes or wrapping confectionery; some woollen dress goods, hangings and curtains; black and other stockings; some distemper paints; indeed, anything in which an arsenical aniline pigment is used as a dye. These dyes may contain two per cent. to three per cent. of arsenic by weight. Formerly arsenic acid was largely used as a oxidizing agent in the manufacture of fuchsine or magenta, but chromic acid answers equally well. Arsenite of soda is also used as a mordant to fix colors which may be non-arsenical.

D. From these articles or from some other sources in our surroundings arsenic is absorbed into the system of many persons, as is shown by its detection in the urine of thirty per cent. of persons taken at random by J. J. Putnam.[7]

This being preliminary, we now come to the question as to whether arsenical poisoning arises from the above-named domestic sources, or rather whether it so arises frequently enough to demand the serious consideration of physicians, the guardians of the health of the public as well as of that of their individual patients. The burden of proof certainly rests on those who maintain the affirmative. Let us, therefore, examine the evidence for and against, beginning, as is I think usual in judicial inquiries, with the case for the plaintiff.

Readily accessible medical literature contains the reports of a large number of cases, many of which came under the observation of highly-trained physicians, presumably alive to the dangers of incomplete observation and hasty deduction, which cases presented symptoms of varying intensity and detail persisting in spite of what seemed judicious treatment. These symptoms were mainly subjective in some, but usually objective as well, ranging all the way from anæmia and debility to extensive peripheral neuritis. For the symptoms no obvious cause could be discovered in the patient's manner of life, habits or surroundings. In not a few cases a marked improvement took place on change in locality, perhaps trifling in character, while the symptoms speedily returned on the resumption of home life without clearer assignable cause than at their first appearance. It was then found that the wall-paper of a room in which the patient slept or passed much time, the Turkey-red lining of a bed-quilt under which he slept, the red striped bed-ticking covering his pillows or mattress, the chintz coverings of a sofa or chairs, contained considerable quantities of arsenic. Then arsenic was found in the urine of the patient, although it had not been given him as a drug or entered his system in Vichy or other arsenical mineral water. The kidneys were in an irritated condition. The arsenically contaminated material was then removed and replaced by one free from the metal. This was followed by the more or less prompt abatement and disappearance of all symptoms and restoration to health. In comparatively few of these cases is the history completed by finding the urine non-arsenical after the lapse of some months. If the patient is well he often passes out of the observation of the physician, who may not care to subject the patient or himself to the expense of an examination which from the point of view of the layman seems unnecessary.

All the reported cases are not so complete as those sketched above. In many the evidence consists in a certain grouping of symptoms for which it is difficult to account, arsenical surroundings and urine; removal of arsenic from the surroundings and recovery. I speak of a certain grouping of symptoms. There is no one symptom which is invariably present in cases of supposed arsenical poisoning. We cannot look for a pathognomonic sign here more than elsewhere, but anæmia, debility, loss of appetite, frontal headache, perhaps nausea and vomiting, redness of the eyelids and catarrh of the air- or intestinal-passages may be so combined as to be highly suggestive that arsenic will be found in the surroundings and also in the system.

If cases like these were isolated, occurred only in a single locality or in the practice of one physician, one would not attach the same importance to them which one is led to attach when they are seen to occur in Great Britain and the continental countries, in Maine and Michigan and other States as well as in Massachusetts. In reasoning from cause to effect or effect to cause, we must often ask ourselves whether the association of result with supposed cause is merely coincidental or whether it is not. I think I am alive to the ease with which, especially when public agitation is going on, members of our profession as well as the laity may jump at conclusions and connect things which do not belong together. The removal of a supposed injurious influence may well act as a species of mind cure, and the reference of more or less vague symptoms of ill-health to a definite and removable cause may satisfy the patient and the physician alike. Some of the reported cases of a domestic arsenical poisoning are certainly inconclusive; and I have no doubt that many persons in Boston and vicinity, particularly, have erroneously believed themselves or been believed to be victims of this kind of poisoning. Some of the cases which have been reported and observed suggest that arsenic may be but one of two or more causes tending to produce ill-health, and that a person already debilitated from some other cause or causes may then be more susceptible to the supposed injurious influence of this posion. Prof. E. S. Wood[8] refers to the case of a young athlete whose convalescence from the grippe seemed to his physician, a thoroughly competent man, unreasonably delayed. Arsenic was found in his urine, although the papers, carpets, etc., were free. Eighteen stuffed birds were finally removed from his room, and recovery was then rapid.

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[5] Ueber Arsenlähmungen, Wien. Klin. Woch., 1891, No. 31-40.
[6] Erg. Hefte zum Centralblatt f. allg. Gesundheitspflege, 1885.
[7] Boston Medical and Surgical Journal, 1890, cxxii, p. 121.

Allowing full weight to inconclusive cases and also to all other possible sources of error, it seems to me that there remains enough to make us hesitate, to say the least, before we attribute the whole thing to mere coincidence. The temptation is great to cite cases, but I shall confine myself to a series reported by C. P. Putnam[9] and a few of my own which have not been published. When Dr. Putnam went on duty at the Massachusetts Infant Asylum in the spring of 1890, he found the babies looking very pale without any apparent reason. He then noticed suppurations on the fingers, slight discharge from the ears. Occasionally a nurse had sores on the fingers. One had an aural discharge, and other skin eruptions were noticed. Arsenical poisoning was thought of as possible, but there were no wall-papers, no carpets or other suspicious articles. The health of the inmates of the asylum grew worse. Bronchitis appeared and two children died from inflammation and ulceration of the air-passages involving the pleura.[10] Some blue dresses recently furnished by the asylum to all the nurses fell under suspicion and were found to contain much arsenic. They were discarded and the health of the institution was re-established. Much of the arsenic was found to be loose in the cloth. The dresses were therefore thoroughly washed in the winter of 1891 and resumed by the nurses. Very soon after both nurses and babies began to have sores on their fingers and other signs similar to those which had appeared before. The dresses were again discarded. The symptoms again disappeared, and have not recurred in the past two years.

The evidence in my own cases is not as striking, but they serve as fair illustrations of many cases seen by many physicians.

(1) W., a clerk in a large dry-goods house, entered my service in the Massachusetts Hospital in the fall of 1891, with poor general health and marked neuritis in all the extremities. It was with much difficulty that he could pick a pin up from the table. Neither alcohol, rheumatism, lead or gout could be considered as causative of the neuritis. The physician under whose care he had been, a gentleman well-known to me, had given him no arsenic. The bedroom wall-paper which had been applied for eight years was highly arsenical and arsenic was found in his urine. He soon began to improve; was discharged from the hospital, and after a time resumed his work, removing the paper. I saw him very recently again and found his general condition still below par with some neuritis still present, though not enough to seriously interfere with his work. An electrical examination which Dr. J. J. Putnam was kind enough to make confirmed the diagnosis of neuritis. The urine still contains a considerable amount of arsenic the source of which I have not as yet been able to trace.

(2) G., a laster, entered my service January 30, 1893. Investigation showed that no arsenic had been given him before this. Besides pallor and loss of flesh he had ataxic paralysis of all the extremities which proved after thorough study to be due to peripheral neuritis and for which the usual causes as laid down in the books could not be considered as responsible. I then had the urine examined by Professor Wood for lead and arsenic. The former was absent, the latter present in large amount February 8, 1893. I then secured some of the paper from his bedroom, which he had occupied for two years, and also samples of the leathers on which he worked. The paper was highly arsenical, as was also one of the samples of leather. After entrance to the hospital he grew steadily worse for some weeks, a continuance of the downward tendency present when he first came under observation, and was confined to bed; but is now steadily gaining in all respects. Repeated examination of the urine has been made for arsenic by Wood. The amount diminished gradually and April 24th the arsenic had practically disappeared, eighty-four days after removal from arsenical surroundings.

(3) Two vigorous boys, brothers, had been confined to the house in town by colds and chicken-pox, shortly after their return from the seashore. From these they had just recovered when they and also another brother, who had been previously well, began to have recurrent attacks of nausea and vomiting. I presently suspected that some kind of poison from without was at work and had the plumbing, cooking utensils, refrigerators, etc., examined without finding here any cause for the illness. The symptoms grew worse. The youngest boy became extremely weak. I then had the papers examined for arsenic, which was found in large quantity in that of the hall, entries and stairway on every story, and also in that in five chambers. The papers had been on for a number of years. There was *no* arsenic in the paper on the wall of the rooms occupied by the sick children: but I found that they always slept with their windows shut and doors into the entry open. The boys were at once removed from the house and the papers were replaced by some free from arsenic. The patients rapidly recovered, and during the three years which have since elapsed have never had any recurrence of such symptoms. The urine of one of the boys has been examined for me within a fortnight, and found to be free from arsenic. My supposition is, that as the entry papers became worn the arsenic was gradually set free in larger quantities and contaminated the air of their bedrooms, which were constantly in free and uninterrupted communication with the entry.

In none of these cases can the arsenical origin of the symptoms be regarded as absolutely proved, but I should like to call attention to the parallelism between the symptoms and those which are described in the text-books as occurring from contact with, or ingestion of the drug. A few such cases may be only suggestive, but when they are multiplied many fold as can easily be done by any one who cares to consult the literature, the evidence furnished by them seems to me to be such as is worthy of serious consideration.

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[8] Hearing before Committee of Massachusetts Legislature, 1892, p. 83.

[9] Hearing before Committee Massachusetts Legislature, 1891, p. 66.

[10] This statement does not quite correspond with that printed in the Report, but is in accordance with information given me recently by Dr. Putnam. In default of a bacteriological examination of the lungs in the fatal cases it must remain an open question as to the part, if any, played by arsenic in the production of the fatal lung disorder. The other symptoms, however, seem less open to doubtful interpretation.

Again, I shall here only mention the fact that a number of European governments recognize arsenic as a source of danger in articles of domestic use, coming back to this point more fully later.

Let us now consider the objections which can be raised — the case for the defence. In so doing, I shall say what I think can be said to meet those objections, just as I called attention to some weak points in the argument for the plaintiff.

First, there is the alleged immunity of workmen and others whose occupation brings them into close relation with arsenic. A number of wall-paper manufacturers and dealers testified before the Committee of the Massachusetts Legislature of 1891, that during the many years they had been in the business they had never known of any injurious influence being exerted on themselves or their employés from arsenic. A number of such cases are, however, reported. Draper[11] mentions several cases among those employed in wall-paper shops, while cases of poisoning from green tarletan, artificial flowers, and among taxidermists are by no means rare. E. G. Cutler reports his investigation of a Lowell box factory. Two cases of illness among the employés seem fairly attributable to the arsenical green and red papers used to cover the boxes. They contained about eight grains of arsenic to the square foot, but were heavily sized. The health of the girls, in general, was excellent. Much attention was given to the cleanliness and ventilation of the work-room, and other precautions were taken to prevent injury.[12] E. S. Wood tells me that several workmen have stated to him that they suffer every time they remove an arsenical paper from the walls of a room. It is quite conceivable that workmen should not care to mention their disabilities, if not too great, to their employers, for fear of losing their places. The symptoms in these cases are essentially the same as those often seen in the consumer of arsenical goods. Moreover, the conditions are somewhat different between prolonged nightly exposure to the air of a bedroom, for instance, covered with an arsenical wall-paper, and the exposure to which a clerk in a paper shop is subjected. The papers are there tightly rolled and stored on shelves. But small portions of the rolls are displayed to customers, and only for a short time. The shop, moreover, must be dry, or the papers would mildew and become unsalable. Arsenical dust is, therefore, the only thing to be dreaded. As far as reports in medical literature go, there certainly seems to be a relative immunity among workmen. Whether this immunity is really as great as it seems is a question which appears to me worth further study. The observance of simple precautions can, undoubtedly, do much to lessen the danger.

Next, we have the fact that far larger quantities of arsenic in solution — that is in a condition ready for immediate absorption — can be, and constantly are, given medicinally by the mouth with impunity or only transitory gastro-intestinal disturbance than it is conceivable should, save in very rare instances, enter the system from domestic sources. Chemists of considerable experience in the examination of urine for arsenic recognize this fact; and I have repeatedly known the report to be made that the amount was so large, that it must in part, at least, have been taken somehow by the stomach. Elimination after ingestion is slow. In a patient of mine to whom twenty-seven drops of Fowler's solution were given during three days, arsenic was detected in the urine by Wood until the fifty-eighth day. In another, who received sixty-nine drops in seven days, eighty-two days were required for elimination. But the conditions of gastric administration and exposure to arsenical papers or goods are not identical. There are reasons for believing, as will appear more fully later, that some gaseous form of arsenical compound may be set free in consequence of the growth of certain moulds, and that in this form, and inhaled, the poison may be more active than when it enters the system exclusively through the stomach. But whether arsenic is given off as a dust or gas the duration of the exposure is generally quite different, that is, it is far longer in the domestic cases. In either case habituation may, but does not necessarily, ensue.

This leads us to the next objection, that arsenic is found in the urine of many persons who are quite free from indications of subjective or objective disease. J. J. Putnam has conclusively shown that the same is true of another metal — lead, the toxic influence of which on some persons is admitted by all. If this objection is to have weight with one metal it would seem to have equal weight with the other. Idiosyncrasy, which includes relative immunity and habituation, must relate to both or neither.

The objection that arsenical poisoning of domestic origin occurs only in Boston, would be too trivial to notice here were it not that it has been seriously urged, though, it is true, mainly by interested parties. It so happens that the question has received more attention in Boston than perhaps elsewhere in the United States, but the statement that cases are not observed elsewhere argues simply the ignorance of the person making the statement. There are plenty of unrecognized relations between cause and effect, plenty of unclassified conditions which are constantly before our eyes if we could only see them. How long has neuritis existed? How long have we recognized it?

The risk is considered sufficiently great to warrant legislative interference in Sweden, Germany, Russia, Austria and Denmark. In France, no regulation exists except with reference to articles of food and drink and children's toys, though the government has sent circulars to manufacturers warning them of the penalties to which they are liable if accidents result from the presence of poisonous substances in their goods. In England there is no law, but there has been considerable agitation on the subject, especially by the National Health Society and the London *Lancet*.[13] The very agitation has, however, been followed by a marked diminution in the amount of arsenic contained in articles for domestic use, as it is stated. An abstract of the laws on this subject will be found in the report of the Massachusetts Board of Health for 1885, in an article from the pen of E. S. Wood, entitled "Arsenic as a Domestic Poison." This abstract is taken from the English National Health Society's report for 1882.

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[11] Third Report Massachusetts State Board of Health, 1872, p. [illegible]

[12] Seventh Report Massachusetts Board of Health, 1876, p. [illegible]

[13] 1892, ii, [illegible]

I have tried to ascertain what changes, if any, have been made in these laws since 1885, and I am indebted to Vorban[14] for most of the statements here immediately following. The Swedish, the most stringent and precise, remain the same since 1883. The maximum amount of arsenic permissible in wall-papers, materials for artificial flowers, and some other articles is about one-fourteenth of a grain to the square yard; in textile stuffs and yarns and other specified articles one-seventh of a grain to the square yard. The process to be used in the chemical determination is carefully defined. The German law of 1882 was found to be too stringent in that it absolutely prohibited arsenic in wall-papers and articles of apparel. The metal is so widespread and the means for its detection are so delicate that minute traces can be found oftentimes in spite of the best faith and most painstaking care on the part of the manufacturer. The law of 1887, which went into effect May 1, 1888, allows a maximum of two and a half grains to the square yard, provided that the arsenic is in a form insoluble in water. An exception is also made in favor of colors which do not contain the arsenic as a constituent part, but simply as an impurity; and this, at the most, in a quantity unavoidable in the ordinary methods of manufacture. This exception obviously might afford opportunities for dispute and a loophole for a dishonest manufacturer. The Chancellor of the Empire is authorized to issue directions as to the process to be used in the detection and estimation of the amount of the metal.

The Russian general law of 1876 seems to be still in force. It allows a maximum of one-seventh to one-eighth of a grain of arsenic to the square yard in wall-papers. There are some local regulations as in Riga and Dorpat. In the latter place the maximum is fixed at one-fifteenth of a grain per square yard in wall-paper; one-thirtieth of a grain in cloth.

In this country, Massachusetts takes the lead in the agitation on the subject. The ball was opened by Dr. Draper in 1872, and four unsuccessful attempts have been made to secure legislation. The act of 1891 prohibits arsenic in confectionery and children's toys, and authorizes the Board of Health to expend a sum not exceeding one thousand dollars on "such investigations and inquiries as they deem necessary as to the existence of arsenic in any paper, fabric or other article offered for sale or exchange." The outcome of this is the report of Prof. W. B. Hills,[15] with regard to the conclusions of which I shall speak later.

Recognition of the danger which may exist of domestic arsenical poisoning, is found in the reports of Boards of Health of Michigan,[16] California,[17] Rhode Island,[18] Connecticut, Pennsylvania, New York and Maine, as well as in those of Massachusetts. In the year 1874, the Committee on Poisons of the Michigan State Board of Health, prepared one hundred books of specimens of poisonous papers bought from first-class dealers in various cities, and placed these books in public libraries. The book was entitled "Shadows from the Walls of Death, or Arsenical Wall-papers." This title was followed by a quotation from Leviticus, fourteenth chapter: "And behold, if the plague be in the walls of the house, with hollow strakes, greenish or reddish. . . . Then the priest shall go out of the house to the door of the house, and shut up the house seven days. . . . And he shall cause the house to be scraped within round about, and they shall pour out the dust that they scrape off, without the city into an unclean place." I find the plague referred to is leprosy. One lady is said to have been poisoned by examining this book.

In the report of the State Board of Health for Pennsylvania, 1887, in the report of the Committee on Adulterations, Poisons, etc., it is stated that but little work has been done during the year for lack of funds and by reason of the expensiveness of chemical investigation, although "in the manufacture of certain foods employed in our households, wall-papers, textile fabrics, dye stuffs, etc., we shall find abundant scope for the operation of the Board's conserving energies." The only State besides Massachusetts in the laws of which wall-paper is mentioned in connection with poisonous pigments, as far as I can find, is New Hampshire, and here the matter is left in such a way that it can have no direct practical result.

We see then that the positive evidence is strong, and comes from many sources. It seems to me far stronger than the negative evidence which I have tried to present fairly. It would certainly appear to be undesirable that the public should be exposed to an influence which there is so much reason to believe to be injurious, especially when such exposure is quite unnecessary. In proof that it is unnecessary I will call only three witnesses. Prof. W. B. Hills reports in 1892 to the State Board of Health of Massachusetts, that in the last ten years decided improvement has taken place in the wall-papers sold in the State. About three per cent. of the papers manufactured to-day contain more than one-tenth of a grain of arsenic to the square yard, against approximately thirty per cent. ten years ago. Between sixty and seventy per cent. of the papers sold in the State are free from arsenic. About ninety per cent. contain less than one-twentieth to one-tenth of a grain per square yard, an amount which can be harmful to probably very few people. He states that arsenic is not essential to the production of the colors, and that those which were formerly arsenical can now be made without that metal. An absolutely exact comparison between the examinations of 1879 to 1881 and 1889 to 1891 is impossible, for the reason that during the latter period the so-called Marsh-Berzelius test was used, while in the earlier period the original Marsh test was followed. The modified method is much more delicate than the Marsh and detects quantities of arsenic which escape the latter. A still more striking improvement is shown in the "glazed" and "plated" papers used in kindergartens, book and pamphlet covers, to wrap lozenges, etc. The use of Paris green is much less common in tickets, show-cards and the like, than it was ten years ago. Mr. Henry Saltonstall, the treasurer of the Pacific Mills, one of the largest cotton mills in the world, testified before the legislative committee of 1891, with authority to speak for four out of the six print works in Massachusetts. He stated:[19] "I wish to say in behalf of them (the print works) that not only are we not averse to a law restricting the use of arsenic, but we welcome such a law. We would be glad to have a reasonable and fair law which should prohibit the use of arsenic by any mills inside the State or factories outside the State which have their goods for sale here. I don't dare to say what would be the danger limit, but I think if one-fiftieth of a grain of soluble arsenic were allowed per square yard, we could come down to this limit in textile fabrics or furniture." The proposed law, which failed to pass, allowed one-twentieth of a grain per square yard, not distinguishing between the soluble and insoluble forms. This is strong testimony to show that there is no necessity for the use of dangerous quantities of arsenic, coming as it does from a most competent general chemist and also from a very large manufacturer who has presumably consulted with his own chemists before he commits himself as above.

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[14] Inaugural Dissertation, Dorpat, 1889.

[15] Report of Massachusetts State Board of Health, 1892.

[16] 1873.

[17] 1874.

[18] 1878, 1879, 1887, 1888, 1889.

[19] Hearing before the Legislative Committee on Public Health, 1891, pp. 38 and 41.

Mr. Jones, student assistant in the chemical laboratory of the Harvard Medical School, showed me an old sample of green tarletan which contained one-half its weight of arsenic. He tells me he has bought samples recently and failed to find any arsenic in them. Until very lately many of the red-striped bed tickings contained much arsenic, but they, too, show the effect of agitation on the subject. In connection with the preparation of this paper, I meant to experiment on myself. Professor Wood kindly examined my urine and failed to find arsenic. I then tried to buy arsenical bed ticking to cover my pillow, taking a sample which was largely impregnated from Wood. Both pieces which were bought for me proved to be non-arsenical so I was unable to complete my experiment and find out whether my urine became arsenical after sleeping on this pillow covering.

We are next led to the question as to what amount of arsenic is allowable, a question which nobody seems prepared to answer absolutely. It is, however, probable that an amount not exceeding, say one-fifteenth of a grain to the square yard, irrespective of solubility and form, may be regarded as practically innocuous.

In the German experience we find one explanation for the difficulty in framing a law which will work no injustice to manufacturers or harm to consumers. The best tests are so delicate and the presence of minute traces of arsenic so general in one form or another, that absolute prohibition is really impracticable. A satisfactory law must, like the Swedish, not only fix the maximum allowable amount, but must also prescribe the method of chemical analysis. It is probably not practicable to distinguish legally between soluble and insoluble arsenic. Some manufacturers and dealers argue that the diminution in the amount of arsenic contained in papers and fabrics during recent years shows in itself that no law is necessary. But this diminution cannot be attributed to anything except the agitation of the subject, a continuance of which demands considerable public spirit on the part of the agitators whose ranks are not generally largely recruited from among the monied class.

It is, moreover, doubtful whether the benefits of the agitation in Massachusetts extends widely beyond the State. Arsenical goods are in the main unsalable there; but no questions are asked in most parts of the country. If purchasers ask no questions, even in Massachusetts, they are liable to receive dangerous goods.

The question is interesting and also important as to the manner of introduction of arsenic into the system from domestic sources. When the arsenical material comes into close contact with skin, whether broken or unbroken, as in stockings or in arsenical caustic paste, the avenue of entrance is plain. When absorption takes place from a distance, as in the case of wall-papers, the arsenic is set free either in the form of dust or in a gaseous state. In the former case it is swallowed and inhaled; in the latter inhaled alone. There can be no question that arsenical dust is detached from papers, fabrics, water-colors, sometimes from curtains or carpets. The dust which has settled on ledges, etc., in rooms containing arsenical papers has been analyzed and found impregnated with the metal. The ease with which the poison is detached varies of course much with the character and surface of the paper or material. Some papers grow much more dangerous with age as they become worn; others are highly dangerous from the start. Covering an arsenical with a non-arsenical paper does not necessarily render the former innocuous. Varnishing an arsenical paper renders it safer certainly for a time, but does not secure safety. Arsenic is sometimes used as a preservative for the paste which fastens the paper to the wall.

I think it was Fleck,[20] who, about twenty years ago, first supported by scientific evidence the suggestion which had been previously made that a gaseous form of arsenic may, with the aid of moisture and in the presence of organic substances, be set free from arsenical pigments. Hamberg [21] detected the metal in the atmosphere of rooms with arsenical papers. The nature and manner of production of this gas has been studied by Husemann,[22] Selmi,[23] and very recently by Gosio.[24] The work of the latter is not very readily accessible and I therefore venture to abstract a portion of his conclusions.

It is proved beyond question that arsenical gases can be developed by the growth of moulds in contact with arsenical chemical compounds.

Only a few moulds possess this property.

While many moulds can live and grow in the presence of arsenical compounds, only four have thus far been proved to possess the power of setting free arsenical gas, mucor mucedo, aspergillus glaucus, aspergillus virens and penicillium brevicaule.

The conditions which favor the production of arsenical gas by these moulds are: First, those which favor in general the life of the fungus, abundance of oxygen, moisture, nutritious material and suitable dosage of arsenic. Second, those which depend on the facility of the transformation of the arsenic. Thus arsenic acid, and the arseniates and arsenites of sodium and potassium are more easily transformed than the arsenite of copper. Third, the presence of carbohydrates (starch paste). These moulds can, however, decompose arsenite of copper from papers even when they grow in the paste or glue fastening them to the wall.

In the case of mucor mucedo, at least, the quantity of arseniuretted hydrogen evolved is small in comparison with another more important compound, probably the union of the metal with organic alcohol or aldehydic radicals.

These conclusions are the result of work up to May, 1892. Its further prosecution is promised.

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[20] Zeitschrift f. Biologie, [illegible]
[21] Schmidt's Jahrb., [illegible], Bd. [illegible]
[22] Virchow's Hirsch Jahrb., [illegible]
[23] [illegible] Jahrb., [illegible]
[24] Monograph [illegible] the Board of Health, Rome, [illegible]

They are quite confirmatory of the English reports which suggest that arsenical wall-papers exert a more deleterious action during moist than during dry weather, and they throw important light on one method of domestic poisoning.

The main, if not the sole, avenue of elimination of arsenic which has got into the circulation by one avenue or another is the kidneys. It is a practical point, worthy of note, that we do not as yet know any direct means to further the elimination. The treatment of chronic arsenical poisoning resolves itself into, first, stopping further absorption; second, general hygiene; and third, the treatment of such symptoms as may require it. Active catarrhal symptoms are apt to subside pretty quickly on the removal of the toxic agent. Neuritis is to be treated by massage and electricity as when due to other causes.

The prognosis is good, both as regards life and recovery. Fatal cases are rare and recovery is relatively quick unless neuritis is extensive or very advanced, or the arsenical poisoning is only one of a combination of causes producing ill health. The method used by all the gentlemen connected with the chemical department of the Harvard Medical School is the Marsh-Berzelius which is sufficiently delicate and easy of application. In determining the length of time necessary for elimination of arsenic, Wood has used the method of Sanger.[25]

The conclusions I feel justified in drawing from the above considerations, which I have endeavored to strip of unnecessary detail, are the following:

(1) There is overwhelming evidence to show that many arsenical articles which enter into common domestic use are dangerous to health.

(2) That while it is impracticable to demand absolute freedom from arsenic in these articles, the presence of injurious quantities of the metal is quite unnecessary.

(3) That therefore carefully framed legislative restriction, if possible uniform throughout the States, is desirable.

(4) That it is the duty of the medical profession everywhere to study the question, and to lend its powerful aid in forming public opinion and otherwise securing such legislation.

I wish to take this opportunity of expressing my indebtedness to Drs. E. S. Wood and J. J. Putnam, and to Dr. J. L. Morse for indispensable assistance in searching the literature. It remains for me only to thank you for the patience with which you have listened to this imperfect presentation of a Boston fad.

Iodide of Potash in Pneumonia. — Falten recommends large doses of iodide of potash in the first few hours of pneumonia and epidemic cerebro-spinal meningitis. In pneumonia he believes that a crisis or lysis may be brought about in a few hours. One drachm and a half is given at a dose, and repeated, if necessary, two or three times. The physical signs in cases of pneumonia persist for the usual length of time, but the early crisis removes the danger of cardiac collapse. Unless given early in the disease, the drug does not produce such remarkable results, and after the first twenty-four hours no favorable effect is obtained. In cases of cerebro-spinal meningitis even more remarkable results were obtained.

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[25] Boston Medical and Surgical Journal, April 27, 1893.

TREATMENT OF SINUS FOLLOWING ABDOMINAL OPERATION: A CASE.[1]

BY G. H. WASHBURN, M.D.

Under the improved and constantly improving methods in abdominal operation, we do not hear so much of sinuses as we used to. A sinus may still be found, at times, however, and is often a troublesome thing to cure. In order to treat this condition successfully, it is important to find out the cause. This sounds so axiomatic, that it seems wholly unnecessary to say it, were it not that often the cause is hard to find and it is easy to be misled. The problem is comparatively simple when the sinus occurs in a patient under one's own care at the time of operation; but it is a different matter when a patient presents herself with a sinus, and you have no definite knowledge about the details of the operation she has previously had.

In the "Encyclopedia of Surgery" the following methods of treating sinuses are advised, namely: "(1) removal of foreign bodies or other sources of irritation; (2) laying the passage open and allowing it to granulate; (3) the provision of free drainage, either by enlarging the existing orifice by incision or dilatation, or by making counter-openings; (4) the use of drainage-tubes; (5) rest; (6) pressure; (7) injections; (8) the cautery; (9) plastic operation; (10) improvement of the general health." Sometimes almost all of these methods may be tried without securing a permanent closing of the sinus.

The case I have to report is so interesting that I will give the history in full.

An unmarried woman of forty-one, who has always been obliged to work hard, having supported herself since she was a mere child. Menstruation began at ten and a half years, coming regularly every three weeks till she was twenty, since then every four weeks; lasting seven days; the flow free, requiring twenty-five or thirty, and sometimes more, napkins; much blood was also lost whenever she rose to pass water. Usually there is severe pain for two days before, ceasing with the advent of the flow; sometimes, however, it would come on after a day of flowing, and last thirty hours, during which time the flow was profuse. Pain was generally paroxysmal in character. Sometimes the pain is steady for the thirty hours or more. This generally occurred when she was previously unusually tired. No drugs ever gave any relief, and she has been obliged to take ether to alleviate her suffering, inhaling at times over a quart. Nausea the first three days of flow. No leucorrhœa has ever been present. When about ten years old, she was thrown down and stepped on. Her back began to pain her; and ten days later she was taken unwell for the first time. She was confined to her bed for three months. Since that time her back has never ceased paining her for any length of time.

When eighteen, she fell down stairs; the uterus was displaced. An attempt was made to use a pessary, but it failed.

When twenty-eight, she was examined by a distinguished specialist in New York, who found the left ovary in bad condition, and wished to remove it; but she would not consent.

When thirty-four, she went to a hospital in another city, where she was kept in bed five months. The hymen and perineum, being very sensitive, were cut, so as to allow treatment to be applied. A small polyp was removed from the cervix and the rest of the time she was treated with iodine, packing, etc. At the end of her stay in that hospital, she expressed herself as feeling worse than before.

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[1] Read before the Obstetrical Society of Boston, March 11, 1893.

October 30, 1891, she had a cœliotomy. She said that an ovary was removed, and also a small subserous fibroid, the size of an English walnut, causing very free hæmorrhage.

There was intense pain began, immediately following the operation. The wound did not heal; and on the eighteenth day an abscess discharged through the sinus. For seven days previous to the emptying of the abscess there was no movement of the bowels, in spite of the free use of salts, jalap, etc. The abscess is said to have discharged about a pint of foul pus. About two weeks later she left this hospital. The sinus had closed.

Ten days later she took cold and had the "grippe." The sinus now opened again.

Resumed her work again March 1, 1892; and just before that, she began to have a discharge from the vagina. About once a week there would be this discharge, after several days of severe pain. Relief from pain lasted only while the discharge continued.

June 2, 1892, she entered the Massachusetts General Hospital. The abdominal wound was opened enough to allow an exploring finger to be passed down beside the sinus track, to see if any foreign substance could be felt at its base. Nothing was found, so the peritoneum was closed and the sinus scraped out, etc. It closed quite readily, and she left the hospital in three weeks.

I first saw her in the early part of July, two weeks after her leaving the Massachusetts General Hospital. A large abscess had just discharged at the site of the old sinus, several ounces of pus escaping.

The opening was at about the junction of the middle and lower thirds of the scar left by the cœliotomy. A probe passed downwards, forwards and a little to the left, for about two inches. A fine probe would go no further. Nothing special was found, as a cause for the abscess. Vaginal examination showed the uterus drawn backwards, little mobility; and a small elongated mass was felt to the left. The sinus seemed to go down towards the left side of the uterus. The examination had to be made under ether, on account of the sensitiveness of the hymen and vagina. There was little tenderness of the abdomen on pressure.

I ordered her to have rest, which was secured by keeping her in bed most of the time for several weeks. The sinus was irrigated with a corrosive sublimate solution and packed with iodoform gauze. Later the washing out was done with a solution of chlorinated soda. This also was changed for the peroxide of hydrogen. After the washing with this a few drops of balsam of Peru was inserted. The sinus closed up, till the probe would enter only half an inch; and some tissue had to be snipped off to prevent the opening from closing. There was hardly a sign of discharge. The patient's general condition also improved.

At this stage, however, she began to have severe pain in the back and in the pelvis, especially on the left side, and radiating up towards the umbilicus. Nothing seemed to give any relief. There was much mucous discharged from the bowels; twice there were mucous casts of the small intestine, several inches long. Finally, after a week of suffering, there was a purulent discharge from the vagina, and the pain was relieved. During all this time there was no rise of temperature, and a part of the time, the temperature was depressed below normal.

Examination with the speculum, showed a small opening to the left of the cervix, from which pus oozed; but the opening was too small to admit a fine probe.

During the period of this pain no progress was made in the healing of the sinus. Nitrate of silver solution was applied to stimulate the granulating, but without effect. About the time that the vaginal discharge appeared, the amount of discharge from the abdominal sinus began to increase; and in a few days the probe entered the sinus about an inch and a half, almost as far as at first.

The patient now began to lose ground again gradually. Sleep was broken by pain and also by her nervous condition. Appetite poor. Considerable headache. No rise of temperature.

Another examination was made under ether, but nothing new was elicited. Various things were tried; but the sinus showed no further inclination to heal from below. Her headaches became worse. The ordinary remedies had no effect whatever. Bromide, in doses amounting to one hundred and twenty grains a day, gave some relief. The faradic current afforded much relief, and enabled her to get some sleep. One of these headaches lasted two days without any let-up, in spite of everything that was given. The electricity was what brought relief at last.

Things went from bad to worse, notwithstanding she received constant care, and had the most favorable surroundings.

On October 8, 1892, the abdomen was opened. The Trendelenburg posture was used, and facilitated the operation very much. Drs. Burrage and Morse assisted me.

The track of the sinus formed a mass as large around as the finger, and extending to the left side of the top of the fundus. The intestines were firmly adherent to this on all sides, so that they had to be dissected off. On cutting away the mass from the uterus the source of the whole trouble was shown; two large braided silk ligatures buried in the substance of the uterus. They had to be cut to allow of being pulled out.

There were many and firm adhesions on the left of the uterus, and a cyst, apparently in the broad ligament, filled with clear fluid. The left ovary was glued up close to the uterus and against this cyst. It had to be torn off partially and then the surface seared with the cautery. A little gauze was packed down into the cyst cavity and against the surface where the ovary was torn, to serve as a drain. The gauze was partially removed in twenty-four hours, and the rest of it in forty-eight hours. For a week the patient acted as if she were out of her head. She exercised no control over herself. Would sit up in bed, rise up and make a sudden dive for the water or a basin to vomit into. She had to be watched constantly; and then her movements were so sudden and rapid that they could not be forestalled. She tried to vomit everything she took. In every way she behaved as badly as one could imagine. Afterwards she said she had no recollection of anything that occurred during that week.

The temperature never rose above 99°, and convalescence, though a little slow was steady. She has been gaining strength, and now feels that she is really going to be a well woman.

Clinical Department.

REPORT OF A CASE OF ABDOMINAL SECTION FOR PELVIC ABSCESS AND PERITONITIS WITH REMOVAL OF DOUBLE PYOSALPINX: RECOVERY.[1]

BY GEORGE W. DAVIS, M.D., HOLYOKE, MASS.

I WAS called November 14, 1892, to see Mrs. L., age thirty-six, a widow, and the mother of six children. The youngest was fifteen years old. Had been a widow for nine years; occupation, general housework. Health had been usually good; had menstruated regularly, and it was now time in the month for its recurrence. She had been feeling poorly for ten days, and was suffering from pain in the abdomen, mostly of right side. Said she had slipped in her hurry about her work three weeks before, and in her exertion to save herself from a fall had felt a pain in the lower part of the abdomen low down on the right side; she had kept about her work till three days ago, when she became unable to leave her bed. Pressure on the abdomen caused pain. The tenderness was more pronounced in the hypogastric region; general tympanitis of abdomen with constipation were present; pulse about 120, temperature 102°. Upon vaginal examination the rectum was found distended with accumulated matter. The uterus was somewhat enlarged and but slightly movable and very tender to touch; it seemed to be held in its semi-fixed position by general inflammatory infiltration. The roof of the pelvis, as felt by the examining finger, was tense, semi-elastic and sensitive. There was felt behind the uterus, and extending to the left, a nodular, irregular mass, which gave to the examining finger the suggestion of malignancy; whether it was an outgrowth from the uterus was impossible to certainly know. The accumulated fæcal matter very much interfered with any attempt at accurate diagnosis. Rochelle salts were ordered, with enemata of soap and warm water, and fomentations to the abdomen.

Next day, November 15th, the saline had done its work thoroughly, and the patient was much improved; the abdomen was less sensitive, and a bimanual examination more satisfactory, but diagnosis was still uncertain. The mass could be felt behind and to the left of the uterus; nothing like fluctuation could be made out. The pulse was less rapid, the temperature reduced, and the general symptoms much better. Warm vaginal douches and some tonic medicines were ordered, and the fomentations to abdomen were continued. After two or three days so much improvement had occurred that my visits seemed unnecessary, and were discontinued.

I was called again November 20th. The patient was then much as at my first visit; but the pulse was faster and the temperature higher. Pain was intense, and morphine was ordered for its control. Evidently a new attack or extension of the pelvic trouble was present.

Next day, November 21st, all the symptoms were worse, with a pulse of 120 and temperature of 104°. There was more tympanitis and an anxious facial expression that spoke plainly of the gravity of the disease at hand. Salines were again ordered, though the bowels were not constipated at this time.

This was a poor patient, and so situated that nothing could be done in the way of operation at the house where she was employed. There was no one to care for her, and she had no friends who could be useful in her present condition. She was at once taken to the House of Providence, and made as comfortable as the circumstances would allow; and arrangements were made for operation the next day, November 22d. Drs. J. C. Hubbard and D. F. Donoghue saw the patient in the morning, and confirmed the general description given; the salines had operated thoroughly, and the symptoms were in consequence less severe than upon the previous day. Pulse 120, temperature 102°. There was nothing resembling fluctuation present. There had been during the course of her illness several marked chills.

An attempt at diagnosis at this time proved that neither of us were very certain as to the real condition. There was pelvic peritonitis, which was becoming general; there was the localized pain and tenderness, with swelling, etc., as already described. Pus was expected, but from what cause was uncertain. Pus-tube, with rupture, was suspected. Hæmatoma seemed, from the history of the case, probable. Ectopic gestation, with rupture, was quite possible. We believed the patient was rapidly approaching a stage from which she could not recover, and proceeded with the operation.

The parts had been thoroughly washed the previous evening with soap and water followed by bichloride solution, and enveloped with towels moistened with the solution. The abdomen and genitals were now again well washed in soap and water; and the hairy portion was shaved, then washed with the bichloride solution, followed by ether. A vaginal douche of the solution was given, and the patient anæsthetized and placed on the operating table; the bladder was emptied by catheter.

The seat of operation being surrounded by towels wet in warm bichloride solution, the usual incision, about four inches long, was made between the umbilicus and pubes (but nearer pubes) through the skin and superficial fascia down to the muscle; there the linea alba was searched for, and the incision extended through it to the subperitoneal tissue, which in this case presented a most confusing appearance, much resembling the peritoneum, and being so loosely attached as to be quite movable and to suggest the possibility of the abdomen having been already entered and the contents presenting in the wound. This matter being settled by carefully incising a minute portion and finding it very œdematous and presenting the appearance of cellular tissue, I continued the dissection till the peritoneum was incised and the omentum, much reddened and tied in with the intestines by lymph, was reached. My fingers were now certainly within the peritoneal cavity, but a thick, doughy veil was interposed between them and every point searched for; the uterus could not be reached, or even certainly located. I now began to tear up carefully the adhesions in the lower angle of the wound, and worked my fingers in the direction of the uterus, and soon separated the omentum and some coils of intestine which were tied down to the uterus, bladder and surrounding structures from their attachments. As this was done, there welled up into the wound and over the intestines, which were now exposed, a gush of fœtid pus; this was caught and mopped up with sponges. An abscess cavity had been opened, and it was cleared out by sponges repeatedly introduced and withdrawn, wet with the bichloride solution.

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[1] Read before the Hampden District Medical Society, at the Annual Meeting, April 18, 1893, by the President.

A stage in the operation was now reached where in similar cases operators have many times considered their object accomplished, and having introduced a drainage-tube or packed the hole in the pelvis with iodoform gauze, have dressed the wound; or they have made a counter opening into the vagina, and having drawn a drainage-tube through to secure drainage at a more dependent point, have closed the abdominal wound, and later reported the case as one of pelvic abscess merely, not seeming to realize that a ruptured pus-tube was the most probable cause, and that its removal was the only treatment that would permanently cure the patient. I confess that I was debating in my own mind whether to do this, when I resolved to know more of the actual state of matters, and reintroduced my hand and commenced tearing up the adhesions which were everywhere present and bound all the parts together in an altogether unnatural relation. I soon had an irregularly shaped mass so far separated from its surroundings as to make it possible to bring it into view, and then was seen the larger pus-tube. I now present to the Fellows for their inspection the specimens removed at this operation.

SPECIMENS.

The large tube sprang from the right side of the uterus, and was prolapsed and coiled around behind the uterus, and extended over to the left side, where it had been most distinctly felt at my early vaginal examination. The irregular nodular projections which you see on this tube, several of which present openings into its interior and show the points of rupture, explain the sensation conveyed to the examining finger suggestive of malignancy. This tube was filled with pus, and had ruptured in several places, its wall becoming gangrenous; its size and shape are not inaptly represented by comparing it to a long, crooked link of sausage.

The portion of the tube attached to the uterus was so much diseased and dilated that in my attempt to ligate it, its wall at the upper portion was torn through, and the diseased tissue extended above the point of ligation over the cornua of the uterus. This with the suppurating stump was in a most dangerous condition, and was trimmed with scissors and thoroughly cleansed with the bichloride solution. The dilated left tube was soon separated from its attachments, tied as close to the uterus as possible and cut off.

You will observe that this tube fairly represents another short link of sausage, but shows no points of rupture or gangrenous appearance as does its fellow; its ragged wall does show where the adhesions were broken through as it was forcibly peeled out with my fingers. This tube was distended with creamy pus.

The pelvic and abdominal cavities were now thoroughly washed with clean warm water repeatedly poured in from a pitcher, a sponge on a holder being used to more thoroughly cleanse and expose the parts and dry them. There was very little hæmorrhage. A long, glass drainage-tube was introduced, reaching to the floor of the pelvis, and the wound was closed with catgut sutures. Iodoform gauze was used for dressing, and the rubber dam slipped over the end of the drainage-tube in the usual manner.

The operation was somewhat lengthy and the patient weak. Hypodermic injections of brandy were given, and the patient conveyed to her bed, which was supplied with hot-water bag, hot bottles and blankets. She reacted well, and complained that something burned her legs. It was thought to be the smarting of the hypodermic injections of brandy, and but little attention was given to it. A week later, however, two sloughs, one on the inner side of the calf of each leg, appeared, and occasioned a great deal of annoyance, and rendered the convalescence much longer and more tedious than it would otherwise have been. The hot bottles had burned her legs.

The discharge from the drainage-tube was considerable for the first twelve hours, after which it was so slight that the tube was removed thirty hours after operation. The wound, as was to be expected after being saturated with fœtid pus and gangrenous *débris*, did poorly; it united for the most part, but stitch-abscesses formed on both sides of the incision, and the pus burrowed between the layers of tissue so as to connect the various stitch-holes with each other and with the opening left by the drainage-tube. I made a cut on one side, an inch or more in length, through the greater thickness of the wall and parallel with the original incision, converting several of these stitch-holes into one large opening. This was done to improve drainage. There was considerable suppuration; but all of that portion of the wound above the drainage tube remained closed, although a probe passed into the stitch-holes on either side found its way readily through to the opposite side, and injected fluids did the same.

The peritonitis which was present before operation continued; and the outlook for several days was very gloomy. A saline was given on the third day, and did good. The chills and fever, which continued, could, after the fifth or sixth day, be attributed to the condition of the wound. The stitches were removed on the eighth day; and all the suppurating stitch-holes were well syringed with hydrogen peroxide, as was the hole left by the drainage-tube, which had been closed by a stitch when the tube was removed, but failed to unite. Three weeks after operation a probe would drop into it five inches; a strip of iodoform gauze was carried into it at each dressing to secure proper drainage.

This patient, notwithstanding a somewhat tedious convalescence, made a complete recovery, and is now engaged in her old occupation of general house-work. She has kindly complied with my invitation to be present to-day, and can be seen in an adjoining room.

At a former meeting of this Society I reported a case at some length, and presented the specimens removed. This was a case of hæmorrhagic ovarian disease which had progressed to that stage when further delay must have proved fatal. Notwithstanding the exhausted state of the patient, I made a double ovariotomy, removing a twenty pound cyst from one side and an ugly multilocular tumor from the other, which was filled with blood; it was tied down by adhesions, and helped to form the wall of an immense hæmatoma, which was at the same time cleared out. This patient made a rapid and complete recovery. I examined this woman August 21, 1892, one year after the operation, and she was perfectly well. She still remains well, and has come here to day to testify to that fact by her presence.

At our last annual meeting I also reported a case of ovariotomy, showing you the specimen removed from a feeble old lady, age sixty-seven, who made a rapid recovery. She is still well, and has come to this meeting, and will be seen in the adjoining room.

I have brought with me to-day, that the members might see it, a ruptured ectopic gestation-sack which I recently removed together with the ovary. Time will not permit a report of the case now, and I will dismiss it for the present by stating that the operation proved the correctness of the diagnosis and saved the life of the woman who was rapidly sinking from hæmorrhage. This lady is also with us to-day; and the members are now at liberty to see and examine these cases.

It has been suggested that these cases should be reported to some special society whose function it is to study and discuss cases of abdominal section, and where a sufficient number of experts may be found to appreciate their special features, to criticise their management and to suggest such lessons of instruction as their peculiar features might make possible; that this Society, being composed of general practitioners whose time and thought are given to matters of general medical and surgical import, should not be troubled by reports of cases that are without the usual routine of general practice and which really belong to the field of specialism.

Were the specialist to listen to this report of a case which typifies what he has already seen, I fancy he might criticise it unfavorably, especially that portion in which the symptoms are dwelt upon, and consider the description of the operation and the after-difficulties as a waste of time. He might marvel at the mention made of doubts before operation, and exclaim anew, "Diagnosis before operation is unnecessary; open the belly and find the disease." To a surgeon securely established in that elevated position the essentials of which rest upon the pedestal called specialism, this may seem conclusive: but to the great mass of physicians, like ourselves, engaged in the work of alleviating the ills and suffering of our fellow-men, not dwarfing our capabilities by confining our attention to the diseases of a single organ, but living and acting in a mental and professional world large enough to include the whole man, the mention of such clinical features as this case presents will not be without benefit.

It does us good — it does good to the community in which we live and which we serve — to come here with our cases of interest, especially our troublesome cases, and in our own way talk them over together. If we did more of it, and with less reserve, and more frankness in acknowledging our mistakes as well as shouting our successes, we would be happier, and our patients would profit accordingly. When the time shall come that the Fellows of this Society shall bring reports of their cases of pus-tubes (with the specimens in a bottle to be seen and studied), their cases of ovarian and other tumors (some of which may have reached that degree of danger that a life has been saved by an emergency operation), their cases of extra-uterine pregnancy and appendicitis — when, I repeat, the meetings of this Society, and of other societies throughout the land of which this is a fair type, shall be frequently occupied by the report and intelligent discussion of cases of this nature, with their proper treatment, then that dread disease peritonitis will have become far less frequent and will have lost many of its terrors.

The time will come when the doctor who signs the certificate of causé of death unqualifiedly as *peritonitis*, will be classed with that other who uses the convenient terms of *dropsy* and *heart failure*.

There is a cause back of the one as there is behind the other, and it must be recognized. We general practitioners meet these cases first, and upon us rests the responsibility of their early recognition — responsibility from which we cannot free ourselves except by a faithful and careful discharge of our whole duty. It is not intended that every family physician shall become an expert laparotomist, but that he shall study these conditions with the same care and diligence that he is wont to apply to other diseases; that he shall be acute enough to recognize their dangers sufficiently early to allow of their successful surgical treatment. Progress is often rapid after the appearance of symptoms, and the distance short in point of time between safety by operation and that unfortunate state where the forlorn hope only can be claimed as recompense for the dangers of an abdominal section. When confronted with symptoms which point in the direction of pelvic inflammation and abscess or ovarian disease, with possible internal hæmorrhage or other conditions of this region equally dangerous, it becomes us to consider carefully before assuming the responsibility of caring for the case with the idea of expectancy in mind. When in doubt as to the advisability of an operation, we should not wait, but make haste to consult with some professional brother who has had sufficient experience with this kind of cases to make his opinions valuable.

There is a class of excellent physicians whom we are pleased to call to our aid in most cases, but who seldom or never operate, and when the question of operation is to be decided, are almost certain to council delay or directly oppose it. This class of consultants should now be avoided; conservatism has no place in these cases; surgical aid is here imperative.

Lawson Tait and Joseph Price, with their many followers, are now teaching the world such surgical truths that pelvic pathology is being rapidly revolutionized, and we are being guided to more rational and successful treatment. We should keep in line with this movement, and so best serve our patients and secure our own reward.

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TWO CASES OF ANTE-PARTUM HÆMORRHAGE, BOTH TERMINATING FATALLY.[1]

BY M. V. PIERCE, M.D., MILTON, MASS.

Mrs. A., ii-para, thirty-two years of age, expected to be confined early in February, 1893.

During the hot weather of July she was greatly troubled by vomiting, which was finally relieved by replacing a retroverted uterus. In December, I was once called to see her on account of abdominal pain, which was evidently due to indigestion, and was relieved by a movement of the bowels.

With these exceptions she was unusually well. Her urine, examined on several occasions, was free from albumen.

On January 11th, at eight o'clock in the evening, thinking she heard some one coming, whom she did not wish to see, she suddenly got up from a rather low chair in which she was sitting, and at once putting both hands on her abdomen, said that it hurt her.

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[1] Read by invitation before the Obstetrical Society of Boston, March 11, 1893.

About a half-hour later she had a chill, and at ten o'clock a quite severe pain, which was followed at short intervals by others.

At half-past ten I was telephoned for, and arrived at the house at eleven. The patient told me she had not felt any motion for two hours; at nine o'clock had vomited the dinner she had eaten at seven: that the pain was quite constant, with occasional exacerbations, and was wholly low down in the abdomen. As it was a very cold night, and the room was exceedingly cold, I did not make a careful external examination, but simply noted that the uterus felt hard, as if in contraction.

Examining by the vagina, I found that the cervix was not taken up; the external os admitted the finger; the internal os was completely closed; head to be felt through the vaginal walls. A half-hour later I examined again and found the same condition, and determined that labor had not begun.

At 1.45, as she had vomited several times, and the pain continued, I gave her a subcutaneous injection of one-eighth of a grain of morphia. This eased her somewhat, but not completely; and I repeated it in an hour. She was then quiet till about six in the morning, when, after vomiting, a severe pain came on, and I found, on examination, the cervix taken up, os about an inch in diameter, and the occiput presenting. The pains now became very severe and very frequent, and in about an hour the child was born. Ether was given during the pains.

The cord was pulseless, and as I could not feel the baby's heart beat with my hand on the chest, nothing having occurred during the labor to cause the death of the child, I concluded there was no use in trying to resuscitate it.

As I was removing the baby from the bed, the mother had a violent pain, and the placenta with two large clots, and a good deal of liquid blood, was forced out into the bed. Up to this time there had not been the least trace of blood.

The uterus contracted well and at once, but to maintain the contraction I gave a hot vaginal douche. The amount of blood lost after the expulsion of the placenta was about as much as after an ordinary labor. The only noticeable symptom now was a rather quick pulse.

For an hour I kept my hand on the uterus, which kept up a good contraction, awaiting the nurse. After her arrival we began to right the bedding without disturbing the patient, when she became faint, and pulseless. She revived somewhat from stimulating subcutaneous injections, but soon relapsed; and, in spite of all the stimulation I could give, by the stomach, rectum, or subcutaneously, she died at half-past eleven, five hours after the birth of the child.

One of the clots passed with the placenta was organized, and the placenta showed that it had been separated from the uterus on about a quarter of its surface.

The loss of blood in this case was not sufficient to blanch the patient; the syncope came on suddenly, at least an hour after the expulsion of the placenta, and without further loss of blood; and I am in doubt as to the immediate cause of death.

The second case occurred in less than three weeks after the first one.

The patient was thirty-nine years old, vi-para, quite stout, and expected to be confined early in March.

There was a history of post-partum hæmorrhage at the last two labors.

On January 30th, after a night made restless by a severe cough, the patient was awakened at five in the morning by severe flowing. She got up at once, and walked into the bathroom, where I found her a half-hour later, standing in a bathtub, blanched and pulseless. I carried her into bed, and summoned Dr. J. S. Greene to my assistance.

As yet there had been no pain; but it soon began — a constant, bearing-down pain, in the lower part of the abdomen, with occasional pains like labor-pains in addition.

By vaginal examination the cervix was found to be taken up; the os easily admitted two fingers, but was quite rigid; occiput presented; no placenta to be felt; slight flowing.

It seemed best, under the prospect of pains coming on, to wait, which we did for about an hour. At the end of this time, the pains not having accomplished anything, and the patient having passed a clot of some four ounces of blood, we decided to empty the uterus as speedily as possible. The pulse at the time was 90, but very weak.

Having made all preparations, I gave the patient chloroform, and later ether, and Dr. Greene dilated the os manually, got hold of a foot, turned and extracted a dead fœtus, taking a half-hour for the procedure. He at once removed the placenta, which was attached to the posterior part of the fundus, a large amount of fluid blood coming with the liquor amnii.

With his hand still in the vagina he passed a tube into the uterus, and gave an injection of hot corrosive sublimate solution (1 to 4000), and followed it with hot vinegar and water, equal parts. This caused a good contraction, and stopped the flowing, not necessitating the packing with iodoform gauze with which we were provided. To keep up a constant contraction, besides pressure over the uterus a current of faradic electricity was used, one pole over the uterus, the other on the lumbar spine. By these means the flowing, except for a very slight oozing, was stopped. At short intervals subcutaneous injections of brandy, ether and nitro-glycerine were given; but the pulse remaining scarcely perceptible, a pint of one per cent. solution of salt was injected into the subcutaneous cellular tissues above the crest of the ilium, by means of an aspirating needle attached to the tube of a fountain syringe. The temperature of the solution in the syringe was 105°.

The pulse improved somewhat as a result of this, but only for a very short time: and after a half-hour another pint was injected into the other side, but without effect. Some oxygen was obtained, but the patient was moribund before it could be used.

She died two hours after delivery, evidently from loss of blood. The placenta showed evidence of having separated from the uterus at its centre, the space being about three inches in diameter.

A marked symptom in both these cases was a constant, severe pain, low down in the abdomen.

Permanganate of Potash. — Antal by experiments in the laboratory concludes that permanganate of potash is a very valuable antidote to certain organic poisons, among them muscarine, strychnine, colchicum and oxalic acid. It is used in solution of about one-half of one per cent.

A CASE OF CYANOSIS, WITH NECROPSY.

BY ALFRED KING, M.D., PORTLAND, ME.,
Surgeon to the Maine General Hospital.

This case is reported because so extremely rare, presenting, as it does, a peculiar, anomalous condition of the heart and circulation; also a cirrhotic liver as a cause of icterus in infants.

Albert E. H. was born at term, weighing eight and a half pounds, and apparently well developed. The cyanosis at birth, however, did not completely disappear, there remaining a slight purplish discoloration at the lips and beneath the finger-nails, and an almost black appearance of the veins of the scalp. Within a few days of birth icterus came on, which lasted several months and gradually disappeared.

Digestion was fairly good, giving but little trouble until within two months of his death. Nutrition was interfered with, the growth being in length, the arms and legs remaining thin and cold.

He was very quiet, with little activity of legs or arms. He bore an anxious, inquiring look, and laughed and played but little.

A slight œdema of the face appeared when he was about five months of age. This gradually increased, and later was noticeable in the hands and finally in the feet. The urine increased or diminished inversely with the œdema. The pulse was 120, gradually increasing to 140, and for the last month was 160. The heart's sounds were clear and distinct, but a slight blowing sound was heard over its base not connected with either sound. Respiration was very rapid, and accompanied by slight grunts. For the last month it was 60. There was a slight cough. He had occasional choking-spells while nursing.

The cyanosis was not affected by the position of the baby, neither was respiration nor circulation. Nor did he seem inclined to seek any particular position. Digitalis and sweet spirits of nitre increased the flow of urine and lessened the œdema, but did not lessen the respiration or circulation. Strychnine diminished the respiration and circulation somewhat, and improved the child's condition for a brief time.

The symptoms gradually grew worse and death came suddenly in a slight convulsion at the age of ten months and two days.

The necropsy showed the following peculiar conditions:

Lungs normal, no congestion. Heart, when distended, as large as a man's fist, due to enlargement of right auricle and ventricle. The valves throughout were normal. The pulmonary artery was as large as a man's thumb. The pulmonary veins united into a trunk of the same size as the artery and entered the *right* auricle. The foramen ovale, the size of a lead-pencil, was open, and afforded the only means of access of blood to the left auricle or left side of the heart. The aorta was the size of a lead-pencil. The ductus arteriosus was closed. The liver was of a nutmeg color, very small and hard. Its capsule was adherent, and it had all the appearances of a cirrhotic liver. The other organs presented no apparent abnormal condition.

Typhus Fever in France. — On May 12th the announcement was officially made that this disease was dying out, and that no more bulletins would be issued.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular Meeting, March 11, 1893, the President, Dr. Charles M. Green, in the chair.

Dr. M. V. Pierce, of Milton, reported by invitation

TWO FATAL CASES OF ANTE-PARTUM HÆMORRHAGE.[1]

Dr. W. L. Richardson said he thought that the course taken by the reporter was certainly the proper one. In the first case there were no indications for operative interference in the labor, and the hæmorrhage was so slight it certainly had nothing to do with the fatal issue. The case should not therefore be called one of fatal ante-partum hæmorrhage, but simply of sudden death in child bed from shock.

Dr. C. M. Green said that he should consider the first case as a sudden death in child-bed from shock, the small amount of hæmorrhage having nothing to do with it. He had had a case resembling this, but fortunately not fatal, where the patient without hæmorrhage suddenly went into a state of shock, the pulse 140. For five hours this condition lasted, the patient being nearly unconscious and could be roused with difficulty so as to be made to swallow stimulants at intervals.

Dr. M. V. Pierce said that Dr. Rogers, of Dorchester, had suggested that a catheter could have been passed up through the membranes in the second case, and hot water injected so as to stop the bleeding. Delivery could afterwards be brought about.

Dr. C. W. Townsend objected to this procedure, as valuable time would be lost, and he doubted whether it would accomplish its object for this reason: Hot water injected into the uterus causes the uterus to contract and close the bleeding sinuses, and in this way hæmorrhage is checked. If, however, the placenta or child is still in the uterus, this closure of the sinuses could not take place, and the bleeding would go on. He believed the only proper thing to do in cases of ante-partum hæmorrhage, as in the second case reported, was to deliver at once, as Dr. Pierce had done; and then the hæmorrhage could be stopped.

Dr. W. L. Richardson believed that immediate delivery was best for the mother, — the hot water douche could be given to check hæmorrhage after the uterus was empty, — and it was also best for the child, who had some rights.

Dr. G. H. Washburn read a paper on

THE TREATMENT OF SINUS FOLLOWING ABDOMINAL OPERATION: REPORT OF A CASE.[2]

Dr. J. Homans said he thought Dr. Washburn had been very skilful and successful in the treatment of this case, and was fortunate in finding the bottom of the trouble. He had previously etherized the same patient at the Massachusetts General Hospital, enlarged the opening but did not feel any track of the sinus. He got in two fingers and felt around the uterus, but everything seemed normal, so he contented himself with curetting the abdominal opening and sewing it up. It healed up solidly; and she left the hospital only to have it break out again within two weeks, when she fortunately came into Dr. Washburn's hands. The old view was that he who drained most, cured most; but he believed now in getting along as much as possible without drainage, for sinuses of a chronic nature were very apt to be left after the use of drainage-tubes, particularly rubber ones, which he considered much worse than glass ones. He has had a number of patients with chronic sinuses following laparotomy, mostly due to the use of drainage-tubes. These patients are well with the exception of forming about a drachm of pus in the twenty-four hours, and rarely have any rise of temperature. As a rule they will not allow anything to be done by way of operation for fear of making matters worse. Treatment by injections keeps the trouble under, but rarely cures it. In operating there is, of course, the great danger of contaminating the abdominal cavity with pus from the sinus.

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[1] See page 550 of the Journal.
[2] See page 546 of the Journal.

Dr. A. Worcester has not infrequently had sinuses left in his laparotomy cases. He believes that many of his earlier cases were due to the imperfect sterilization of the silk, and that with the more improved methods now in vogue, sinuses due to silk will be very infrequent.

Dr. G. Haven said he had never had a chronic sinus left after his cases, but had seen them where rubber drainage-tubes were the cause. He considered gauze by far the best to use for drainage, and it was least likely to cause chronic sinuses.

Dr. Edw. Reynolds said he had the privilege of seeing Dr. Washburn operate in this case and was impressed with the clearness of the guide to the offending point, the silk ligatures.

Dr. G. H. Washburn said that he did not usually employ drainage; but in this case, after separating the end of the sinus from the uterus and cauterizing the ovary, he considered drainage necessary, and used gauze for this purpose. He removed it, however, in forty-eight hours.

Dr. J. Homans said he generally left the gauze in till it was loosened naturally. He thought that a good deal of harm was often done by irrigation. It is a point requiring considerable judgment to decide when or when not to irrigate. If the temperature is all right, it is better to leave the gauze alone.

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Recent Literature.

Minor Surgery and Bandaging, including the Treatment of Fractures and Dislocations, Tracheotomy, Intubation, Ligation of Arteries and Amputations. By Henry R. Wharton, M.D., Demonstrator of Surgery and Lecturer on Surgical Diseases of Children at the University of Pennsylvania. 497 pages, 403 illustrations. Philadelphia: Lea Brothers & Co.

The title of the book describes its contents. The first one hundred pages treat of the different kinds of bandages, chiefly rollers; some of the Mayor handkerchiefs; plaster-of-Paris, leather, pasteboard and felt splints. The subject is illustrated with numerous cuts, which are well done, and more nearly represent the actual bandage than is usually seen. Part II, representing about one-half of the remainder of the work, is entitled "Minor Surgery," and describes asepsis, antisepsis, dressings, sutures, ligatures, anæsthetics, trusses, treatment of hæmorrhage, abscesses, tracheotomy and intubation. It contains much that is of interest and value, but at times oversteps the limits of the subject (where intestinal sutures are described), and does not always describe the best method. A still more objectionable feature is that a variety of different methods are at times given which have not received the approval of common usage. For example, the needle figured on page 231 is not a practical instrument. In a text-book of this character it is desirable that a student should not be confused by telling him what may be done. It is better to state only the best way as far as is possible. Fractures are well classified, and a point (namely, a statement of how long immobilization should be continued) which too often is ignored, is here fully and satisfactorily presented, and adds greatly to the value of the work. The concluding chapters on ligation of arteries and amputations are apparently complete, and are well illustrated.

The excellent quality of the cuts is a feature of this work.

The Diseases of the Nervous System: a Text-book for Physicians and Students. By Dr. Ludwig Hirt, Professor at the University of Breslau. Translated, with permission of the author, by August Hoch, M.D., assisted by Frank R. Smith, A.M., M.D. With an introduction by William Osler, M.D., F.R.C.P. 8vo; pp. xv, 683; with 178 illustrations. New York: D. Appleton & Co. 1893.

Dr. Hirt's work upon diseases of the nervous system has for several years ranked as one of the best German treatises, and it is well that it has been made accessible to the English-speaking portion of the profession. It has the merit of presenting the more important facts, and indicating briefly where information in regard to subordinate facts or hypotheses may be found. The arrangement, too, has certain unusual features. The section on the brain includes chapters on the anatomy and affections of the meninges and of the cranial nerves, and the section on the cord a chapter on the spinal nerves. A third section embraces diseases of the general nervous system, without and with an anatomical basis, and in the latter class he puts tabes dorsalis and paralytic demention. Such a classification is based on so sound a pathological basis that it seems strange that no one has done it before, and it would have been well if the author could have seen his way to classifying progressive muscular atrophy in the same section. The individual chapters are for the most part excellent. The arrangement is good, the style clear, the salient facts are well presented, and the discussion of hypothetical questions is omitted. Among the points to criticise we may note the omission of any special consideration of traumatic affections in a class by themselves, the various conditions being regarded as merely one form of hysteria, and the exaggerated value set upon hypnotism. Certain apparent omissions, as the treatment of myxœdema, are due to the fact that the original work is now four years old. A word must be said, in conclusion, in praise of the translators, who have put the work into excellent English.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, A.M., M.D. Second edition, revised and enlarged, with chromogravure plates and other illustrations. New York: D. Appleton & Co. 1892.

A second edition of Shoemaker's book has appeared, with some additions to the text. The first edition was thoroughly reviewed in the Journal, and we have nothing to add in the present instance.

THE BOSTON

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THE REPORT OF THE BRITISH LEPROSY COMMISSION.

THE recent agitation in England on the subject of the increase of leprosy in India, led, as will be remembered, to the formation of a leprosy commission, which left England in October, 1890, for the purpose of instituting a careful inquiry on the spot, into the question of the heredity and contagiousness of leprosy, its prevalence and distribution, and other etiological factors. This commission, composed of three members appointed by the College of Physicians, the College of Surgeons, and the Executive Committee of the National Leprosy Fund, and of two members from the Indian Medical Service, has just completed its report, after remaining in India for twelve months.

The opening pages of this report deal with the methods pursued by the commission. Five months were employed in travelling from place to place, inspecting the various asylums and hospitals, and studying the conditions which might offer a ground for etiological deductions. Over 2,000 lepers were personally examined, and questions were sent to all civil surgeons, with a view to obtaining their opinion on the various mooted questions connected with this subject.

An analysis of 2,313 cases of leprosy showed that 56.6 per cent. were of the anæsthetic type, 12.2 per cent. of the tuberculous, and 31 per cent. were mixed cases. In more than 43 per cent. the disease had not manifested itself until adult life. It has been claimed that census returns underestimate the number of lepers, but the commission found that of 987 patients produced as lepers, 9.5 per cent. were affected with some other disease, and not with leprosy. With regard to the geographical distribution of the disease in India, it was not found that the coast, river-banks or valleys produced more cases than other localities, nor could any connection be found to exist between the geological formation of a district and the number of lepers it contained.

It is emphatically denied that there has been of late an alarming increase of the disease in British India. At most, the numbers have remained stationary. The commission admit that there appears to be some connection between the dampness of climate and the prevalence of the disease; whereas they could not find that the leper ratio varied according to the density of the population. According to the census, leprosy is especially prevalent in districts where cholera is endemic, which is accounted for by the fact that the cholera districts possess certain permanent unsanitary conditions favorable to the spread of leprosy. Great importance is attached to unsanitary conditions, and there was found to be evidence that the disease was more prevalent in the poorer, dirtier districts. No race or religious sect is exempt from leprosy, although it was found to be more prevalent among the natives than among the Europeans, owing, undoubtedly, to the better hygienic and social condition of the latter. Some of the religious sects that do not mingle with the native population, and enjoy greater prosperity, are less subject to the disease.

As to the important question of a prevention of the spread of leprosy, the recommendations of the commission rest upon the broad basis of hygiene. As the bacillus is too widely spread to be personally attacked, attention should be directed to an improvement of the conditions favorable for its development. Mr. Tebb and the anti-vaccinationists, who have turned their attention of late to the subject of the spread of leprosy by vaccination, receive no support from the conclusions of the commission. It is proved that there has ***not*** been a marked increase in leprosy during the last thirty years, and that there is no evidence that leprosy has increased with the extension of vaccination. The statements of Mr. Tebb and others that natives hide their children for fear of infection from vaccination, or are violently opposed to vaccination, are untrue. Ninety-three bacteriological examinations of vaccine lymph were made, without the detection of a single undoubted leprosy bacillus.

The commissioners came to the conclusion that leprosy in India is not an inherited disease, nor is there evidence of value that a specific predisposition to the disease can be transmitted. They could not find a case of congenital leprosy, and in only five or six per cent. of the 2,000 cases examined could a ***possible*** family taint be traced. Only four to seven per cent. of the children born of parents, both of whom were afflicted with leprosy before marriage, became lepers. All but one of the children at an orphan asylum, born of leper parents, remained well.

In their chapter on the question of contagiousness the commissioners lay more stress on predisposition of the individual, and less upon transmission of the parasite, than will be likely to find favor in the scientific world; and it is gratifying to note that a majority of the London committee takes exception to their conclusions on this point, and advocates a moderate and reasonable mode of segregation of lepers. The commis sioners believe that although leprosy must be classed among the contagious diseases, the risk of contagion is so small that it may be practically disregarded, and that all attention should be directed to a removal of the predisposing causes. For their belief in non-contagiousness they adduce many reasons. They could find no instances where contagion could be positively proved; members of a family were not found to be sufficiently often affected; the disease is rarely communicated from husband to wife or *vice versâ*; few of the persons who had been in close contact with lepers, either as their attendants in asylums, or in other ways, were found by the commission to have contracted the disease. Against these propositions of the commission may be urged the instances in literature of contraction of the disease by persons living in a community free from leprosy, after being in close and long-continued relationship with a leper; the fact that the bacillus is always present in leprosy and must, according to our modern views, be transmitted from some previously existing case; and the diminution of leprosy in Norway since methods of segregation were instituted. That it is mildly contagious only, may be admitted; but that infection is of less importance than predisposition has not been shown by the commission.

The question of infection from water, mosquitoes and other insects was investigated by the commission. Of 205 persons who drank out of the same vessels with lepers, five to seven per cent. became subsequently affected. No leprosy bacilli were found in mosquitoes gorged with leper blood, or in the contents of the pustules in scabies. The theory that fish are responsible for leprosy, an old theory recently revived by Mr. Jonathan Hutchinson, is summarily disposed of. Fifty lepers were found who had never touched fish. Water and salt are also rejected as vehicles of infection. The theory that leprosy is a phase of inherited syphilis is discussed and excluded.

With regard to the treatment of leprosy, it is urged that although the disease is incurable much may be done to alleviate the condition of the sufferer by proper attention to hygiene, and for this reason voluntary asylums throughout India are recommended. The various oils commonly used in India are palliative, but not specific. Any oil thoroughly rubbed into the skin may produce some amelioration. Unna's treatment by ichthyol and resorcin was wholly unsuccessful. Arsenic they regard as the most valuable drug for palliative treatment. Salol was a decided failure.

ICE SUPPLIES.

A FEW years since, the State Board of Health was directed by the Legislature to investigate the ice supplies of Massachusetts, and to report upon the same to the General Court. Considerable interest was manifested in the subject at that time, since it was found that large quantities of ice were cut from ponds and streams, into which filthy sewage was allowed to flow in unlimited quantities.

As a rule, Americans use ice very lavishly as compared with other nations, and are not very scrupulous as to its source or quality. So true is this fact that a commission which was sent to Chicago last December by the London *Lancet* for the purpose of investigating the Chicago water-supply, took special pains to report upon the "foolish and mischievous" habit of the people of the United States, of using ice in drinking-water, by melting it in the water.

The report of that commission appeared to consider the subject as of more serious consequence than that of the polluted water-supply of Chicago. As a matter of fact, however, the ice of Chicago is brought from inland lakes not subject to pollution, and its presence in the Chicago water would probably improve the quality of the latter.

As a result of the extremely mild winters previous to that of 1892–93, the manufacture of artificial ice has sprung up in Massachusetts, and quite an industry has been developed in that direction. A recent report of the Board of Health shows that the process of freezing in this case is quite different from that which nature employs. Natural ice freezes at the surface of still waters (ponds and slowly-moving streams). Impurities are chiefly excluded downwards into the water by the process of freezing. As the ice continues to freeze, other and coarser impurities flow upon the surface from surface washings of the land, and dust and dirt are brought by the winds and lodge upon the ice and its covering of snow, so that the upper layer of ice (the snow ice) contains most of the impurities of the ice.

Artificial ice, a considerable quantity of which is now used by the general public, is made in an entirely different manner, the water from which it is made being put into a tank, while the cooling process is applied on all sides of the tank, so that the ice begins to freeze all around the sides of the tank, driving whatever impurities may exist into the central core of water which is frozen last. The method which is used in its manufacture is that of freezing by ammonia. Galvanized-iron tanks, holding from two hundred to two hundred and fifty pounds of water, are immersed in brine, which is cooled below the freezing point of water by pipes which convey the gaseous ammonia. The freezing goes on slowly from the sides of the tanks, and it generally requires about two days to form a solid cake of ice.

As the result of previous investigations made by the Board, it was shown[1] that, in the process of slow freezing in lakes and ponds, the elimination of dissolved mineral substances was nearly complete, and that of the dissolved organic matter in the water (as indicated by the ammonias), only six per cent. remained in the clear ice formed below the surface.

In the process of making artificial ice, it is obvious, the present report states, that the ice block, *as a whole*, must have identically the same composition as the water from which it was made; but we should expect that, in the slow process of freezing, the ice layers first

[1] Report for year ending September 30, 1891.

formed would (if the water contained any dissolved impurities) be purer than the original water, and that the impurities would be gradually concentrated in the remaining water. This is found to be the case, and the inevitable result is, that the portion of ice last formed contains the impurities of the water in a highly concentrated condition.

In order to show this, all of the blocks of ice examined were divided into six portions, and each portion, after melting, was analyzed separately. These portions represented the upper, middle and lower thirds of the outside, and the upper, middle and lower thirds of the inner core. In nearly all cases it was found that the lower third of the core contained the greater part of the impurities originally present in the water.

In one case, where rubber hose is used to fill the tanks, the distilled water had a faint odor of rubber, and this odor was quite marked in ice taken from the lower portion of the core, while in the upper portions of this ice no odor was perceived. The number of bacteria in all the samples of ice was very low, and in many there were none present. A small amount of free ammonia was present in all the samples of ice, which was attributed to a small leakage of the machine. In many samples an appreciable amount of zinc was found, doubtless having its origin in the zinc coating of the galvanized pipes used to conduct the water, or in the coating of the tanks in which it is frozen.

The report is summed up in the following conclusions:

(1) Artificial processes of freezing concentrate the impurities of the water in the inner core or the portion last frozen.

(2) The impurities are reduced to their lowest terms by the use of distilled water (condensed steam) for the manufacture of ice.

(3) The number of bacteria in artificial ice is insignificant, under the prevailing methods of manufacture.

(4) The amount of zinc found in the samples of melted artificial ice under observation is insufficient to injure the health of persons using such ice.

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THE PHYSICIAN AND SURGEON.

THE first great differentiation of the healing art was into medicine and surgery.

The city physician is likely to have a predilection for the one or the other. If he has manifested any particular expertness in surgery, this may become his principal calling.

His country *confrère* is expected to be proficient as a physician and expert as a surgeon. He is liable at any time to be summoned to a hernia case which may require instant operation, to find and ligate a bleeding vessel, or to take the care of a compound fracture. If he lives at a distance from any city, it may fall to his lot to perform lithotomy, possibly laparotomy for volvulus or appendicitis, or even Cæsarian section. It might be supposed that the country physician, being summoned to all emergencies would be ready for any emergency, but practically it has been found that he is conservative, cautious, and even timid. In a difficult case, unless moved by an impulse of self-confidence, he would prefer to call a consultant from a distant town to take the responsibility. In fact, most country surgeons are braver when away from home than they are when at home. The reason is the storm of criticism which the country surgeon must face. An unsuccessful surgical operation will be the subject of conversation everywhere within an area of ten miles; and the demerits of the operation and of the operator will be canvassed in a way to wring one's heart. The resident surgeon may escape the odium of the failure by throwing the responsibility on his principal, who, mainly dependent on another community for his support, will be less morbidly sensitive to the criticisms of that particular neighborhood. The relations of the country practitioner to his clientèle are somewhat trying. He is on terms of friendship and even intimacy with most of his patrons and may be dependent in almost any particular case for his fee on the success of the operation. If he has a vigorous competitor, the community is invariably divided into two parties, one of which is always barking at his heels.

Another reason for the timidity of the ordinary country practitioner, is that he really sees comparatively little surgery, the great majority of his cases being medical. Grave accidents are of infrequent occurrence, and occasions for major surgery are few. Again, he is, perhaps, poorly equipped with surgical instruments and even with the best surgical treatises.

The complaint of the city practitioner is that most surgical cases go to the hospitals for treatment, and if he is not on the hospital staff, he is likely to fare hard for opportunities to exercise his talent and make for himself a reputation as a surgeon. Seeing little or no surgery (except as he attends the operations in the hospital) he loses interest in that department of his profession, and he is in danger of becoming awkward and unskilful in even the simple operations which he may occasionally be obliged to perform, such as opening a deep abscess or reducing a strangulated hernia.

That it does not pay the general practitioner to neglect surgery, it is hardly necessary to say. There is in a well-performed surgical operation a satisfaction, inferior, it is true, to that mental satisfaction attending a carefully reasoned diagnosis, but none the less genuine; and surgical specialists have little reason to complain that their practice is not sufficiently remunerative.

It does happen that physicians *medically* treat patients who need surgical aid; letting the victim of appendicitis die for the want of a timely laparotomy; neglecting to apply the curette to the diseased endometrium when months of suffering might thereby be saved; to exsect a necrosed bone which is causing a great local and general disturbance; or to strengthen the incurving spine of a rickety child by suitable supports.

On the other hand, how often has the mistake of the surgeon in regard to such comparatively simple matters as whooping-cough or pneumonia, been the source of grave inconvenience, if no worse, to the family! How often have the early symptoms of locomotor ataxia or of general paralysis been overlooked by the attendant with surgical proclivities, and the golden moment for treatment been lost! To say this, is to say that the field of our professional study and practice is immense and that to err is human.

Doubtless in the remoter country he who would do the most good in his profession and be truly successful, must take all medicine for his province (even if he seems now and then to trench on the domain of the specialist), and show as much skill with the scalpel, or in adjusting a splint, as in diagnosticating a spinal sclerosis or in laying down rules for the administration of mercurials in a syphilitic dermatosis.

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MEDICAL NOTES.

Medical Examiner. — The Governor of Massachusetts has appointed Robert Bell, M.D., of Medway, to be medical examiner of the seventh Norfolk district.

Tracheotomy without a Tube. — In connection with our note on this subject, on page 490, our attention has been called to the fact that "Tracheotomy without Tubes" was the title of a monogram by the late Dr. Henry A. Martin, in 1878.

Suit against the Normannia. — Judge A. B. Beers, of Bridgeport, has brought a suit against the Hamburg-American Packet Company in the United States District Court, for insufficient accommodations, especially deficient supply of water, in the steamer *Normannia* during her famous cholera trip last September; also that assurance had been given that the steamer was not to carry steerage passengers. The captain of the vessel testified that the passengers were so afraid of the ship's water-supply that some of them washed in Appolinaris. All the water of the boat was boiled previous to its use. It was also shown by the defence that there had been an opportunity at Southampton for the passengers to return on the tender, after they knew that steerage passengers were on board. The ship's surgeon was not sure when he first found cholera, and he was not sure of any symptoms. He admitted telling the passengers there was none of the disease on board, but he said he thought it was his duty to do so in order to avoid a panic. He was not sure whether he told the captain before reaching Southampton that there was sickness on the vessel.

The New York Institution for Epileptics. — The Governor of New York has vetoed the bill which was passed by the legislature, establishing an epileptic colony at Sonyea. It happened that a very well adapted property could be bought at a small cost by the government. Apparently, however, the State cannot afford any more charitable institutions. The governor says that the nine insane asylums have cost the State about $11,000,000, while probably, at least $9,000,000 has been spent in other similar institutions. The present session of the legislature have appropriated $4,200,000, of which nearly three million was for the insane, $240,000 for the deaf and dumb, $85,000 for the blind, half a million for youthful offenders, $177,000 for idiots. This is nearly half the total appropriation from the general fund and almost as much as the State revenues from indirect sources.

Cholera in France. — The cholera has so far in France, this spring, been practically limited to the departments of Morbihan and Finistére, especially in the neighborhood of Lorient and Quimper. Isolated cases are reported in other towns, but the reports are in many cases denied. With the disease raging in Russia and existing in France, with occasional reports of a case in Hamburg and other towns, the present outlook may be considered as doubtful. Last summer the quick spread of the disease took place before much or any measures to prevent it had been taken. This year the preparation to resist it at almost all points is much better organized.

The Treatment of Inebriates. — The question of the care of habitual drunkards, which may be said to be in the experimental stage in this State, is now attracting the attention of the English government. A committee, appointed for the purpose, have made a report to the House of Commons. They recommend that a person coming within the definition of a habitual drunkard may be committed for a maximum period of two years to a special retreat, on the application of their relatives. For cases of habitual drunkards who come within the action of the criminal law, they recommend that magistrates should have the discretion of placing such persons upon special probation for a considerable period, or of committing them to a reformatory institution, especially established, where the discipline and labor could be made different from that of ordinary prisons. In case such special institutions could not be erected, existing accommodations in prisons, lunatic asylums and poor houses might be utilized. Magistrates should have the power to commit to such institutions, for lengthened periods, with or without previous punishment or imprisonment: all who come within the action of the criminal law; those who fail to find the required sureties; those who have been brought up for breach of their probation; those who are proved guilty of ill treatment or neglect of their wives and families; and those who have been convicted of drunkenness three or more times within the previous twelve months.

NEW YORK.

Typhus Fever. — A few cases of typhus fever were reported last week, and were promptly isolated. Four deaths from the disease occurred at North Brother Island.

Speech without a Larynx. — At one of the sessions of the American Laryngological Association which held its annual meeting at the New York Academy of Medicine on May 22d, 23d, and 24th, Dr. J. Solis Cohen, of Philadelphia, exhibited a unique case in which the patient was able to talk, and even sing, after complete extirpation of the larynx. The operation was performed on account of a malignant growth, and some months later, Dr. Cohen, finding that he could produce certain vocal sounds, encouraged him to make systematic attempts at articulate speech. This he did, with the remarkable result mentioned.

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Miscellany.

DIETARY FOR THE SICK.

Sir Dyce Duckworth, of London, in a paper published in the *Practitioner*, gives a short *résumé* of some of the principal rules for diet which he has found of use. Fashions in diets seem to be as changeable as in drugs; for instance, calf's foot jelly was at one time extensively used and considered very nourishing. It then entirely went out of fashion and is now coming in again, and as a temporary form of nourishment possesses considerable value. Beef-tea also has been through a similar experience. As ordinarily prepared, it may do harm in cases of rheumatism, and it often acts too much as an aperient to be used in typhoid fever or in an irritable condition of the bowels. This objection does not hold in cases of mutton, veal or chicken broths. The diet for acute and for chronic sickness should not be the same. It is especially for the former that fresh beef-tea and alcohol may be used for food. Peptonizing either beef-tea or milk is often better dispensed with unless there is marked failure of secretion of gastric juice. It is often better to vary the broths given. Milk and veal broth may be given together, but it is better not to give alcohol with animal broths, although liquors may be given with milk. Whey is of considerable value for many dyspeptics and in cases of intestinal disease. It may be made astringent with alum; one drachm of powdered alum is added to a pint of hot milk and the whey strained off. Equal parts of cream and hot water may be used as a substitute for milk, or koumiss preferably about one week old. Starch should be avoided in fever but water may generally be given freely. In chronic disorders arrowroot may be substituted for bread. A mixture may be made by stirring into a cupful of milk-arrowroot half a teaspoonful of raw arrowroot powder, and ten grains of powdered cinnamon, in cases of gastro-intestinal catarrh. In febrile states, tea and coffee are often useful, and may diminish the necessity of alcohol. Large meat-eaters may sometimes, with advantage, be ordered to substitute fish. In cases of nephritis, the author thinks well of the skim-milk treatment if it is well borne, otherwise bread, biscuit, butter, light farinaceous food, sometimes with an egg in it, potatoes, and other vegetables and cooked fruit are available, with occasionally fat bacon, and a little mutton or chicken. In many cases of gout and gouty habit of body the author often finds inadequate diet prescribed. The prohibition of meat and wine is often bad and many patients are better for both. The subject of alcoholic drinks receives too little attention from the profession. A good wine is generally better than any liquor, but an adulterated wine is worse.

THE DRESDEN SANITARY CONFERENCE.

This international sanitary conference met at Dresden on the 7th of March, and remained in session until April 15th. Nineteen countries sent delegates, and twenty-eight general questions were discussed. A certain amount of secrecy was maintained, and a full report has not yet been published, but a treaty has been drawn up and signed by ten of the countries, including Germany, Austria, France, Italy and Russia. Among those who have not yet signed are Great Britain, Spain, Turkey and Sweden. According to the treaty the governments agree to notify every appearance of a focus of cholera on their territory with statistics. Restrictions shall be put against products at the infected area and not against the whole country in which the epidemic occurs. All imports shall not be detained, but only those enumerated and considered dangerous. The measures which the Government may take to protect its frontier are also agreed upon, and are founded upon medical inspection, disinfection of clothes, sanitary passports and the surveillance of passengers in the country for a certain length of time, generally about five days. There shall be no land quarantine, and only those actually suffering or suspected of having cholera shall be detained. Ships which are considered infected must disembark their infected passengers, and they are to be isolated. Other passengers may be held for a specified period, but if the ship is merely suspected, the passengers are not to be detained except for inspection. Ships carrying immigrants may be subject to such special regulations as the country shall decide. The navigation of the Danube is subject to a set of provisional regulations, to be removed after certain reforms have been completed, but no discrimination of the ships of different countries is to be made.

The Congress undertakes only the question of cholera in Europe. Another conference is to be held to consider Mecca, the Persian Gulf and other Oriental places.

The important and valuable work which this conference has accomplished consists principally in the agreement that cholera shall not be hushed up, that unnecessary and absurd regulations to trade shall not be arbitrarily enforced; that the passengers and their luggage shall not be disturbed unnecessarily and shall not be subject to absurd quarantine.

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CHARLES P. STRONG, M.D.

At a meeting of the Boston Society for Medical Improvement held on May 22, 1893, it was voted to enter the following notice upon the records of the Society:

> In taking official notice of the death of Dr. Charles P. Strong, the Boston Society for Medical Improvement desires to express its appreciation of the great loss it has sustained, of one of its most active members.
>
> Dr. Strong was peculiarly fitted for the work in which he was especially interested, gynæcology, and, already prominent, was fast establishing a wide-spread reputation in this branch of medicine.
>
> His place in this community will be hard to fill; his untiring zeal, his devotion to his patients and his self-sacrifice, should long be remembered and imitated by those who come after him.

Correspondence.

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

New York, May 2[illegible], 1893.

Mr. Editor: I beg to inform you, and your readers and exchanges through you, that there is [illegible] to the rumors referring to a postponement of the Eleventh International Medical Congress. Such is the information conveyed to me by a letter of the Secretary General, dated Genoa, May 15th.

It is officially announced, that part of the Fifteenth Section will be dedicated to the exclusive consideration of cholera and quarantine. Professors Cunningham and Koch are expected to participate in the proceedings of their sub-section.

Beside the North German Lloyd, the Hamburg American Packet Company, and the Compagnie Générale Transatlantique, the Netherland American Steam Navigation Company, 139 Broadway, New York, offers reduced rates to the visitors of the Congress. The Hamburg American Packet Company writes to say that the families of members of the Congress are entitled to all the reductions.

Very respectfully yours, A. Jacobi.

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PROGRESSIVE MEDICAL JOURNALISM.

Massachusetts, May 23, 1893.

Mr. Editor: — I fear your standard of what to do for those who have medical cards in the Journal is not quite up to that which prevails in another State, as you will see by the enclosed.

May 20, 1893.

Dear Sir: — The M—— P—— is a stylish, attractive and well-edited magazine and is sure to reach every doctor in ——, covering this State completely. On request, we will send you a sample copy. Observe its large patronage and literary contents. Battle & Co., Rio Chemical Co., Reed and Canrick Co., McArthur Hypophosphite Co., James I. Fellows, New York Pharmaceutical Co., Parke, Davis & Co., and many of the most prominent advertisers have continued with us ever since we started. Personally, we look to the interest of the advertiser. Our lowest cash rate is forty per cent. off the enclosed schedule. That would make the cost of one page one year $120, half page $72, quarter page $42. This is our lowest rate. We will write up for you frequent reading notices and distribute advertising matter of private hospital to a host of our medical friends and acquaintances provided you advertise with us. You know what results you might expect from this. An early reply will oblige

Your obedient servants,
The M—— P—— Company.

Will *you* "write up frequent reading notices" for me? Will *you* "distribute advertising matter of my private hospital to your host of medical friends and acquaintances?" Can *any one* tell "what results I might expect from this?"

Knowing how progressive you are in your management of the Journal, I take the liberty of calling your attention to the methods employed by your "stylish, attractive and well-edited" rival magazine, a word to the wise, being sufficient.

I will not limit you as to the length of the "reading notices," and will furnish you as many copies of my last circular as you desire. You will, of course, pay the express.

Yours very truly, B.

COLUMBIA COLLEGE GENERAL CATALOGUE.

At a meeting of the trustees of Columbia College, held on the [illegible] of March, the preparation of a new general catalogue of officers and alumni was authorized, and a committee, consisting of Prof. J. Howard Van Amringe and Mr. John B. Pine, clerk of the board, was appointed to prepare the same. The new edition, which is to be issued in 1894, will be the eleventh since the foundation of the college, and will be also the most elaborate and comprehensive. The dead and living alumni of the college now number considerably more than eleven thousand. In previous catalogues all alumni have been divided into schools and arranged by classes, with an alphabetical conspectus. Only the degrees of the graduates were added to the names. It is the intention of the present committee, for the first time, to supplement the names of living alumni with their addresses and with such further information as may properly enter into a work of this description, including the professions of the men, their degrees, the colleges where they were [illegible], judicial, military, clerical, or political, etc. While the committee is in possession of the [illegible] of the alumni, the list of graduates whose whereabouts are unknown, is still appallingly long. To locate these men will be a difficult and [illegible] plished by patient and persistent effort on the part of the committee, entailing a great amount of clerical work, correspondence, etc., and by the cordial co-operation of the alumni themselves. It is this co-operation which is most earnestly desired by the committee, and they appeal to every alumnus of the college, no matter of which school, to assist them with whatever pertinent information may be in his possession. It will at least be possible for every graduate of Columbia who reads this to forward to the committee his own name, class and present address, with such other facts regarding himself as he deems material. The list of the missing among the graduates in medicine is, notwithstanding the excellent catalogue of the College of Physicians and Surgeons, published in 1891, especially lengthy. Physicians holding diplomas from the medical school are most urgently requested to respond. Alumni who may be so far interested in the progress of this important undertaking as to go beyond the data concerning themselves will confer a special obligation upon the committee if they will inform them (1) of any living graduate known to be now residing or practising his profession outside of the United States, with his address and class, when known; (2) of the death of any graduate occurring within the past five or six years, date and place, when known; (3) of recent changes of address among alumni; (4) of anything else suggested by the foregoing description of the committee's intentions. The work, when completed, will be circulated generally among the alumni, and it is hoped that it will exert an important and sensible influence in bringing them into closer union, besides serving many useful purposes that need not be here detailed. All correspondence may be addressed to the Committee on the General Catalogue, Columbia College, New York City.

RECORD OF MORTALITY

For the Week ending Saturday, May 20, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Scarlet fever.	Diphtheria and croup.	Cerebro-spinal Meningitis.
New York	[illegible]	862	307	17.88	18.96	2.76	5.76	2.76
Chicago	[illegible]	—	—	—	—	—	—	—
Philadelphia	[illegible]	—	—	—	—	—	—	—
Brooklyn	[illegible]	[illegible]	[illegible]	[illegible]	20.54	2.08	3.38	.78
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	10.56	24.64	[illegible]	3.08	—
Baltimore	[illegible]	—	—	—	—	—	—	—
Cincinnati	[illegible]	[illegible]	36	[illegible]	50.25	—	4.08	—
Cleveland	[illegible]	[illegible]	[illegible]	11.11	9.09	—	5.05	—
Pittsburg	[illegible]	—	—	—	—	—	—	—
Milwaukee	[illegible]	—	—	—	—	—	—	—
Washington	[illegible]	[illegible]	47	[illegible]	18.40	—	[illegible]	.92
Nashville	[illegible]	[illegible]	10	[illegible]	17.40	—	—	—
Charleston	56,048	—	—	—	—	—	—	—
Portland	[illegible]	15	[illegible]	—	13.33	—	—	—
Worcester	[illegible]	[illegible]	[illegible]	17.92	30.72	7.68	2.56	5.12
Lowell	[illegible]	[illegible]	[illegible]	4.34	28.21	—	—	—
Fall River	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—
Cambridge	74,644	[illegible]	[illegible]	13.80	[illegible]	[illegible]	3.45	—
Lynn	[illegible]	16	[illegible]	18.75	—	[illegible]	[illegible]	—
Springfield	[illegible]	22	1	[illegible]	4.55	—	—	—
Lawrence	[illegible]	—	—	—	—	—	—	—
New Bedford	44,947	16	[illegible]	[illegible]	12.50	—	—	[illegible]
Holyoke	40,099	14	[illegible]	14.28	14.28	—	—	7.14
Brockton	[illegible]	11	2	—	27.27	—	—	—
Salem	31,495	11	[illegible]	9.09	18.18	—	—	—
Haverhill	[illegible]	11	3	—	27.27	—	—	—
Chelsea	29,479	[illegible]	3	30.00	—	—	—	10.00
Malden	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Newton	[illegible]	[illegible]	6	[illegible]	—	—	—	6.25
Taunton	26,464	[illegible]	1	—	40.00	—	—	—
Gloucester	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	12.50
Fitchburg	[illegible]	—	—	—	—	—	—	—
Waltham	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—
Quincy	[illegible]	[illegible]	[illegible]	[illegible]	16.66	—	16.66	—
Pittsfield*	[illegible]	[illegible]	1	—	[illegible]	—	—	—
Northampton	[illegible]	1	—	—	—	—	—	—
Everett	14,745	[illegible]	—	—	[illegible]	—	—	—
Newburyport	14,031	—	1	—	—	—	—	—
Amesbury	13,561	1	1	—	50.00	—	—	—

Deaths reported 2,155: under five years of age 749; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers), 292, acute lung diseases 414, consumption 285, diphtheria and croup 85, scarlet fever 45, diarrhœal diseases 39, cerebro-spinal meningitis 34, whooping-cough 27, typhoid fever 22, measles 17, erysipelas 11, typhus fever 6, malarial fever 3, puerperal fever 2, small-pox 2.

From diarrhœal diseases New York 20, Brooklyn 6, Washington 4, Boston and Cleveland 3 each, Fall River 2, Lowell 1. From whooping-cough New York 13, Brooklyn 11, Cincinnati 2, Cambridge 1. From typhoid fever New York 6, Cincinnati 4, Boston and Cleveland 3 each, Washington 2, Brooklyn, Lowell, Holyoke and Chelsea 1 each. From measles Brooklyn 5, Cincinnati 4, New York and Boston 2 each, Worcester, Salem, Waltham and Everett 1 each. From erysipelas New York 6, Brooklyn 3, Springfield and Chelsea 1 each. From typhus fever New York 6. From malarial fever Brooklyn 2, Nashville 1. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending May 13th, the death-rate was 18.6. Deaths reported 3,676; acute diseases of the respiratory organs (London) 304, measles 112, diphtheria 96, whooping-cough 86, diarrhœa 57, scarlet fever 41, fever 18, small-pox (London 13, Oldham 4, Manchester 3, Birmingham, Salford, Halifax and Hull 1 each) 23.

The death-rates ranged from 10.0 in Burnley to 27.0 in Plymouth; Birmingham 18.7, Bolton 22.7, Bradford 16.2, Croydon 10.5, Huddersfield 19 8, Leeds 21.8, Leicester 20.0, Liverpool 25.6, London 17.7, Manchester 22.0, Newcastle-on-Tyne 23.3, Nottingham 13.9, Salford 21. 5, Sheffield 19.1, Sunderland 17.8, West Ham 11.9.

METEOROLOGICAL RECORD,

For the week ending May 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...14	29.67	49	55	43	96	93	94	N.	E.	10	4	O.	F.	0.09
M..15	29.81	55	62	48	88	88	98	N.W.	E.	3	1	C.	F.	
T..16	29.78	50	53	48	90	100	95	N.E.	N.E.	6	17	O.	R.	0.09
W .17	29.38	57	67	47	97	89	93	S.	S.	9	11	O.	F.	1.05
T..18	29.40	56	61	50	91	82	86	S.	S.W.	8	12	O.	C.	0.03
F..19	29.74	56	62	50	69	72	70	N.W.	N.W.	13	16	F.	F.	
S..20	30.01	58	71	45	64	64	64	W.	S.	9	18	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 20, 1893, TO MAY 26, 1893.

The leave of absence on surgeon's certificate of disability, for treatment in the Army and Navy General Hospital, granted **Captain Freeman V. Walker**, assistant surgeon, is extended to June 30, 1893.

First-Lieut. James Kennedy, assistant surgeon, U. S. A., (recently appointed), will proceed from Troy, Abbeville County, S. C., and report in person to the commanding officer, Fort Riley, Kansas, for duty at that post.

By direction of the President, **Major John O. Skinner**, surgeon, will report in person to **Colonel Henry W. Closson**, Fourth Artillery, President of the Army Retiring Board at Washington Barracks, D. C., when required by the board for examination by it.

First-Lieut. Alexander N. Stark, assistant surgeon, will proceed from Norfolk, Va., and report to the commanding officer, Fort Monroe, Virginia, for duty at that post.

First-Lieut. John S. Kulp, assistant surgeon, will proceed from Wilkesbarre, Pa , and report to the commanding officer, Columbus Barracks, O., for duty at that post.

First-Lieut. James D. Glennan, assistant surgeon, U. S. A., is relieved from further duty in the Department of Texas, and ordered to join his proper station, Fort Sill, Oklahoma Territory.

First-Lieut. Edward L. Munson, assistant surgeon, will proceed from New Haven, Conn., and report to the commanding officer, Jefferson Barracks, Mo., for duty at that post.

First-Lieut. Charles E. B. Flagg, assistant surgeon, will proceed from Indianapolis, Ind., and report to the commanding officer, Presidio of San Francisco, Cal., for duty at that post.

First-Lieut. Charles Lynch, assistant surgeon, will proceed from Syracuse, N. Y., and report to the commanding officer, Fort Omaha, Nebraska, for duty at that post.

First Lieut. Guy C. M. Godfrey, assistant surgeon, U. S. A., ordered to proceed to Fort D. A. Russell, Wyoming, and report in person to the commanding officer of that post for duty.

MAINE MEDICAL ASSOCIATION.

The forty-first annual meeting will be held in Common Council Chamber, City Building, Portland, Me., Wednesday, Thursday and Friday, June 14, 15 and 16, 1893.

Wednesday, June 14th.

"Notes on Dermal Medication," by G. A. Pudor, M.D., Portland. General consideration of "The Value of Circumcision." "Diabetes Mellitus," by Jane L. Hersom, M.D., Portland. President's Address. "The Sequelæ of Pneumonia," by Israel T. Dana, M.D., Portland. General consideration of the following topics: (1) "Is Ordinary Tonsillitis Contagious?" (2) "The Use of Electricity in Neuralgia." "The Significance of Hæmaturia," by Chas. D. Smith, M.D., Portland. "The Indications for, and the Operative Technique of Operations for Appendicitis," by S. H. Weeks, M D., Portland. "The Contra-indications to Operations for Appendicitis," by Alfred King, M.D., Portland. "The Medical Treatment of Appendicitis," by A. K. P. Meserve, M.D., Portland. "Removal of the Appendix in the Interval of Attacks," by S. C. Gordon, M.D., Portland.

Thursday, June 15th.

"Report of a Few Surgical Cases Illustrative of the Work Required of the 'Country Doctor,'" by J. E. Tuell, M.D., East Machias. "Mastoid Disease," by J. A. Donovan, M.D., Lewiston. Election of officers for the ensuing year. "Strangulated Hernia, with the Report of Unusual Cases," by S. W. Boone, M.D., Presque Isle. General consideration of the following topics: (1) "Treatment of Pulmonary Tuberculosis." (2) "Advantages and Dangers in the use of the Recent Coal-tar Products – Acetanilid, Phenacetin, etc." "Necrology," by Alfred King, M.D., Portland.

Evening Session, at 7.30 o'clock.

Annual Oration, by S. J. Bassford, M.D., Biddeford.

Reception and banquet, complimentary to visiting members and their ladies, by the physicians of Portland, at Gilbert's Hall, immediately after the Oration.

Friday, June 16th.

Reports of delegates to other medical societies.

Voluntary papers, reports of cases, clinical notes and queries.

Report of the Board of Censors.

The Business Committee desire that especial prominence be given this year to Reports of Cases, Clinical Notes and Queries, as to diagnosis, treatment, action of drugs, etc. A portion of each day's session will be devoted to the above-mentioned subjects.

C. D. Smith, M.D., *Recording Secretary*, Portland.

APPOINTMENTS.

John C. Munro, M.D., has been appointed surgeon to Out-patients, and **Edward Reynolds**, assistant to the Physician for Diseases of Women in the Boston City Hospital.

RESIGNATION.

Dr. David W. Cheever has resigned the Professorship of Surgery at the Harvard Medical School, and has been appointed Professor of Surgery, Emeritus.

RECENT DEATHS.

Butler H. Phillips, M.D., of Suncook, N. H., died May 25th, aged seventy-eight years. He graduated from Bowdoin Medical College in 1841.

Ludwig Markusovszky, M.D., Honorary Professor, etc., at Buda Pesth, died April 21st, aged seventy-eight years.

Oren A. Horr, M.D., of Lewiston, Me., died May 28th, aged fifty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Bulletin of the Harvard Medical Association, No. 4.

The Alphabet of Money. A Reply to Mr. Carnegie's A. B. C. of Money. By George Reed.

The Treatment of Constitutional Syphilis. By Oswald Ziemssen, M.D., Wiesbaden. London: H. K. Lewis. 1893.

Lecture.

LECTURES ON THERAPEUTICS.

III. Cardiac Depressants.[1]

[illegible]

GENTLEMEN: — To-day's lecture I expect to devote to the consideration of the cardiac depressants especially a study of the treatment of what we may call the syncopal state; and the next lecture will be given to the discussion of opium with especial relation to the treatment of the condition of narcosis or respiratory depression.

In thinking over how I should put this great subject in its bold outlines before you, in the course of a single hour, it has seemed to me that probably I had better introduce the discussion by first, giving you very briefly the symptoms which are produced by certain drugs that are employed as cardiac depressants. Hydrocyanic acid is frequently spoken of in the text-books as a cardiac depressant. It is, however, a drug of very little or no practical value in medicine and the long-continued use of this remedy is one of the strange instances of the perpetuation of what was originally a therapeutic delusion. Hydrocyanic acid, when taken in toxic dose, usually kills in from five to ten minutes. If the patient survive twenty-five or thirty minutes, recovery almost always occurs, and even after a large toxic dose all symptoms will have ordinarily disappeared in one hour or two hours. The preparations of hydrocyanic acid which have been commonly given in the treatment of coughs and other affections, contain so little of the acid that they produce no perceptible symptom. If, when a remedy be given in toxic dose, its effects disappear in one or two hours, how long will the action of that remedy last when it is given in dose so small that it has no perceptible influence at any time? Yet hydrocyanic acid is continually given by practitioners in minute doses every three, four or five hours, and men imagine that they get good results from such use.

There are three drugs, however, which have power as cardiac depressants and which have been enormously employed. These are tartar emetic, aconite and veratrum viride.

When a small dose of tartar emetic is given it produces only some slight general sense of relaxation. If a larger dose be exhibited it causes excessive nausea and vomiting. This vomiting is repeated, is attended with lessening of the frequency and still greater lessening of the force of the pulse, with general muscular relaxation, with free sweating. If a still larger dose be administered, or if antimony in any preparations be taken in toxic quantity, the symptoms are pronounced. There are, first, a slight, burning pain, then nausea, then vomiting, then purging, then muscular relaxation, great fall in the force of the pulse, free general sweating, fall of temperature, the symptoms of collapse, pinched facies and finally cramps — a general picture which resembles that of poisoning by the microbe and ptomaines of cholera.

If, instead of taking tartar emetic, our patient, intent upon suicide, has taken aconite, the phenomena which are produced are different. Usually the first symptom is tingling, the tingling being first felt about the mouth and lips, the parts with which the aconite has come into immediate contact. This tingling soon spreads over the whole body and is felt especially in the extremities. Now the muscular strength wanes, the pulse decreases in its frequency and loses in its force, the temperature begins to fall and if the dose have been large enough the symptoms of general depression grow more and more marked, and [illegible] there is a condition of profound muscular relaxation with a rapid, feeble, thready pulse that scarcely can be felt under the fingers, with marked fall of temperature, with irregular breathing, with a voice that is suppressed and whispering from weakness; and so with consciousness preserved, with the functions of respiration and circulation failing and with collapse becoming more and more marked, the man passes down in the valley of the shadow of death, perhaps to come up again into the sunlight, perhaps to rest forever in the darkness.

When we come to a study of the action of veratrum viride, we find the symptoms are somewhat different. If the dose have been small the pulse becomes slow, and with the slowing of the pulse, there is a loss of force. The beat is large and full, reminding you perhaps of the digitalis beat, save in the lack of force and in the compressibility under the fingers. Increase the dose and the pulse force grows less and less. Nausea and vomiting come on, the vomiting less excessive and repeated, and with the vomiting the pulse loses more and more. The muscular strength fails, the reflexes are diminished, and by and by the symptoms of collapse come on and the patient goes down as he did under the influence of aconite, but with this difference: death, under the action of aconite, is very common; death under the action of veratrum viride is very rare. I doubt, myself, whether it be possible for a single dose of veratrum viride to kill a man, the reason being that the vomiting produced by the large doses causes its removal from the stomach before much of it is absorbed. Certainly the strong preparations of veratrum viride have been taken by ounces and men have come up out of the darkness into light again.

I have drawn this brief picture of the symptoms produced by these remedies in order to give you my reasons for selecting between them, and the first thing that I want to do is to throw tartar emetic right out of court. It is of little value as a practical medicine, rather it is of no value according to my thinking, save when only given in small doses in the treatment of acute bronchitis and similar affections and even here I believe it is far exceeded in power as a sedative expectorant by the citrate of potassium; indeed, my experience with the citrate of potassium is, that it is the best sedative expectorant we have, but it must be given in doses of one-half to one ounce a day. The reason why I say tartar emetic should be thrown out of court brings us face to face with an important practical therapeutic problem which you older hearers are fully acquainted with, but which I shall dwell upon for the sake of my younger hearers, namely, the difference between depression and exhaustion. Unless the practitioner have an absolutely clear, fixed idea of the difference between these two states he must forever remain a very bad therapeutist. Depression is a condition in which the powers of the system or of the part, as the case may be, are kept down by the presence of some force. Exhaustion is the condition in which the power has gone out of the system. Depression is a condition to be reached by stimulation. The hand that presses down must be lifted by the force that draws up. Exhaustion can never be relieved by stimulation, but by food and rest. In exhaustion the stimulant is only valuable in so far as it aids in procuring rest and in taking food. The man in the last stage of exhaustion may have no power to digest the ounce of milk which is necessary for his salvation and the alcohol which is given by stimulating the stomach and the system may enable him to digest that milk. Under such circumstances the stimulant becomes valuable in exhaustion, but except for this purpose it is of no real service. Depression is the condition of a man kept down by some force. I have sometimes put it to my classes: depression is Sampson the strong man, bound with the withes of Delilah, which he breaks under the stimulus of antagonism. Exhaustion is the strong man, Sampson, with his hair cut off by Delilah, so that the power is gone out from him. Now I condemn tartar emetic absolutely as a cardiac depressant, because it produces exhaustion besides depression. It does depress the vital forces, but it purges and vomits and runs out the nutritive fluids of the body to such extent that the man is left, after the depression has passed by, exhausted; power has been taken from him, and the old Rasori treatment of pneumonia, while it was founded on good reasoning, resulted in bad results chiefly because the tartar emetic produced, not simply depression, but also exhaustion.

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[1] [illegible] the Harvard M[illegible]

When we come to the question of aconite, I find myself not prone to use this drug when a very powerful influence is wanted. Aconite is a very useful cardiac depressant in cases of chronic cardiac disease; but in acute disease I myself, when I want to make a strong impression, do not use it. I am a little afraid of aconite because of the dangers which attend its use. Probably no remedy, unless it be opium or arsenic, has produced as many deaths by poisoning as has aconite. Then, again, our knowledge of the action of aconite is comparatively uncertain. We know that aconite depresses the frog's heart, and we know that aconite depresses the heart of a mammal and lowers enormously the arterial pressure, but we do not know positively what is the action of this drug upon the vasomotor system. Aconite paralyzes the peripheral sensory nerves. It is this local action of the drug which makes the tingling about the mouth and lips. It is the influence of the drug carried by the blood to the peripheral nerves that makes the tingling in the extremities. The paralysis of the sensory nerves interferes with our ordinary physiological tests as to the integrity of the vaso-motor centres; but it has been found in the aconitized mammal that when the poles of a battery are placed on the vaso-motor centre in the medulla there is an immediate uprising of the arterial pressure, evidence that the vaso-motor system is not paralyzed. We have not sufficient evidence for positive conclusion; but what evidence we have does not seem to indicate that aconite is a distinct vascular paralyzant.

With veratrum viride I am very familiar, because I have studied it very carefully in the laboratory and sick-room. I shall not discuss in detail the general action of this drug, only its influence upon the circulation. It suffices to say that it is a depressant to the motor spinal cord and the respiratory centre. There are two alkaloids in veratrum viride. Chemists have differed and disputed concerning the identity of these alkaloids with other alkaloids; but it will serve our present purposes simply to call one jervine and the other veratroidine. When you inject jervine into the circulation of a lower animal, you get slowing of the pulse and fall of the pressure, until finally the pulse-wave gets very small and vapid; and if the dose have been sufficiently large, the pressure falls to zero. The slowing of the pulse is independent of action upon the pneumogastric nerve, for it occurs after section of the nerve; indeed, under the influence of this alkaloid the pneumogastric nerves are not affected at all. I have found also by repeated experiments that some fall of the arterial pressure occurs after section of the spinal cord high up, that is, after separation of the vaso-motor centre in the medulla from the periphery. Experiments upon the frog's heart have also proved that the alkaloid directly depresses the heart-muscle or its contained ganglia; jervine is therefore a cardiac depressant.

On the other hand, I have found that if we apply in the jervinized animals the test which we have for the condition of the vaso-motor centres we find that these centres are paralyzed. There are two tests. If you produce asphyxia the carbonic acid causes vaso-motor spasm everywhere by acting on the medullary centres, and so we have under the influence of asphyxia in the normal animal great rise of the arterial pressure. If you galvanize a sensitive nerve, you will produce a reflex general vascular spasm and a corresponding rise of the arterial pressure. I have found that in the animal under the influence of jervine, at a time when the heart-beats are still large and full, the pressure does not rise under asphyxia or under the galvanization of a sensitive nerve. We know, therefore, that the alkaloid jervine, whilst it depresses the heart directly and lowers pressure in this way, depresses also or paralyzes absolutely the vaso-motor centres in the medulla and lowers pressure in this way. It weakens the heart, but it opens out the blood-paths also. Veratroidine, the second alkaloid, afforded me one of the most curious sights I ever saw in the laboratory. I found, if I injected it directly into the circulation, I got a blood-tracing right down to zero, if the dose had been large enough. If the dose had not been quite large enough, the pressure fell to zero at once and then went thirty per cent. to forty per cent. above the norm. I soon found that this rise was not due to any direct influence of the drug, because when I produced artificial respiration in the curarized animal there was no such effect. In other words, this drug is a powerful respiratory paralyzant, and when injected into the circulation it instantly, if in proper dose, paralyzes the respiratory centres and causes the asphyxia rise of pressure. I then took a dog, maintained artificial respiration, and gave about one-thirtieth of a grain of the alkaloid. The pressure dropped to zero, and stayed there. Then I found that if I injected into the dog, instead of the one-thirtieth, a large dose, the pressure, instead of staying down, instantly jumped up to near the norm; in other words, after having killed the animal with a small dose of veratroidine I was able to bring him to life again by a large dose of the drug. This experiment, I should say, was performed after section of the accelerator nerves. Here is a fact illustrative of a certain truth which underlies homœpathy, that certain drugs act antagonistically in small and large doses; but it is only certain drugs, and not all drugs. Puzzling over this thing, I then thought I would try section of the pneumogastric nerves; and just as the pressure got to zero, I cut the pneumogastrics. Instantly the pressure jumped up. Now the secret was out. The small dose of veratroidine is a tremendous stimulant to the inhibitory apparatus of the heart. The large dose of veratroidine paralyzes the inhibitory apparatus; and so the small dose arrested the heart in diastole, and the large dose set the heart free from excessive inhibition. The large dose acted exactly as did section of the nerve. I may say that I went on and proved experimentally that the nerve under the influence of minute doses was in a condition of hyperexcitability. In all these experiments with veratroidine the animal was kept alive by artificial respiration; for in all of these doses the veratroidine naturally kills at once by paralyzing the respiration.

When we come to look at veratrum viride as a whole, we find that the jervine dominates the action of the drug. Veratroidine is only present in exceedingly minute amount, jervine in large proportion; and hence the action of veratrum viride is the action of jervine. It is a powerful cardiac depressant, acting upon the cardiac muscle or its contained ganglia; but it is also a powerful depressant of the vaso-motor centres in the spinal cord.

Now, with these remarks, let us pass on to the consideration of the application of the use of these drugs to practical medicine; and first, in regard to their employment in chronic cardiac disease, I shall say very little about it. We simply know that aconite and veratrum viride are useful remedies in the treatment of cardiac hypertrophy, not simply absolute hypertrophy, but relative hypertrophy, hypertrophy that has gone beyond the compensatory point. I want, however, to call your attention more minutely to the use of veratrum viride in the treatment of acute diseases. It is to me a little strange that, as you go from the North to the South of the United States, the uses of veratrum viride becomes more and more common. In some of our Southern States it has been used as a panacea for everything, and I have found it given very freely in typhoid fever. Under these circumstances veratrum viride becomes a warm friend of the undertaker; it is the jackal that goes ahead to show that the lion of death is coming. Of course, a powerful cardiac depressant given to a man who is in the death-struggle with depression and exhaustion adds to the load which the man must carry, and will often turn the scale. It is, however, entirely different in diseases in which the general systemic reaction is very high; and especially is it different in the treatment of pneumonia. When we approach this subject, the first thing that we must do as therapeutists is to rid our minds in a measure of our pathology, that is, I mean we must view the pathological facts from an entirely different standpoint from that from which the pathologist views them. He calls all of certain cases, pneumonia. He tells us that pneumonia is the outcome of a poison of the system by a coccus; but we, as clinicians, know that the map of the death statistics of the United States is black with pneumonia out in Dakota where the air is most pure and it is comparatively free from pneumonia in Philadelphia and the Southern cities where the air is bad, and every ranchman knows that when he faces a northern blizzard he takes his life in his hands and that he is liable to die from pneumonia. Are we to believe that there are great depots of frozen cocci up in the far North, which with the remains of the mastodon have outlasted the centuries to be carrying death over the Dakota highlands? Now, gentlemen, I don't say that there is not a coccus in pneumonia any more than I say that there is not a tubercle bacillus in the production of phthisis, but this I do say, that under the teachings of pathological laboratories the profession is in my opinion in danger of being swept away from the clinical aspects of disease. The cocci and the tubercle bacillus are like the poor, — in that we have them with us always. The tubercle bacillus fills our street cars, it haunts not only the hospital ward, but the salon and the parlor, and the important thing for us is to have the vitality or the power to resist the bacillus. In my opinion, the bacillus is often like the vulture of the desert in that it sees a waning of the forces of life and settles upon a man or woman that has not the power to live. It is not by treating the bacillus but by treating the human individual that we are going to do good in these diseases. We are told that the great Atlantic Ocean swept over the land of Southern England and that Mrs. Partington undertook to sweep it out with her broom. Now, Mrs. Partington was good with the broom, but no match for the Atlantic Ocean. We may be good with the broom of hygiene, but no match for the tubercle bacillus, and we can only hope to fight it successfully by treating the man. And so, also, is it in pneumonia.

There are pneumonias which are one thing, and there are pneumonias which therapeutically are another thing. Pneumonias therapeutically may have no more relation with one another than a pneumonia has with a dysentery, and are no more to be treated as the same disease though we label them with the same name. When I speak to you about the treatment of pneumonias, I do not mean the treatment of senile pneumonias nor of asthenic pneumonias; I mean the treatment of frank, sthenic, hard pneumonia, that comes upon a man as with the bound of a lion. I say here that I am certain, that when our forefathers bled these cases, they saved lives that now we lose. I am out of date perhaps. I am behind the times in one way, and I am ahead of the times in another way. The pendulum is beginning to swing a little towards venesection; but the thought I want to leave with you is that by means of this drug (veratrum viride) we can get all the good that comes from venesection without the dangers of venesection. You bleed a man, you depress him, lower the immediate activity of the vital forces, but you also take away power; and by and by, when the fight comes, that man is exhausted. Venesection has the dangers that surround tartar emetic. Remember that the abdominal vessels in a man will after death contain all the blood in his body and not be full. We forget very often that it is the abdominal vessels that dominate the circulation. Some of you must have seen in the operation of ovariotomy a woman dying, blanched, upon the table, revived by a dash of hot water into the abdomen. The woman revives out of her syncope because hot water contracts the abdominal vessels. When we give a man veratrum viride we dilate his abdominal vessels; we bleed the man into his own belly. By the action of this drug we get the influence of a venesection; but instead of withdrawing the blood entirely from the body, we put it in a resorvoir whence we can pour it back when the proper time comes.

I told you at one of my previous lectures that I would take this opportunity to speak to you in regard to the use of cardiac stimulants in pneumonia: and here again I am speaking of the pneumonia of the sthenic type. Certainly, a cardiac stimulant in the asthenic type everybody agrees must be used; but I want to call attention to the way in which death is brought about in pneumonia. There is high temperature, which weakens the heart. There is also a portion of the lung stopped up by exudation. What does that mean? Suppose we represent by this straight tube the lumen or calibre of all the vessels of the lung. When we put exudation into the lung we compress the tube and reduce the calibre of the vessels one-fourth, one-third, one-half, as the case may be, according to the amount of the exudation; and what do we have? A right heart weakened by heat and by the exhaustion of effort and depressed by the poisons of pneumonia finds itself in the presence of an ever-growing obstruction; and so the right heart pushes and shoves to get the blood through the narrowed vessels, and is more and more strained, until at last the right heart goes into that condition which I spoke of as occurring in chronic heart disease — overnervous stimulation, irritability, failure of diastole, failure of systole. Give that man digitalis, and it puts its strong hand on the inhibitory nerves of the heart, and says, "Be still"; and the heart grows quiet, and diastole lengthens. It puts its hand on systole, and drives the blood through the narrow vessels. Under these circumstances digitalis, increasing the power of the right heart, may save the life of the patient.

There are one or two remedies which I want to speak of here, in passing, which are useful as an aid to digitalis; and let me say that the man who gives his pneumonia case at this time expectorants is the man who has a compact with death against the patient. They simply take away the little digestive power that is left to the man. Strychnine is of service, and cocaine and respiratory stimulants; but I want to call attention to the use of musk, an old remedy, but invaluable in the treatment of all kinds of sudden crises in fevers and pneumonias. It was long ago pointed out by Trousseau as a sheet-anchor in the treatment of alcoholic pneumonia. I have seen digitalis and musk and respiratory stimulants carry an old man of seventy-three or four who had not been drunk but once in twenty years (and that was all the time) right through an attack of pneumonia to the haven of renewed perpetual inebriety.

And now, gentlemen, in conclusion, I want to call your attention in a little detail to the treatment of poisoning by the cardiac depressants. I do this because the treatment is really the treatment of the syncopal state, and affords me an opportunity to discuss that before you. But before taking this up, a word in regard to the use of antidotes. Tannic-acid is valuable as an antidote against the three cardiac sedatives, and must be given.

We find when we come to look at the symptoms of the syncopal state for the purpose of therapeusis, that long experience has shown us that the position of the patient is a matter of the most vital importance; and, if you will read the histories of death from aconite, you will find it frequently stated that the patient was raised up and fell dead. We all know that the horizontal position is the proper position for a man or woman in the condition of syncope. I myself, however, until I made a series of experiments in the University laboratory some years ago, was entirely at fault in my reading of the reasons of this. I was taught and adopted the teaching of my elders that we keep the man in a horizontal position in order to keep the blood in the head so that the vital centres in the head might be nourished. When I came to make a series of experiments in an animal profoundly depressed and in a condition of syncope, I was very much astonished to find that the blood-vessels of the body act in unison as a simple tube and that the arterial pressure was the outcome of hydrostatic law. If I raised the animal above his hind legs, the arterial pressure in the femoral artery went up; in the carotid it became nothing. If I turned the beast round about, the carotid pressure went up, the leg pressure down. The explanation of the effect of position is easy to see. Bear in mind what I told you about the abdominal circulation. Raise the man up, and the whole of the circulating blood settles in the relaxed, toneless abdominal vessels, and there is no contracting power to drive the blood, to fill up the right side of the heart; and the man dies at once the death of cardiac failure, because the right side of the heart is empty, the left ventricle has no blood to force out, and there is no blood in the coronary artery, and the apparatus stops. The opposite to this takes place when you treat syncope by position. You turn the man upside down when he is dying under the influence of chloroform, and frequently you will start the heart, simply because the blood has rushed into the right side of the heart, has distended it, and by the pressure has stimulated the heart if, perchance, there be any power in it to respond.

And now a word in regard to the temperature of the patients, a very important thing that is often lost sight of in the treatment of collapse. The human organism is made to work upon a certain plane or level of animal heat; and when we depart from that, whether we go up or down, we get evil. In these conditions of syncope there is often pronounced fall of temperature; and why? Because there is excessive loss from the surface. The interior portion of the body is normally kept warm by the outer half-cooled coil around. When there is vaso-motor paralysis, the blood rushes to the surface, the heat is dissipated, and so the whole temperature falls. This loss of heat depresses the respiration and depresses the heart; and it is absolutely essential in the first place under these circumstances of syncope when the temperature falls to maintain it, maintain it not by little hot bottles somewhere within a half-mile of the patient's bed, but by measures that do maintain the heat. Put the man in the hot bath or on the ordinary water-bed heated. Fill the rubber mattress half-full of hot water, and the weight of the patient causes him to sink down in the bed and the water rises up around him. Protect him from burning by blankets.

Now, let us consider the use of drugs. Here I want to speak in regard to a very important general law that I cannot remember to have seen formulated, namely, that because a drug is in an apparently antagonistic class from another drug, it is no reason that it is really antagonistic. We have got to study the drugs more closely as individuals before we can say they are really antagonists of one another and are physiologically opposed to one another. This seems a very small thing; and yet a lack of the knowledge of it is responsible for a large proportion of the deaths attributed to ether. I remember reading not long ago an account of a death in Cincinnati, in which a woman had syncope under the influence of ether, and during the next five to seven hours the doctors poured into her several pints of brandy, and wondered that she died. Alcohol and ether are practically the same remedy, scarcely different chemically, acting precisely alike. The first influence of ether is to stimulate, the second to depress the heart. The first act of alcohol is to stimulate the heart, the second to depress it; and now when they had this heart failing to beat under the influence of too much ether, they poured in alcohol, and took away the chance which nature had of eliminating the ether and getting the heart out of the slough. I know nothing more dangerous and absurd in the history of therapeutics except the custom of some surgeons of giving hypodermic injections of ether to get the man out of ether-poisoning. Can it make any difference to the heart whether the ether is taken up from the lung or the leg? When it gets in the blood to the heart it is ether and nothing more; and to suppose you are going to raise the man out of ether-paralysis by injecting the ether under the skin is as absurd as to suppose the best treatment is to pour ether on a sponge and push its inhalation still further. I have found in animals that when you have cardiac depression from ether or chloroform the moment you give alcohol in sufficient quantity to have any perceptible influence you get lowering of blood-pressure: and I have found that if you will exhibit alcohol before giving ether or chloroform it requires much less of the anæsthetic to produce the systemic influence. Alcohol and ether are really similar agents, and the use of one against the other adds always to the danger. Ammonia, much used, is of very little value, no value at all except you can give it intravenously. Remember the local effects of ammonia dominate everything. A man poisoned with ammonia dies from the local effects. I remember years ago the first case of cardiac failure I had I gave ammonia very freely under the old teaching. It was lucky for me that the patient did not come out of the cardiac failure, because she mayhap would have died of an acute gastritis, produced by my ammonia.

Nitrite of amyl is a drug which has been strongly commended in these cases, but it is a very dangerous drug. It may be used, but must be used with great caution. The first effect of the nitrite of amyl is undoubtedly to stimulate the heart; but in any dose nitrite of amyl depresses the vascular system, and if vascular depression is the danger, you increase that danger, and if you give a little beyond the amount that is necessary, you get intense cardiac depression. Therefore, in cases of syncope if you use nitrite of amyl, use it with very great care. I made a series of experiments upon animals with syncopal condition from chloroform and from ether, and I never was able to get any evidence of beneficial effect whatever from the nitrite of amyl, yet there is some clinical evidence for saying it is a drug which may be tried carefully.

Strophanthus is a remedy which will probably prove useful in these cases. I, myself, have had no experience with its use in sudden acute syncopal collapse. It may be given, however, hypodermically with a well-assured certainty that it will make a great deal of local irritation; but remember when you have a man upon the borders of death, you are justified in making ulcerations.

The one cardiac drug which in my experience has been found efficacious in these cases is digitalis. It unfortunately acts slowly, but it acts usually with sufficient quickness for our purposes [illegible] hypodermically.

And now, in conclusion, one word in regard to the use of alcohol in these cases, especially its use in veratrum viride poisoning. Remember that whenever you give alcohol for a very sudden effect in intense depression it must be given in the most concentrated form. A gentleman said to me yesterday, "How much alcohol is in a bottle of English brown stout?" I said, "It is about as much as in three [illegible]." He said, "A bottle is nothing for me, [illegible] of whiskey would make me drunk." Why [illegible]. The answer is, that the brown stout lies in the abdomen and yields up its alcohol slowly, while the whiskey rushes into the blood. If he had taken his whiskey in a pint or two of water, it would not make him drunk, because it would be eliminated in part before it was all absorbed. I have seen life apparently saved in some of these cases of poisoning by remembering the fact I have spoken of, by giving the whiskey pure (raw, strong spirit), by the teaspoonful.

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Original Articles.

EARLY DIAGNOSIS AND PROMPT TREATMENT OF OBSTETRIC SEPTICÆMIA.[1]

BY EDWARD REYNOLDS, M.D.

Asepsis and antisepsis, as applied to obstetrics, vary from the same principles as applied to surgery, in several particulars; and notably in the facts, that, in obstetric work, the technique is much easier and that it is of much greater importance to the general practitioner, who commonly avoids surgery, but is forced to do obstetrics.

The revolution which has been effected in the practice of midwifery, though, as yet, less fully developed, is rapidly becoming as great as that which has changed the face of surgery. The disease which not long ago, received in this city the title of "child bed fever, a private pestilence," has to-day, in the practice of reasonably careful men, become an infrequent cause of actual mortality; but, that the profession is still far too little impressed with the importance and ease of its prevention, is to be seen in the fact that while its major grades have become comparatively infrequent, its minor forms, of locally limited septic infection and of slight constitutional toxæmia, are still, in almost the same degree as formerly, among the most prolific causes of the chronic ill-health of women. The profession in general is still sadly oblivious of the fact, that their failure to recognize early and treat promptly, the not seriously dangerous grades of obstetric sepsis, is still one of the important sources of preventable chronic disease.

We who are especially interested in midwifery, are still not infrequently confronted by the statement that too much is made of obstetric sepsis, and that it really is extremely infrequent outside of great institutions, as instanced by the fact that Dr. So-and-so, in many years of active practice, has never seen a case, or has seen but one or two cases, of puerperal fever. We can only reply that that excellent man's report of his experience is merely proof of his inability to recognize mild sepsis, and of his habit of overlooking its manifestations or of affixing fanciful names, such as malaria, milk-fever, and "merely the result of exhaustion," to the slight rise of temperature, the moderate tenderness of the abdomen, and the staleness of the lochia, which are characteristic of mild sepsis. Mild cases generally live, but are seldom really cured without specially-directed local treatment.

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[1] Read before the Boston Society [illegible], February [illegible], 1893.

Few men realize the extent to which an absolutely aseptic labor and convalescence confers upon its possessor the power of complete recovery from all the ordinary obstetric accidents and fatigues. We are all familiar with the constitutional debility and the long train of pelvic symptoms, which are generally attributed to the existence of an unhealed laceration of the cervix. Few among the general profession, have, as yet, grasped the fact, that these symptoms are, in reality, merely the symptoms of a subinvolution of the uterus and its adnexa, and that this subinvolution of the pelvic organs is, in the vast majority of instances, the result of a mild septic infection through the surface of a lacerated cervix, and could have been prevented in toto, by the maintenance throughout the case of an absolutely aseptic lochial discharge. So, too, chronic endometritis and salpingitis occurring after labor are almost, without exception, due to a failure of the reparative processes, which is itself the result of a locally-limited sepsis.

To many of those who are unfamiliar with the results of recent experience in this department of work, these statements may seem fanciful and the result of over-specialization; but they are borne out by a universal concensus of specialists of authority, as may be learned by a reference to the recent discussions of any of the special societies; and this opinion, which is now becoming almost too trite for mention among specialists, is itself the result of the fact that in well-managed institutions and in the private practice of those who have been trained to the performance of extreme asepsis, it is a matter of every day experience to see extensive injuries to the cervix followed by complete involution and the restoration of the pelvic organs to their normal condition, in spite of the continued existence of a laceration of the cervix. So, too, the adoption of a routine practice of making bimanual examinations has demonstrated the presence of inflammatory troubles in the uterus or adnexa in almost all cases whose progress have been marked by even a slight elevation of the temperature and staleness of the lochia; and the absence of such troubles in cases which have pursued a normal course.[2] While, again, it is found that the early and prompt treatment of mild and locally-limited sepsis, is almost universally followed by a complete immunity from its sequelæ. It is to this subject of the early diagnosis and prompt treatment of mild sepsis that I wish especially to invite your attention.

Diagnosis. — Severe labor is not infrequently followed by moderate pyrexia, and when this is limited to the first forty-eight hours, it is strictly comparable with the similar elevations of temperature so frequently observed after surgical operations, and is independent of sepsis. When, however, this pyrexia becomes aggravated, or is even continued, after the first two or three days of the convalescence; or when, after a similar period of normal temperature, even a very slight elevation is observed upon the third, fourth or fifth day (or even later), the attention of the physician should at once be directed to the diagnosis of its cause, and a suspicion of the presence of sepsis should, of necessity, be excited in his mind; and he must be careful not to allow himself to be led into an unauthorized negation of its existence, by his natural aversion to the admission of the possibility that sepsis may arise in his own practice.

The diagnosis is, in the majority of instances, easy, if sufficient care is observed in the examination of the case. The conditions from among which a differential diagnosis is ordinarily to be made are, constipation, engorgement or phlegmon of the breast, intercurrent non-obstetric disease and sepsis. If constipation is present it must be removed before the question of the existence or non-existence of sepsis as the cause of the elevation of temperature, can be absolutely determined. Mastitis is readily eliminated by a physical examination of the breasts; and it may be remarked here, that in the sensitive condition of the puerpera, a very slight degree of trouble with the breasts may be a sufficient reason for the appearance of very decided disturbances of temperature.

The possibility of an intercurrent non-obstetric disease must always be remembered, and its absence must be ascertained by careful questioning and by a general physicial examination of the patient. Among the diseases which are most common and which most frequently give rise to the necessity of eliminating sepsis are tonsillitis, pneumonia, malaria, phthisis, and, within the last few years, epidemic influenza; but whether or not any of these are found to exist, the presence or absence of sepsis either as a complication, or as the sole cause of the elevation of temperature, must be established by the presence or absence of its intrinsic signs and symptoms in each and every case of pyrexia after labor.

Obstetric sepsis is characterized by an elevation of temperature; an abnormal tenderness of the abdomen, especially localized over the uterus or its adnéxa; diminution and foulness of the lochial discharge; diminution of the amount of milk; and frequently of all the other secretions and excretions of the body. The diminution in the secretions and the rise of temperature, are, of course, learned by inquiry. The pelvic and abdominal tenderness, and the foulness of the lochia, are, in most cases, easily recognized by a mere inspection and palpation of the patient, but it is impossible to establish their entire absence without a specially conducted and careful vaginal examination. This is to be resorted to in all cases of otherwise unexplained pyrexia, and in all cases in which the ordinary examination of the abdomen, and of the vulvar pad, gives rise to even the slightest suspicion of an abnormal tenderness or foulness of the lochia. It should be conducted under the most scrupulous antiseptic precautions, and when so conducted, is not a measure which can be productive of any injury to the patient; nor is it, in my experience, one which has ever been objected to by a patient of any intelligence.

The patient should first be placed in Sim's position, and the surface of the cervix and of every portion of the vagina should be carefully scrutinized in search of the so-called pseudo-diphtheritic gray patches. This search may, of course, be made in the dorsal position and by a bivalve speculum, but it is then likely to be far less efficient than if the Sim's position is used; and since instances have been repeatedly reported in which failure to discover a pseudo-diphtheritic patch which was hidden away between the folds of the vagina, has led to serious or fatal results, the use of Sim's speculum, seems to me personally, a thing which should be insisted upon.

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[2] Such a practice is of course only valuable for purposes of study, and is not to be recommended as necessary in normal cases.

This inspection of the mucous membranes having been made, the surface of the cervix should be disinfected with a corrosive solution, a pledget of sterilized cotton should be pressed into the cervical canal and its odor ascertained after its withdrawal, in order to determine the condition of the uterine lochia, which not infrequently, in early sepsis, become distinctly foul at a period when the vaginal lochia are still sweet. The degree of dilatation of the canal should also be carefully noted, since any undue persistence of its patency is suggestive of the relaxed condition of the uterine muscle, which is characteristic of sepsis.

The patient should then be placed upon her back, with the knees well flexed and the body in a position in which every muscle is relaxed. The vagina should be douched or wiped clean with a bit of cotton soaked in a corrosive solution, and the patient should be subjected to a careful and thorough bimanual examination, in the course of which the observer should successively ascertain the size, consistency and sensitiveness of the uterus, of each of the broad ligaments, and of the uterine appendages. He is then, and then only, in a position to thoroughly understand the condition of his patient.

To those who are not in the habit of practising such examinations, this description may seem complicated; but in reality the whole proceeding can be carried out in but little more time than has been given to this description, and the amount of trouble which its performance requires from the physician, will be more than repaid to him, either by the relief from anxiety, which is consequent upon the exclusion of sepsis, or by the advantages to the patient which result from its early establishment.

Treatment. — Should the results of this examination be negative in all particulars, the absence of sepsis may be regarded as conclusively established.

If the inspection of the vagina and cervix reveals the presence of the gray patches and of foul vaginal lochia, while the cervical lochia are sweet, it is only necessary to disinfect the vagina, which is best done by thorough vaginal douching with a corrosive sublimate solution, followed by an application of iodoform to the affected surfaces by insufflation; and a daily repetition of this performance for three or four successive days will usually result in a complete cure.

When the uterine lochia are affected, two methods are advocated. There are still many men of authority who believe that in mild cases it is sufficient to disinfect the uterus by the employment of an intra-uterine douche of a corrosive solution. It is held, however, by others, that the action of such a douche is, at best, but superficial, and that in the vast majority of cases the best results are only obtainable by a combination of its employment with a thorough curetting of the interior of the uterus. This latter is now my personal opinion. During the last four years I have curetted the uterus in the first ten days of the puerperal period in a large number of cases; in a very few instances I have thought at the end of the operation that its performance had been in all probability unnecessary; but in every other case in my experience I have thought at the end of the operation that the amount of foul material removed, could never have been disinfected by any less radical method; and in no single instance have I seen any ill result following the operation, or been led to feel the slightest regret at having performed it.

The advantages to be gained from its employment in septic cases are, moreover, so overwhelmingly great, that I think any one reasonably familiar with uterine surgery, is wise in employing it in any case in which the condition of the lochia leads to a reasonable doubt of the condition of the endometrium. I have repeatedly removed from the uterus with the curette, a surprisingly large amount of foul material in cases in which the condition of the lochia had been such as to make me decidedly doubtful of the existence of uterine sepsis; and I cannot question that, had these cases been left uncuretted, but a few days would have been required for the production of a full-blown sepsis.

I am accustomed to use in these cases a large, flexible, dull, wire curette and to pursue the following technique. The uterus is first washed out by an intra-uterine douche of corrosive sublimate, the curette is then bent to conform to the curve of the uterus, its edge looking forward, and made to scrape every portion of the anterior wall until the grating sensation characteristic of the uterine substance is felt. The curette is then so bent as to present its edge successively to the posterior and to each lateral wall and care is now used to cover thoroughly the coruna uteri in the neighborhood of the Fallopian tubes. When every portion of the intra-uterine surface has been thoroughly scraped, the débris is washed away with a second intra-uterine douche, and if it is foul, a pencil of iodoform is carried to the fundus and left in the cavity.

When the source of the supply of septic material has been thus removed, the patient should be put upon such forced feeding as the condition of her digestion allows, together with a free use of stimulants, and her bowels should be opened freely by a saline. If abdominal tenderness persists, the use of small, but frequently-repeated, doses of some saline cathartic should be continued with sufficient frequency to obtain the maximum number of watery dejections that can be borne by the patient without serious loss of strength.

If the disinfection of the uterus has been thorough, its repetition will seldom be necessary, and the complete disappearance of all symptoms of sepsis within twenty-four to forty-eight hours will be the rule. If, after such an attack, the uterus is found by bimanual examination to involute too slowly, subinvolution may be prevented in almost all instances by the use of a bi-daily hot vaginal douche.

When inflammatory lesions of the broad ligaments or uterine adnexa occur in combination with a septic endometritis, there can be no question but that curetting out the uterus is an essential preliminary step to any intelligent treatment of the extra-uterine complication, and it has been my experience that when this method of treatment is adopted early, the lateral masses have always disappeared spontaneously within a few days. I have once or twice seen cases in which, after a few days of such treatment, there was a discharge of pus through the os uteri, in coincidence with the disappearance of the tubal tumor.

When we find such lesions of the adnexa and no evidence of septic endometritis, it is always probable that the trouble is due to an acute exacerbation of a chronic tubal disease, that is, that it is not septic in its nature. In such cases entire rest, with the use of poultices over the abdomen, and of hot vaginal douches, usually results in resolution and the disappearance of any acute trouble within a few days. In case the symptoms become progressively worse, and the lateral enlargements increase in size and tenderness, I should be inclined to curette the uterus, gently but thoroughly, in the hope of promoting an intra-uterine discharge of pus. If this fails, or if the symptoms are so threatening than no time can be lost, there remains only the choice between vaginal drainage of the tubal tumors, and their removal through the abdomen.

These cases are often attended by a symptomatology which strongly suggests acute pelvic, or even general peritonitis, but which will, in the vast majority of cases, almost immediately subside, after the source of its supply has been removed with the curette, under the use of saline cathartics. The question of the treatment of these more extreme forms of septic trouble is, however, beyond the scope of this paper, in which I have desired to limit myself, mainly, to insisting upon the importance of the early recognition of slight grades of septic trouble, and upon the advantages to be gained by subjecting these mild cases to prompt and efficient treatment.

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IS NOT TOO MUCH IMPORTANCE ATTACHED TO THE CONDITION OF THE TONSIL?[1]

BY JOHN W. FARLOW, M.D., BOSTON.

In the development of an art or science it is very natural and desirable that old ideas and methods should show a tenacity of life sufficiently strong to resist frequent and repeated attacks upon them. Gradually the false is left behind and the true continues on. It has seemed to me that one of the things which ought to be left behind is the overwhelming importance given to the tonsils, which obscures and throws into the shade numerous other conditions of the greatest significance.

The throat can be examined without a tongue-depressor and with very imperfect illumination. The laity are in the habit of inspecting their own throats, and have their own ideas of the state of their tongues and tonsils. The act of gagging throws the tonsils from their bed toward the median line, brings them into great and undue prominence, and shuts off all view of what is behind them. The person with a sore throat gags easily on examination, and the tonsils thrust themselves on the notice of the examiner. In cases where it is difficult to open the mouth well, if a glimpse of something red in the region of the tonsils is seen, the case is immediately put down as one of tonsillitis. It requires considerable practice to examine the nose well, even anteriorly; and posterior rhinoscopy is still more difficult. The cheeks, lips and roof of the mouth are seldom thoroughly examined, whereas the mystery which has always attached to the function of the tonsils has lent them a certain charm and caused them to be the observed of all observers.

It is not at all surprising, then, that they should have claimed a share of attention out of proportion to their deserts.

In examining them, the base of the tongue should be drawn well forward, and they should be looked at in their natural position at rest. No proper idea can be formed from an inspection made only during the act of gagging.

When there is considerable anæmia of the palate, the tonsils and pillars of the fauces often look unusually red by comparison; and I have known very good practitioners to consider such cases as congestion of the tonsils, and treat them as such. Another error is in overlooking ulceration around the posterior, inferior molar teeth, with swelling of the gland under the angle of the jaw. The region of the tonsil is often somewhat reddened, which, together with the pain and difficulty in opening the mouth, lead to the conclusion that the tonsil is affected. I would especially urge the importance of examining the teeth in all cases.

Where there are large and painful cervical glands, it is common enough to find the tonsils large; but it is no proof that the large glands are caused by the tonsils. I have seen cases of inflammation of the follicles of the side of the base of the tongue called tonsillitis. Where there is considerable hypertrophied follicular tissue on the lateral pharyngeal wall near the posterior pillar, it is often regarded as part of a large tonsil.

There is one condition of the tonsils which is familiar enough to all, that is, follicular tonsillitis; and yet, if we examine the cases carefully, we shall find that the disease is by no means confined to the faucial tonsils. The pharyngeal vault is swollen and covered with a similar secretion, which fills the post-nasal space, impedes respiration through the nose, and affects the Eustachian tubes and the ears. The glands of the posterior pharynx are also often affected. Sprays to the nose, to the pharynx and vault often give as much, or more, relief than applications to the tonsils. How many physicians realize how little the tonsil has to do with quinsy or peritonsillar abscess? The tonsil itself may hardly be enlarged at all and an incision, if necessary, is usually to be made through the palate.

The symptoms commonly ascribed to large tonsils are obstruction to breathing, irritation of the pharynx, secretion in the throat, cough, disturbed sleep, snoring, tendency to frequent inflammation, thick, dead voice. For any of these symptoms bushels of tonsils have been removed. The surgeon congratulates himself on the number of his operations, but says nothing of whether his onslaughts have benefited the patient. We often hear it said that removal of the tonsils injures the voice. I have seen numerous instances where the voice was worse after tonsillotomy, for the reason that the conditions causing the poor voice (adenoid disease, large turbinates, etc.), not having been recognized, were allowed to continue and get worse, and I think this has been a frequent cause of disappointment. The tonsils have not at all the deadening influence on the voice that the large, hypertrophied masses on the posterior pharyngeal wall, at the vault, or hypertrophied turbinates, have.

As the nose is, by its construction, especially adapted for respiration, any encroachment on its calibre or obstruction in its posterior part must have a decided influence on respiration, much more so than the tonsils, which are on the sides and forward of the air tract, for the most part.

As regards cough, it is more likely to be caused by the downward passage of secretion from the nose or the post-nasal space, or the presence of swollen tissue in the latter, than by large tonsils. The tonsils are not very sensitive, whereas the pharyngeal vault is a great nerve centre from which radiate reflex influences in many directions. An instructive case is that of a girl of eleven, who had suffered from cough for many months. The tonsils were large and treatment diminished their size without affecting the cough. There was no sign of nasal obstruction, no snoring, the voice was fairly good, the nose was roomy and there was an unusually large space between the uvula and the posterior pharyngeal wall. She had been obliged to take Dover's powder and sulphonal every night for many weeks to procure sleep and she had given up her school because of cough. When she came under my care, with the mirror I discovered a very large post-nasal space and, stretching across from side to side, a large, hard mass of adenoid tissue, not obstructive and not secreting. With forceps I removed a number of very large pieces of glandular tissue. I never gave her a single drop of medicine, but her cough entirely disappeared and has not troubled her since, although for several years she had been a frequent sufferer and had had the best of medical advice.

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[1] Read before the Boston Society for Medical Improvement, February 27, 1893.

It is my experience that treatment of the nose and post-nasal space is productive of more good to the pharynx and tonsils than treatment of the tonsils is to the nose and post-nasal space, and I am glad to believe that the days of wholesale slaughter of large tonsils, without regard to structures higher up, will some day have an end.

Without undertaking to go more deeply into the subject, may we not draw the following conclusions:

(1) Because the tonsils are easier to see than the nose and post-nasal space is no sign that they are more important than the latter.

(2) Form no estimate of the size of the tonsils unless you see them in repose.

(3) Always examine the back teeth and the base of the tongue.

(4) In acute follicular disease of the tonsils, look for and treat disease of the other follicular tissue in the throat.

(5) Nasal obstruction, cough, and impaired voice are much more likely to be due to nasal or post-nasal hypertrophy than to tonsillar.

(6) The fact that the tonsils are enlarged or diseased should lead us to look for a possible explanation in the parts higher up.

(7) Free the nose and the post-nasal space in addition to, or instead of, tonsillotomy, if you wish to improve the voice and respiration.

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Clinical Department.

A CASE OF NARCOLEPSY.[1]

BY [illegible] LEWIS, [illegible] U. S. A., [illegible]

THE following case is of interest as the idea of malingering is excluded. It is true the soldier expected to be tried for that grave military crime, sleeping on post, but the peculiar features of his case were certainly developed prior to the offence. Men feign disease to avoid irksome duty, and particularly to obtain their discharge from the service; but in this case no effort was made to shirk duty, and the man seems rather to desire to continue with his company.

Private B. W., Troop H, Fourth Cavalry, age twenty-four, born in Saxony, Germany. Complexion florid; eyes and hair dark; general appearance healthy; admitted to the hospital from the guard-house, January 18, 1893. He had been confined for sleeping on post while in charge of prisoners, and was sent to me for examination, as he had been punished many times for falling asleep on duty, and his company commander wished to know whether there was any cause other than heedlessness before charges were preferred against him. I examined him, and found no abnormality of any kind. He was well nourished, height five feet five inches, weight one hundred and forty-eight pounds, tongue clean and bowels regular. He denied that he had ever had indigestion, but the register showed that he had been on sick report twice with acute indigestion. His urine was normal. His pupils responded readily to light and cutaneous sensibility and the reflexes were normal. He appeared to be not lacking mentally, but would probably be classed "not very bright."

His family history does not suggest any predisposition to nervous disease. He stated that he had never been sick except with scarlatina when a child; that no one had ever told him that he was unusually sleepy until he was sent to Arizona with other recruits, in December, 1888, when, six months later, the men of the troop commenced to tease him about always sleeping. On inquiry among the officers and men who knew him, I found that he slept habitually through reveille and other roll-calls, and had been punished frequently for doing so, when his comrades had forgotten, or been unable to awaken him; sometimes he slept all day. About two years ago he was found by the adjutant at guard-mounting standing in the ranks asleep. Being a painter by trade, he was employed to paint the buildings, but had to be relieved from that duty for fear that he might fall from the ladder, while asleep, and injure himself. On one occasion, he was found asleep on a ladder fifteen feet above the ground. He had frequently fallen asleep while at meals at the company mess-table, once with his soup-spoon in his mouth. He has, also, been seen sleeping on his horse at mounted drill. At times, it has been so difficult to awaken him that the men had to cuff him and roll him on the floor.

The offence he was charged with was sleeping on post while in charge of two prisoners. He was seated on a log sound asleep with his carbine across his knees, undisturbed by the noisy approach of the officer of the day, mounted. The first few days he was in the hospital he usually slept from the time I inspected the ward (at 9 A. M.) until next morning, except while he was at meals. It was difficult to arouse him; sometimes it was necessary to turn over the mattress and roll him out of bed on the floor.

The treatment adopted was to have him kept awake, giving him regular outdoor work, some light duty such as keeping the lawn in order and the walks clean. Later he was placed on duty in the kitchen, where he developed a taste for the duties and got on well, having only two relapses, when he fell asleep, let the fire go out and delayed the meal. He always appeared to be, and I believe was, unconscious of the fact that he had been asleep. He even now refuses to admit that he sleeps or ever has slept more than other men.

[1] [illegible] authority of the Surgeon-General.

Early in March he had improved so much that, yielding to his wishes, I returned him to duty. He wishes to serve the rest of his time, and pleads earnestly to be permitted to do so. Since he was returned to duty March 19th, he has performed his duties in a fairly satisfactory manner, and sleeps only in the afternoon, usually awaking without being called.

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Medical Progress.

REPORT ON PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

ON THE USE OF CHLORIDE OF CALCIUM IN THE TREATMENT OF PNEUMONIA.[1]

LIEUTENANT-COLONEL A. CROMBIE, M.D., Surgeon, of Calcutta, gives in some detail his experience with chloride of calcium in lobar pneumonia, in twenty-two cases. In lobular pneumonia he did not find this drug of any benefit. His twenty-two cases of acute lobar pneumonia ran a singularly mild course on a treatment which consisted simply of chloride of calcium in doses for adults of from five to fifteen grains every four hours. Several of these cases were double pneumonia, and one was fatal in a child of four years old, both of whose lungs were affected throughout. The noteworthy feature in this set of cases was the subsidence of the fever after two or three days of the treatment, to a practically normal point, and the absence of all the distress and danger attendant on high temperatures. No antipyretic was given after the beginning of the treatment with chloride of calcium. Another noteworthy point in several of the cases was the arrest of the disease in the stage it was in when the treatment was begun. If it was in the first stage of pneumonia, the physical signs continued those of the first stage to the end, the crepitation and dulness disappearing together, without the stages of tubular breathing, etc., occurring. If the treatment was begun in the stage of tubular breathing, this became less and less distinct as the dulness disappeared, and there was no stage of redux crepitation. In several of the cases there was extension of the pneumonia while the patient was under the influence of the calcium salt, either to an adjoining portion of the same lung or to the other lung. When this occurred it generally gave rise to a temporary recrudescence of the febrile symptoms, which again quickly subsided. Dr. Crombie is aware of the fallacies which surround such observations as he has recorded, for instance, the date of the beginning of several of the cases is uncertain and the crisis may occur in pneumonia as early as the fifth and is not unusual on the seventh and ninth days, but they appeared to respond to the treatment and there was a striking contrast, as regards mortality, between these cases and those of the same class treated otherwise in previous years. In conclusion he refers to the work of the brothers Klemperer, who have been able not only to produce immunity from pneumonia by the subcutaneous or intravenous injection of filtered cultures of the pneumococcus, but have also been able to cure artificially induced pneumonia by the injection of the serum of an animal which had been so rendered immune. The result was a fall of temperature within twenty-four hours from 40° C. or 41° C. to normal. The brothers Klemperer believe that the pneumococcus produces a poisonous albumose (pneumotoxin) which, when introduced into the circulation of an animal causes rise of temperature and the subsequent production in the body of a substance (antipneumotoxin) which has the power of neutralizing the poisonous albumose formed by the bacteria. There is a constant absorption in pneumonia of the pneumotoxin into the circulation from the lungs. This continues to produce the high fever of pneumonia until a sufficient quantity of antipneumotoxin has been produced to counteract the pneumotoxin, the crisis results and the temperature falls to the normal point. They demonstrated that the serum of the blood of patients after the crisis of pneumonia contained this antitoxic substance, and was able in a fair number of cases to cure the disease when injected into infected animals. They tried this likewise in the human subject with promising results, the temperature falling either permanently or temporarily, after the injection of four to six cubic centimetres of serum. The results obtained with chloride of calcium by Dr. Crombie resembled those described by the brothers Klemperer. Dr. Crombie also refers to the work of Green, who discovered that the coagulation of the blood plasma is hastened by the addition of a minute trace of a calcium salt, and that indeed calcium is essentially necessary for the formation of a blood clot, and he also states that Pekelhäring, working on Green's discovery, found that among other substances "peptones" have a strong affinity for calcium salts and that the toxic action of these substances is due to their removing from the tissues the calcium salts which are essential for the healthy continuation of nearly all the vital processes. They cause at the same time a loss of coagulability of the blood, a fall of blood-pressure, stoppage of secretions, and if the dose is large enough, death ensues. These symptoms are prevented if a small amount of chloride of calcium is injected into the vessels of the animal as well as the peptone, and a healthy condition of the blood is thus maintained; and for this healthy state of the blood the presence of a small quantity of chloride of calcium seems to be absolutely necessary. The presence of peptonuria is a constant phenomenon of pneumonia, and Dr. Crombie thinks it not impossible that the action of the chloride of calcium in the treatment of pneumonia may consist in its neutralizing the toxic action of these peptones or albumoses circulating in the blood, unless it be due to some more intimate effect on the blood vitality, of which we do not know much more than that the presence of calcium chloride is necessary for the existence of the fibrin ferment. It may be that the pneumotoxin has poisonous affinities similar to those of the peptones and that the calcium salt neutralizes it in a similar way.

THE EFFECT ON SUCKLINGS OF CERTAIN PURGATIVES ADMINISTERED TO THE MOTHER.[2]

Fehling showed that salicylate of sodium and iodide of potassium, if taken by the mother, could, in part, be recovered from the child's urine. Mercury taken by the mother did not usually appear in the milk, and opium and chloral, even if given to the mother in considerable quantities, did not seem to produce any effect upon the sucking child.

It is the impression of many that purgatives administered to the mother often leads to disturbance of the bowels of the sucking infant. With a view of obtaining some definite information on this question and to see whether any drugs are more apt to bring about this disturbance than others, Dr. William J. Gow made observations on a number of nursing women who were suffering from constipation. Various purgatives were given and the effects produced on them and on the infants, were noted. Aloes, senna, cascara sagrada and sulphate of magnesium were used.

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[1] Practitioner, vol. 1, No. 4.

[2] Practitioner, vol. 1, No. 3.

The drug under trial was used for not less than a week, no attempt was made to determine whether any of the drugs given appeared in the milk, the experiments were purely clinical, and considered the effect, if any, upon the child's bowels. Observations were made in forty-two cases. His conclusions are that sulphate of magnesium administered to the mother frequently causes looseness in the sucking child. Senna, cascara sagrada and aloes rarely affect the child's bowels when administered to the mother.

THE EMPLOYMENT OF CHLORHYDRATE OF HYOSCINE IN THE INSANE.[3]

Lodde in a thesis (Paris) discusses the therapeutic action of this alkaloid in the treatment of the insane. He thinks the drug in the form of chlorhydrate useful in the treatment of acute and subacute maniacal states, in delirium tremens, in the delirium of hallucination, in general paralysis associated with maniacal excitability and in the pre- and post-exciting periods of epileptic crisis. It may be advantageously employed in agitations of traumatic origin and in all those cases in which a maniacal condition is to be quieted. Hyoscine should not be considered a curative agent for mania; on the contrary, certain states such as cardiopathies and the cachetic conditions, may be regarded as contraindications for the use of this drug. It may be employed hypodermically to advantage, especially in maniacal cases. The dose may vary from one-fourth to one milligramme and even in rare cases to two milligrammes. The chief physiological effects of hyoscine on healthy persons are mydriasis, a certain amount of muscular relaxation, slowing of the circulation, suppuration or diminution of the salivary secretion and a tendency to sleep, these effects being produced in from ten to twenty minutes. These physiological properties explain the prompt and powerful action of the alkaloid in maniacal subjects, in whom it generally produces quiet or sleep. This effect lasts from six to ten hours.

POISONING FROM TWO PER CENT. SOLUTION OF CARBOLIC ACID.[4]

In the *Zeitschrift für Geburtshülfe und Gynäkologie* (Band XXI.) Krukenberg describes minutely the case of a multipara who had aborted, and in whose case it was thought advisable to curette and wash out the uterus with a quart and a half of warm water to which was added sufficient carbolic acid to make a 2.7 per cent. solution. The curette brought away about a teaspoonful and a half of necrotic decidua, following which the fluid was injected. After three-quarters of a quart had been used, the receptacle holding the fluid was raised upon the shoulder of a woman of average size. During the injection the patient's pulse suddenly failed, and it was necessary to interrupt further procedure. An improvement in the pulse was followed by failure in the respiration; artificial breathing was performed, and the patient gradually rallied to consciousness, presenting symptoms of œdema of the lungs. A specimen of urine passed two hours after the injection showed evidences of carbolic-acid poisoning and contained oxyhæmoglobin. Four hours after the uterus had been washed out, the patient complained of prostration, and expectorated an abundant mucus from the lungs. Her most striking symptoms were oliguria, complete anorexia, and the persistence of a scanty, brownish, vaginal discharge. The spleen was enlarged. Death followed about ten days after the intra-uterine injection. Post-mortem examination revealed acute parenchymatous nephritis with endocarditis. A microscopic examination of the kidneys showed multiple hæmorrhages in the connective-tissue between the tubules. Krukenberg has reviewed the literature of the subject and concludes that severe intoxication may follow the use of a two- or three-per-cent. carbolic-acid solution resulting from absorption of the poison through the respiratory or digestive tract. In puerperal cases poisoning results from entrance of the solution into the veins of the uterus. The symptoms produced by such absorption are due to the effect of carbolic-acid upon the blood, and not to reflex action. Hæmoglobinuria is occasionally observed accompanying carbolic-acid poisoning. The observance of the necessary precautions in employing carbolic acid makes it the safest antiseptic for intra-uterine use.

SALICYLATES IN THE TREATMENT OF PLEURISY WITH EFFUSION.[5]

Dr. George Dock, in a valuable paper on this subject, gives an account of the evidence regarding this method of treatment, and relates in detail two cases of his own where the action of the remedy was favorable. He concludes his paper as follows:

(1) Salicylic acid and its salts are among the most effectual agents in the treatment of pleurisy with effusion.

(2) In effective doses the remedy is harmless, and with proper selection of the preparation, and care in administration, causes little or no discomfort to the patient.

(3) Salicylates act most promptly in pleurises with serous effusion of recent origin or of long standing, but they are efficient in simple, dry pleurisy, and often act favorably in secondary pleurisy.

(4) There is no evidence that they are useful in suppurative cases.

(5) The drug acts as a diuretic, but may have an effect on the pathological process, or on the cause of the disease.

(6) Salicylates have a more marked action in pleurisy than have the diuretics commonly so-called.

(7) "The duration of the treatment with salicylic preparations is less than with diuretics, common salt, or roberant medication" (Eugster).

(8) The remedy can be used at the earliest period, and favorably affects all symptoms.

(9) The drug may be given in the form of the acid, or any of its salts, in doses of a drachm of the former, or one to two drachms of a salt daily. In ordinary cases it is not necessary to give the larger doses, and sixty to ninety grains of sodium salicylate daily may be considered full beginning doses, to be diminished one-third or one-half after the effect is manifest.

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[3] [illegible], February, [illegible].

[4] American Journal of Medical Sciences, [illegible].

[5] Therapeutic Gazette, February, [illegible].

(10) The ordinary precautions must be observed in giving the drugs, and during their administration the total amount of urine should be measured daily.

THE TREATMENT OF MYXŒDEMA.[6]

Until within recent years this disease has been regarded as at best only fairly curable by careful diet, tonics, massage and baths.

Within a few years a method of treatment by means of the thyroid gland of the sheep or pig or some preparation of them has been found of the greatest service in connection with the treatment above alluded to.

An article by T. McCall Anderson, M.D., gives further proof of the value of a therapeutic agent which has already been referred to in this JOURNAL.

The essential feature of the disease is the loss of the thyroid gland, and attempts to replace its secretion have had remarkable success. Dr. Anderson reports one case and gives photographs of the patient. He points out that in this disease the remedy acts even more promptly when given by the mouth than when given subcutaneously. Subcutaneous injections occasionally give rise to alarming symptoms almost immediately after the injection, and indurations and abscesses are apt to result at the seat of puncture.

This treatment dissipates all unpleasant symptoms in a comparatively short period but there is a tendency to recrudescence after the treatment has been suspended for a time. But it is no great hardship for patients to swallow a dose of the extract once a week for the remainder of their lives. It is further suggested that the remedy is one which may pave the way for similar discoveries in other fields.

THE IDENTITY OF THE PROPRIETARY, SO-CALLED "HYDRO-NAPHTHOL" AND IMPURE BETA-NAPHTHOL.[7]

Dr. D. D. Stewart, in a recent article, publishes the results of his investigation upon these two substances. He has used hydro-naphthol freely in gastro-intestinal ailments of supposed bacterial origin, but beta-naphthol under its true name, little, and alpha-naphthol not at all, having the impression that their use was unsafe. On looking more closely into the chemical composition of hydro-naphthol he found that it was a proprietary preparation; at his instance Mr. Charles P. Beckwith, of Detroit, investigated its composition in a thorough and painstaking manner and the latter concludes the report of his work by saying that in his opinion hydro-naphthol is simply beta-naphthol together with certain tarry impurities, very possibly its own decomposition products. This conclusion is similar to that arrived at by Jacobson of Berlin, Merck of Darmstadt, etc., who have also investigated this subject.

THE PREVENTION AND TREATMENT OF CHOLERA BY THE NAPHTHOLS.[8]

Dr. D. D. Stewart in this article makes suggestions as to the employment of naphthol resting on theoretic data and test-tube experiment. No clinical trial had been possible. By analogy, it would appear that the most successful mode of coping with cholera infection — undeveloped or in the early stage of the disease — should be one directed at the *materies morbi* while yet the ailment is local, before systemic intoxication, the result of absorption of chemical poisons formed by the spirillum, is manifest. At a later period other indications preponderate. Then attention should be given less to destruction of the spirillum than to the neutralization of its toxine.

The line of intestinal antisepsis is apparently the most promising treatment of the early stage of cholera. There are two plans for the eradication of the spirillum, one that of evacuation and the other the employment of a germicide having a specific bacillary action. The latter, Dr. Stewart considers the more rational since non-disinfectant evacuants can effect only a partial removal of the spirilla, a few of which remaining are capable of enormous multiplication with a renewal and perhaps aggravation of symptoms. Evacuants, such as castor oil and calomel, by aggravating diarrhœa and provoking additional hyperæmia of the affected portion of the bowel may favor the advance of the disease. The use of castor oil in the light of past epidemics needs to be mentioned only to be strongly condemned. Calomel, in full doses, combines with its mechanical effect an antiseptic action; but this is apparently not exerted to a sufficient extent to render this drug of any special value as a disinfectant. Massive doses of calomel have been tried in past epidemics and found valueless for the control of the disease. In the recent epidemic abroad, reports of its use in moderate, frequently repeated doses, were more favorable.

Salol has been tried in the hope that it could destroy the spirillum, but as it is decomposed into carbolic acid and salicylic acid which are promptly converted into soluble, *absorbable* and very questionable germicidal salts, little undecomposed salol or carbolic acid could reach the lower segment of the ileum. In the recent Hamburg epidemic the consensus of opinion was that it was useless as a remedy.

It is desirable that the remedy to be used with effect against the contagion of cholera should be one slightly soluble and not easily decomposed and both non-toxic and non-irritant in doses amply sufficient to exert a germicidal action. Beta-naphthol is but slightly soluble in water and is both non-irritating and non-poisonous in quantity much more than sufficient to thoroughly disfectant the bowel against the ordinary putrefactive organisms. It does not readily decompose and would therefore be easily carried unchanged to the part of the bowel affected in cholera, without absorption occurring.

Dr. George M. Sternberg made experiments in the laboratory for Dr. Stewart to determine the antiseptic and germicidal value of alpha-naphthol, beta-naphthol, hydro-naphthol and benzo-naphthol, against the cholera spirillum. Dr. Sternberg made cultures from a case of Asiatic cholera taken from a Hamburg steamship in the lower bay of New York to the hospital at Swinburne Island. He found that with a solution of 1–1000 added to an equal quantity of a twenty-four-hours-old bouillon culture — making 1–2000 after mixture — and in which the time of contact varied from five to thirty minutes, alpha-, beta- and hydro-naphthol were found to destroy the cholera germ by fifteen minutes' exposure, but to fail after ten minutes' contact, so that the germicidal value of each of these is similar or nearly so. Benzo-naphthol has no germicidal power, probably because it is insoluble in water.

Dr. Stewart considers that these results are of great importance, in view of the fact that we have, at first, in cholera, a local, intestinal ailment of which many cases might be arrested at the onset, could easy, thorough disinfection of the affected part of the bowel be practised. Beta- and alpha-naphthol apparently fulfil all the desired conditions. As one part of either naphthol to sixteen thousand parts of culture medium is sufficient to prevent the development of the spirillum and 1–2000 is here an efficient bactericide, it would follow that but five grains of naphthol, if in solution, would be required to render the small intestine antiseptic against the cholera spirillum, while about forty grains under similar conditions would be germicidal. It would be difficult to formulate the exact dose necessary to create immunity against cholera in cases of the developed disease. The maximum medicinal dose of beta-naphthol is placed at fifteen grains, but the toxic quantity is, for a man, some ounces.

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[6] Practitioner, vol. 1, No. 1.

[7] Medical News, April, 1893.

[8] American Journal of Medical Sciences, April, 1893.

If the gastric irritability is such as to prevent the ingestion of naphthol, a prompt and thorough trial of it by Cantani's method of enteroclysis, two, and, if possible, more litres of warmed, saturated aqueous solution in a fountain syringe should be gently forced into the bowel by hydrostatic pressure, efforts being made to pass the ileo-cæcal valve and irrigate the lower ileum. Could this procedure be invariably successful in all cases of cholera — and Cantani holds that he has proved it possible, even with comparatively small amounts of fluid to force the valve — it would appear, Dr. Stewart thinks, that we probably have in naphthol enteroclysis, an almost certain specific for the arrest of cholera, if the injections are resorted to sufficiently early.

BROMOFORM IN WHOOPING-COUGH.[3]

Dr. F. W. Burton-Fanning says that Stepp reported in 1889, one hundred cases of whooping-cough treated with bromoform without a single failure, and his results were endorsed by other physicians. Dr. Burton-Fanning also reports thirty cases of his own treated with this drug. Bromoform is a colorless, oily liquid with an ethereal odor and sweet taste, insoluble in water. He suspends the bromoform in a mixture as follows:

Bromoform	[illegible]
Pulv. Tragacanth Co.	ʒss.
Syr. Simp.	[illegible]
Aquæ	[illegible]

For children under one year, he gives half a minim, up to three years, one minim, up to six years, two minims three times a day to begin with, then. if necessary, these doses may, with safety, be gradually increased until they are doubled. It is important to have a fresh supply once a week, to keep the bottle in the dark and shake it before taking the contents. Bromoform should never be used when it is of a brown color, as this is due to its decomposition and the liberation of free bromide. He considers bromoform of specific power against the paroxysmal cough on which the chief dangers of whooping-cough depends. The number of paroxysms with this treatment are much fewer, shorter and less violent, and the vomiting always ceases, but the duration of the disease is not materially shortened. If the bromoform be discontinued within four weeks, the characteristic cough and attendant miseries return at once. He also finds that this remedy is so specific in its action as to be of great use in diagnosis. In doubtful cases its success or failure to relieve the cough led him to a correct conclusion as to the nature of the disease, as subsequently established by other considerations.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

Regular Meeting Monday, February 27, 1893, the President, Dr. C. F. Folsom, in the chair.

Dr. J. W. Farlow showed a young woman with a very

MARKED CONGESTION OF THE GUMS

and some loss of the superficial epithelium. This condition had existed for about a year in spite of all treatment. A thin, transparent pellicle formed in places, an evident attempt at healing, but this was soon detached, leaving the gums in the same red and sensitive condition as before.

Her health is good, she takes excellent care of the teeth and mouth, and there is no disease of the teeth except slight Riggs' disease in one of the lower incisors. There is no evidence of any irritant in the food, tooth powder, or anything that enters the mouth. There is no trouble with the stomach, bowels or genital functions, and there is no evidence of lead, mercury or arsenic in the system.

She has been seen by many doctors and dentists, who say they have never seen such a case, and do not know to what to attribute it. Astringent, antiseptic, soothing, stimulating, mild and strong solutions have been used without benefit. Specific and all other internal medication has proved equally useless.

Dr. Farlow showed also a man, forty-six years of age, who had suffered for three years from

DYSPHONIA SPASTICA.

On attempting to speak he has a spasmodic closure of the glottis, and he has to press and strain to force out the words, in a way very suggestive of defecation. He was a worker in mercury, and is under the impression that the mercury is the cause of his trouble. But he has no other sign of mercury poisoning and there is no mercury in the urine. Nothing abnormal is seen in nose, throat or larynx, and he seems in robust health. His habits are good, there is no nervous disease and no history of syphilis. Galvanism, faradism, massage, strychnia, etc., have all been tried, but he continues about the same, as is usual in such cases.

Dr. Farlow showed another man, forty-one years of age, who had

LOSS OF THE UVULA

and complete adhesion of the soft palate to the posterior wall of the pharynx so that it was not possible to pass even a small probe from the mouth into the postnasal space back of the soft palate.

There was a large perforation of the hard palate, in the median line, near the uvula, the size of a silver half-dollar. Through this hole the left Eustachian eminence could be seen, but on the right the eminence was fused into one mass with all the surrounding adherent tissues. The patient has used, to fill up the hole, a roll of borated gauze. With this large mass of white gauze and the adherent soft palate, and no uvula, the back of the mouth presented a very unusual appearance.

Dr. A. Coolidge, Jr.: In regard to the first case which Dr. Farlow showed I saw another case very similar two years ago in Dr. Langmaid's service at the

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[3] Practitioner, vol. 1, No. 2.

Massachusetts Hospital. Almost exactly the same process was present, the same history, except that instead of being on the gums it was on the opposing mucous membrane, over a spot as large as a fifty-cent piece. In the same way that Dr. Farlow has tried different things on it, I used everything I could think of. I cauterized it and put on different washes and caustics, but when last seen it was about the same.

Dr. C. P. Strong: I have a specimen of a uterus with the ovaries, tubes, and also a cyst, which is probably of the ovary, possibly of the broad ligament alone, and this illustrates fibroids, subserous, submucous and interstitial, and also cancer. The specimen is interesting because it is removed by what I think to be the proper method: by abdominal incision with the patient in the Trendelenburg posture, and by a complete removal of the uterus and its adnexa, going down, as you will see, on the vagina a very considerable way. It would not have been possible to remove this growth by the ordinary method of vaginal extirpation alone. because this right ovary and tube were behind the uterus and firmly adherent to the uterus and rectum, so that I had to free that first. The specimen is interesting because it occurred in a colored woman, in whom we know cancerous disease to be extremely rare. I saw the case a week ago. The vagina was then filled with a large cauliflower excrescence, which I curetted off so as to get a clean surface for the operation. All this part is cancer down on the walls of the vagina. The cervix I curetted up to the internal os, so that there is no cervix left here. The disease has already extended into the body of the uterus. The ordinary operation of high amputation for which the patient was sent to the hospital, would have been difficult to do here because you would have gone into this large fibroid on the left side and also these smaller nodules on the right side, which would have complicated matters seriously. I curetted right through the peritoneal cavity and the posterior part of the vagina just below the cervix. That I sewed up at the time with silver wire, which I cut short and allowed to remain *in situ*. The patient's temperature has not been elevated. I believe this operation to be better than an attempt at any other. All the disease has been absolutely removed, and if the patient survives the operation I think she is cured from the cancer, whereas any other operation to remove that, I think, would have been impracticable. Ordinarily, a case like this, where we find the disease extending so far from the vagina and infiltrating it, would be pronounced a case for palliative treatment. The ovary on the right side is cystic. The ovary on the left is normal, except for this cyst. This cyst would also complicate matters. The cyst and broad ligaments and tubes have shrunken a good deal. The size of the uterus, also, has diminished a good deal, and it would have been a very difficult uterus to have withdrawn through the vagina if you had attempted extirpation in that way.

Dr. J. W. Farlow read a paper entitled,

IS NOT TOO MUCH IMPORTANCE ATTACHED TO THE CONDITION OF THE TONSILS?[1]

Dr. S. W. Langmaid: I can only agree with Dr. Farlow in what he has told us to-night. Too much stress cannot be laid upon the directions he has given. It is best not to consider the tonsil as the offending member always, but to look around above and about it. Such cases as he has related are very common in the throat specialist's experience.

Dr. Farlow has said almost nothing in regard to when the tonsils should be removed, and so that is hardly a proper matter for discussion. I suppose his paper refers almost entirely to the tonsils in children and very young adults. I do not believe he would have us infer that the tonsils should not be frequently removed. Certainly, if in adults, especially, the voice is injured, modified, it would be frequently necessary to remove the tonsils, and that is about all that may be necessary to be done in many cases; but I quite agree with him that the wholesale taking out of the tonsils, the considering of those as the only offending members or parts, is not right, not good practice. Dr. Farlow has spoken of examining the teeth. I think that is always necessary, but I think it will be found that many times in young children the tonsils are enlarged even by the first dentition. I am very sure that I have quite a number of times seen the tonsils very much diminish, without any particular treatment, when the seven-year molars appeared. That is in the line with Dr. Farlow's paper; namely, find the cause if you can of the enlarged tonsil. I have seen two cases within a few years where in a young adult a defective tooth was the cause of a very much enlarged tonsil. In both cases, the filling of the tooth was followed by a recession of the tonsil so that nothing further was necessary. The enlargement was caused by the irritation of the defective tooth. It seems to me Dr. Farlow's paper was needed. Its instructions are most valuable.

Dr. T. A. DeBlois: While not entirely agreeing with Dr. Farlow, yet I will say that it has come in my way this year to remove more tonsils than I have for nearly ten years previous. I think I have removed five or six this year. Before that time, about eight or ten years ago, everybody was removing tonsils, and I had my share in the crop, not so many as the late Dr. Elsberg (who supposably removed many thousands); but after that period the tonsillotome was put away and not used for about eight years. I have always been opposed to removing tonsils. I think there ought to be some way of treating the disease, but it is a very common thing to have patients sent into your clinic with a request from somebody else to cut off the tonsils, and we very frequently have to be disobliging if we do not care about removing them. It is still a popular idea that removal of the tonsil prevents recurrence of tonsillitis, in its different forms. I think we have all lived to find out that the tonsils have very little to do with tonsillitis. Some of the worst cases I have seen have been cases after the removal of the tonsil. It is, of course, in the surrounding tissue; but there are tonsils which from their form and size interfere with respiration, and particularly during sleep. The child lies, perhaps, on its back, and these tonsils will fall back against the pharyngeal wall, and, of course, we know that there are cases of hypertrophy of the tonsils in which the two bodies lie in apposition. They never are separated. They may be separated during a cough or something of that sort, but in the state of rest they lie in apposition, and there is a very small triangular chink between the two tonsils and the base of the tongue, and between these bands the child has got to breathe; and in such a case adenoid disease does not necessarily interfere with respiration. But take the cases we frequently see in which the tonsils are large, in which there are adenoids, but in which these adenoids do not block up the posterior nasal openings, why, of course, the tonsils must interfere more with respiration than the adenoids do, but we frequently, I think, find that there is adenoid disease in conjunction with enlarged tonsils. The two are very apt to occur together.

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[1] See page 568 of the Journal.

Dr. G. A. Leland: I have been very much interested in Dr. Farlow's paper, and agree with most that he said, especially where he speaks of the frequency with which the tonsils are looked upon as the sole cause of the trouble. It is true that many cases in which the general surgeon has removed the tonsils, expecting thereby to eradicate all the disease and its troublesome symptoms, often prove disappointing. I have in mind a case of a little German boy four years and a half old, where the tonsils had been guillotined some six months before I saw it, but the symptoms of mouth breathing, noisy sleeping, and blank expression of countenance had not abated. The tonsils, also, had returned almost to their previous size. Under ether, I removed a very large amount of adenoids, which completely filled the naso-pharynx, extending even down below the velum palati. After the operation the symptoms disappeared, and even the faucial tonsils shrank away to a very large degree. This latter result, it has been my privilege to observe a considerable number of times, although, if the tonsils are large enough to be in any way obstructive, it has been my custom to remove them at the time of the operation.

Dr. DeBlois: I heard the late Dr. Hooper's paper on the removal of adenoids, and I was struck by his remark, that after the removal of adenoids the tonsils almost invariably atrophied.

Dr. J. P. Clark: I have nothing to add to the discussion of Dr. Farlow's interesting paper. Dr. Leland's remark about the tonsils diminishing in size after the removal of adenoids, is certainly true in a great many cases, and I think where the tonsils are only slightly enlarged, it is often best to leave them alone at the time the adenoid is removed. Very frequently it will be found, after several weeks, that they have diminished in size sufficiently to avoid the necessity of any operative procedure on them.

Dr. Cobb: I should like to differ in the cases I have seen of adenoid removal. I do not think there was much subsequent atrophy of the tonsils, and Dr. Hooper told me that he had previously thought that the tonsils did atrophy, but subsequently his experience convinced him that they only did so to a slight extent.

I should like to ask Dr. Farlow how he relieves cases of pain referred to the throat where the wisdom teeth come beneath the gum, and cause so much trouble that the patient can hardly open his mouth? I have talked with dentists about it and they do not suggest anything very satisfactory.

Dr. Coolidge: I agree, I think, entirely with Dr. Farlow's conclusions. I have often been struck with the number of cases that appear in a throat clinic with a diagnosis of enlarged tonsils, often by physicians, in which there are no enlarged tonsils, and sometimes no tonsils at all to be seen in opening the mouth quietly. I think it is extremely important in all cases of enlarged tonsils to be very sure of the condition of the naso-pharynx before doing anything to the tonsils at all, because large tonsils often do not do so much harm as a small amount of trouble in the nasopharynx. As to the tonsils becoming smaller after adenoid operations, if they are small and do not obstruct respiration much, they often atrophy, but generally slowly. If the tonsils are so large that they are evidently obstructing, it is better to take them out, or part of them. If you cut off half a tonsil the rest will often shrink very rapidly; and this is especially true in patients past the age of puberty. Removing half a tonsil, when they are very large, will often relieve the symptoms. Patients with very large tonsils have a characteristic voice, sounding as if there were foreign bodies in the throat, as there are. The speech is different from the speech due to obstruction by adenoids, or in the nose itself, and in such cases the tonsils ought to be taken out. You hear the same kind of speech sometimes when the tonsils are inflamed.

Dr. Farlow: In reference to what Dr. Langmaid says about the paper having more reference to children than to adults, this is, of course, true, because the tonsils are much oftener subjected to treatment in children, while in adults they usually atrophy and are the cause of less trouble. I think that what Dr. DeBlois says about tonsillitis occurring after tonsillotomy is perfectly possible. Frequently recurring tonsillitis often goes with chronic follicular tonsillitis. Instead of cutting off part of such a tonsil and leaving the rest of the diseased organ behind, it seems to me that the proper way is to treat the diseased follicles to their entire depth. Remove the secretion, disinfect the crypt and use proper applications and the cautery, and the tonsil will thus be made more healthy and less liable to inflammation.

As regards what has been said about the shrinking of tonsils after the removal of adenoid disease, I think that some cases diminish very much, whereas in other cases the tonsils remain about as before and need removal. When I spoke in my paper about the wholesale removal of tonsils, I did not mean that they should never be removed, because I often find cases where the removal proves beneficial. But I do wish to emphasize the fact that if we remove the tonsils without reference to treatment of the nose and post-nasal space we shall often remove tonsils unnecessarily and our treatment prove unsatisfactory and insufficient.

Dr. Edward Reynolds read a paper on

EARLY DIAGNOSIS AND PROMPT TREATMENT OF PUERPERAL SEPTICÆMIA.

Dr. W. H. Baker: I am exceedingly glad that Dr. Reynolds has brought this subject so forcibly before the Society. I think it is a very important one indeed. It so completely harmonizes with my opinion that I could almost make use of the same language. A week ago in a lecture on lacerated cervix I said I thought that the profession was perhaps only just beginning to realize the importance of mild sepsis from a slight laceration of the cervix as the cause of subsequent uterine disease and that it was my opinion that if we could take away the element of sepsis from such cases that we should remove the source of subsequent uterine disease in nine-tenths of the cases. I was gratified to find the reader's experience was similar to mine in regard to the ability to obtain a careful and minute inspection of the cervix and the vagina by the use of Sim's position and speculum. That is a point to which

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* See page [illegible] of the Journal.

I have held for a long time. I think the importance of this subject is very great and I feel sure that if this paper can be given a wide circulation through the press that it may have a great deal to do with the more careful treatment of obstetric cases both at terms and in the early abortions where I believe it is highly important as well.

DR. J. B. SWIFT: I am very much interested in the paper. I think it is an important subject and one that should be brought before the profession very decidedly. Those of us who have a dispensary practice see a great many cases, the result of mild sepsis, which certainly could have been prevented. I fortunately have seen very few cases of the active disease; my experience being limited to hospital cases which have entered in a septic condition following an abortion, and the treatment I have followed has been similar to what Dr. Reynolds has stated, and in every case but one they have left the hospital well. This case had the condition Dr. Reynolds speaks of, the tender mass limited to one side of the uterus. I regarded it as a tube that was inflamed and thought probably the patient would return for operation later, but a year after she was delivered of a child and as far as I know has had no trouble since, all symptoms from that side having disappeared. I think the importance of recognizing these slight attacks of sepsis is not realized by the general practitioner, and the antiseptic care is not given to the patients which might be given very easily.

DR. H. W. BROUGHTON: I would like to ask Dr. Reynolds to state definitely his position in regard to curetting. I have for some years followed the methods of examination he has laid down. The only matter that seems to me especially new in treatment is the matter of curetting. That I have not done in these cases, and I would like to ask if he would advise curetting in the mild cases, if a simple intrauterine injection and the subsequent use of the iodoform pencil immediately reduced the temperature. My thought would be that curetting would be unnecessary if a simpler measure was sufficient, although I should fully agree that the slight operation of curetting would be undoubtedly called for, if the simpler procedure was not immediately successful in reducing the temperature.

I must say that the faithful observance of the rules taught at the Harvard Medical School in regard to the treatment of lying-in women renders a persistent high temperature of very rare occurrence.

DR. REYNOLDS: The discussion represents just what one would know it would, in the fact that these things are rapidly becoming very trite to men who have paid especial attention to the subject. The especial point which I wished to bring out is not the treatment of severe sepsis, which is perfectly well understood to-day by most men, but of the very slight attacks of pyrexia, abdominal pain, and staleness of the lochia; that these are sepsis; and not that the slightest hint of a question of sepsis is enough reason for curetting the uterus, but that it is enough reason for the most thorough examination possible. I think the gentlemen who have not been in the habit of adopting a vaginal examination with a rise of temperature, say to 100°, maintained for two or three temperatures, will be surprised to find how often such an examination will demonstrate one little spot of sepsis that can be treated by very mild measures, and will result, not in the gradual subsidence of the temperature and secondary subinvolution of the uterus, but in its prompt restoration to a healthy condition.

Dr. Swift's remarks lead me to wish to define my words a little more exactly by reminding him that I purposely avoided speaking of tubes.

As regards the question asked by Dr. Broughton, if the patient is reasonably confident of the good intentions and faith of her medical attendant, and willing to submit to hardly more than severe discomfort, I think you can generally get along without ether perfectly well. The dexterous use of the curette should be but little more painful than the introduction of the intrauterine tube for the douche. In some cases it is necessary to use ether.

As regards the choice between the douche alone, and the douche followed by the curette, of course, if the douche is sufficient it is better to do nothing more. I think there are a few very mild cases in which the douche alone is followed by a very prompt return to a normal temperature, but I think they are few and very mild. Whereas, five or six years ago I was accustomed to give a douche, and often to give it again, and to see the temperature come to the normal within two or three days, by a gradual descent, since I have taken up the habit of using the curette in all but the extremely mild cases I have grown to expect that the temperature will be normal the next time it is taken; and I think the difference between a gradual return to the normal, and in the majority of cases an immediate return, makes a very appreciable difference in the probability of a return to a complete local health. But I do think that to a certain extent these questions are to be decided by the personal equation. The operation of curetting the uterus is easy to any one, and any general practitioner of fair dexterity ought to do it as safely as the most expert; but there are a good many men doing obstetrics who are not naturally or by taste fitted for surgery and are clumsy in all mechanical manipulations, and I think very likely there are a good many such men who would be timid enough not to use the curette thoroughly, but would leave a raw surface to be covered with foul detritus; and I am sure that they had better limit themselves to the use of the douche, except in very acute cases.

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AMERICAN SURGICAL ASSOCIATION.

THE Annual Meeting of the Association was held on May 30, 31, and June 1, 1893, in the Alumni Hall of the Medical Department of the University of Buffalo, N. Y.

DR. M. D. MANN, of Buffalo, delivered the Address of Welcome.

The President's Address was next delivered by **DR. NICHOLAS SENN**, of Chicago, on

A NEW METHOD OF DIRECT FIXATION OF FRAGMENTS IN COMPOUND AND UNUNITED FRACTURES.

The speaker said that while the adoption of rigid antiseptic precautions has reduced the mortality in the treatment of compound fracture from fifty to seventy per cent. to almost nothing, yet the mechanical treatment of compound and ununited fracture has undergone little improvement during the last decade. The principal object of the address was to make an earnest plea in favor of more frequent recourse to direct means of fixation in the treatment of compound and ununited fracture. The time is at hand when compound fracture should be treated upon the same principle as wound of the soft parts, namely, the bringing into apposition and holding in contact by direct mechanical measures, the different anatomical constitutents of the wound until the process of repair is completed. In oblique fractures of the femur, it is generally conceded that continued extension and external fixation do not succeed in preventing more or less shortening and angular deformity. Long-continued extension is followed by temporary and often by permanent injury to adjacent joints. Overriding of the fragments is often productive of harmful pressure upon important vessels and nerves. Displacement of the fragments and imperfect mobilization are the most important factors in the production of exuberant callus which so often impairs the functional result. The displacement of detached fragments in comminuted compound fracture is often not recognized, and much less frequently corrected, without direct intervention; thorough disinfection is frequently out of the question without enlarging the external wound and free exposure of the fracture. Long confinement to bed is detrimental to the general health, and often the indirect cause of many fatal intercurrent affections. These evils attending treatment of compound fracture can be avoided in a measure by direct fixation of the fragments. This enables the surgeon to bring the fragments into accurate apposition and secure permanent retention, and it also enables him to disinfect every part of the wound and to arrest hæmorrhage.

The history of directed immobilization of fragments was then reviewed. The different methods of suturing were then considered. The use of ivory cylinders and clamps was described.

The absorption of aseptic ivory and bone in the living tissues was then taken up. Investigation has shown that there is a limit to the absorption of aseptic absorbable bodies. The introduction of large and solid foreign substances over-taxes the absorption capacity of the tissues; and either removal by operative treatment becomes necessary, or spontaneous elimination is sure to take place sooner or later. To overcome this objection the author recommended (as absorbable, intraosseous splints) hollow, perforated cylinders of bone. The use of such cylinders does not interfere with the early formation of the intermediate callus from the medullary tissue. Such cylinders should be made of the shaft of the long bones of young animals, such as chickens, turkeys or rabbits. Experiments and observation prove that bone or ivory used in the direct fixation of a fracture can be safely left in the tissues with the expectation that the material will become encysted and remain harmless, and that in the course of time it will be removed by absorption. Bone is absorbed more readily and in a shorter time than ivory. A hollow cylinder of bone inserted into the medullary cavity of a bone is removed completely by absorption in a comparatively short time. The same fate awaits a thin ring of bone embracing and holding in mutual uninterrupted contact two or more fragments in the treatment of compound and ununited fractures by direct fixation.

The most efficient way to prevent lateral and longitudinal displacement in oblique fractures of the shafts of the long bones is to bring the fractured surfaces in accurate contact and hold them in this position by an efficient absorbable circular support. The use of silver wire and other inabsorbable material for this purpose is objectionable. Catgut and other absorbable ligatures are not sufficiently durable. It had occurred to the author that such fractures could be retained almost to perfection after reduction by engaging the ends of the fragments in a ferrule or ring of bone or ivory. This will prevent overriding and undue shortening. Angular deformity and rotation can be prevented by appropriate external support. The results which have attended this method have been exceedingly satisfactory.

The method of preparation of the bone ferrule was described, and a number of the ferrules of different sizes exhibited. Three cases were reported in which the method had been employed. Case 1 was an ununited fracture of the femur; direct fixation of fragments; union with fragments in good position. Case 2 was an ununited fracture of the humerus resulting from extensive loss of bone; paralysis of musculo spiral nerve; direct fixation of fragments by artificial impaction and bone ferrule, aided by catgut sutures; secondary nerve suture. Case 3 was one of compound comminuted fracture of leg; fixation of tibia with bone ferrule; fenestrated plaster-of-Paris splint, suppuration; efforts at repair.

The speaker then detailed his experimental work with the bone ferrules.

His conclusions were as follows:

(1) Direct fixation of the fragments is indicated in all compound fractures in which perfect retention cannot be secured by simpler measures, and in the treatment of ununited fractures, requiring operative interference.

(2) This method is also justifiable in the treatment of certain forms of subcutaneous fractures in which reduction and retention cannot be accomplished without it.

(3) Free exposure of the fragments in compound fractures secures the most favorable condition for thorough disinfection.

(4) Perfect reduction and direct fixation of the fragments are the most reliable prophylactic measures against delayed non-union and deformity.

(5) A compound fracture should be regarded in the same light as an injury of soft tissues and should be treated upon the same principles, namely: accurate coaptation of the different anatomical structures and perfect retention by direct means of fixation aided by an efficient external support.

(6) Bone suture, metallic, bone and ivory nails do not furnish the necessary degree of support and immobilization in the direct treatment of fractures characterized by a strong tendency to displacement.

(7) The solid intra-osseous splint of ivory or bone as advised by Heine, Langenbeck and Bircher is objectionable, because it interferes with the ideal production of the intermediate callus and its spontaneous removal is beyond the absorptive capacities of the tissues.

(8) The hollow, perforated-ivory or bone cylinder, devised by the author, answers the same mechanical purpose without the objections which have been charged against the solid cylinder.

(9) The safest and most efficient means of direct fixation of oblique fractures is by a bone ferrule which must be applied in such a manner that it surrounds both fragments.

(10) Such a circular, absorbable, direct splint prevents to perfection lateral and longitudinal displacement.

(11) Rotation of the limb below and angularity at

the seat of fracture must be prevented by a carefully applied circular plaster-of-Paris splint.

(12) For fractures not requiring drainage the entire wound should be closed by buried and superficial sutures, as the bone ferrule is removed by absorption.

(13) In suppurating wounds the bone ferrule should not be removed until direct fixation has become superfluous by the formation of a sufficiently firm union between the fragments.

(14) The external splint should be applied in such a manner that it does not require a change throughout the entire treatment, permitting at the same time access to the wound, should this become necessary.

(15) Direct fixation of a fracture combined with perfect immobilization, brings the different anatomical structures of the broken bone permanently into their former normal relations, preparing the way for the early initiation and speedy consummation of an ideal process of repair and the realization of a perfect functional result.

(16) Should further experience demonstrate that bone is not sufficiently absorbable, the same kind of ferrules can be made of partially decalcified bone or chromacized catgut.

Dr. Roswell Park, of Buffalo, said that in discussing the paper he was under the disadvantage of not having seen the author's conclusions. He thought the method might be practised with advantage where there is much displacement and difficulty in maintaining the fragments in position. In two or three cases he had used Volkman's method of dovetailing the fragments together with advantage. In some cases he had used chromacized catgut or silk-worm gut with good results. He had used ivory except in the form of small pegs. In suturing the fragments through holes drilled through the bone it is often difficult to bring the lower end of the suture around and tie it. It is easier to pass the suture around the bone by means of a modified aneurismal needle. It seemed to him that the application of the ferrule of Dr. Senn would require considerable disturbance of the soft parts and might give rise to local necrosis.

Dr. F. S. Dennis, of New York, said that in the consideration of the management of compound fracture and ununited fracture we can eliminate entirely the question of sepsis. The surgeon can employ any of the methods suggested without the fear of septic complications. The method suggested by Dr. Senn is without doubt excellent in every way, but we can probably arrive at some simpler method of treating ununited fractures. He had been in the habit of resorting to drilling of the bone, and always with success. In some cases small ivory pegs have been driven into the drill holes. Another method to which sufficient attention has not been given is that of tenotomy. This at once relieves the muscular spasm and gives comfort to the patient. There is then no muscle to contract and disturb the fragments. If physiological rest is thus secured then is less liability to non-union. In simple fractures it is not a bad rule to divide the tendons at once.

There is no question in regard to the development of malignant disease in ununited fracture. The speaker had seen some fifty cases of sarcoma develop as the result of traumatism in bone and these have usually been cases where there has been some movement in the fragments. Epithelioma has also been seen in cases where there has been a sinus running down to loose bone.

The amount of disturbance of the parts seems to be an objection to the use of the ferrule; but this might be obviated by dividing the ferrule into two parts and securing them together after application.

Dr. DeForest Willard, of Philadelphia, remarked that at the Presbyterian Hospital of Philadelphia Dr. Allis and himself had been using methods of direct fixation where there is great tendency to displacement. In order to facilitate the application of sutures he had had made drills with an opening extending through the drill, and through this the suture could be readily passed. This saves much time. He had seen a number of cases of Gluck's ivory insertions; but in every case with one exception the ivory plug had been discharged or was in process of discharge. The exception was a case where the ivory plug had been passed into a metacarpal bone.

The method of dovetailing referred to by Dr. Park is valuable. The fragments may be held together by the use of screws. Dr. Allis uses steel screws for this purpose, which can be removed later if necessary.

The use of plaster-of-Paris dressing is one of the most important elements in the treatment of compound fractures. To hold the parts at absolute rest, there is nothing equal to plaster-of-Paris. There seems to be something beside the absorptive power of the plaster which lessens the tendency to decomposition.

Dr. L. McLane Tiffany, of Baltimore, did not see how the ferrules could be used with advantage in comminuted fractures. The application of the ferrule in these cases is liable to cause separation of some fragments which might otherwise unite. In the three cases reported the ferrules seemed to be used simply as an adjunct to other methods. There is no method applicable to all cases, and often the method cannot be decided upon until the fragments are exposed. In cases where there has been much loss of bone, the use of the ferrule does not seem applicable. In such cases the steel splint with steel screws had been in his hands the only method of holding together the fragments. In compound comminuted fracture the fragments may be placed in position with the finger and held in place by the plaster-of-Paris bandage. It did not seem to him that the case had been made out except that in certain instances the method described is a good adjuvant, but that it is so in many cases, he was inclined to doubt.

Dr. M. H. Richardson, of Boston, said that in most cases of ununited fracture treated by the application of silver wire, recovery follows satisfactorily. He thought that the same is true from the use of ivory pegs. Occasionally, as Dr. Senn advised, the application of the ferrule is of service and is a rational method. He reported a case of transverse fracture of the humerus operated on several times by silver wire sutures but without securing union. In such cases where it is desirable to keep the bones from slipping transversely, the method of Dr. Senn will answer a useful purpose. In ununited fracture with extensive loss of substance, the periosteum and medullary cavity do not come in contact and he did not see how this was provided for by the method described.

Dr. J. Collins Warren, of Boston, had also operated on the case referred to by Dr. Richardson; but the lack of union was due more to the condition of nutrition than to failure of mechanical appliances. The patient is five feet eight inches in height, and weighs 300 pounds. At the suggestion of Dr. J. J. Putnam, the patient had recently been put on the use of thyroid juice. During three weeks' treatment the patient had lost ten pounds, but the method had not been continued sufficiently long to determine what the ultimate result will be.

DR. JOS. RANSOHOFF, of Cincinnati, asked if Dr. Senn intended the use of the method he had described to do away with the use of external appliances.

DR. N. SENN said that his remarks had been misunderstood. He did not protest against the use of external support, nor did he charge this with the production of permanent damage. He had alluded to continuous extension for six or eight weeks as being productive of such results. There is no method of direct fixation, and probably never will be, that will render external mechanical support unnecessary. All that he wished to overcome was the tendency to lateral displacement and to bring by such direct means similar anatomical structures into mutual contact and hold them there. The angular deformity and rotation can be overcome by the use of plaster-of-Paris bandages.

(To be continued.)

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Recent Literature.

L'Estomac et le Corset: Deviations, Dislocations, Troubles fonctionnels de l'Estomac, provoqués par le Corset. By Dr. E. Chapotot. Pp. 106, with 23 figures intercalated in the text. Paris: J. B. Ballière & Fils. 1892.

This contribution to the literature of personal hygiene treats very fully of the effects of the diabolical engine of feminine destruction known as the corset. The author devotes a chapter to the history of the subject; another to the anatomy of the thorax, the stomach and the neighboring organs; a third to the methods of examination; and a fourth to the clinical study of the subject, in which are embraced the external signs of compression of the thorax, its action upon the viscera, and the mechanical, nervous, and other troubles which are produced by such compression. Special notice is given of this gradual formation of what the author names the *poche sous-pylorique.*

A brief chapter is devoted to the treatment of the results of compression by the corset, and a good bibliographical index is added.

Transactions of the Massachusetts Medico-Legal Society. Vol. II, No. 3. 1893. Boston: Damrell & Upham.

This number of the "Transactions of the Massachusetts Medico-Legal Society" contains the following papers which have been read before the Society, most of which have already appeared in this JOURNAL:

"Discussion on Sudden Deaths from Diseases of the Organs of Circulation"; "Abdominal and Pelvic Emergencies causing Sudden Deaths," by Dr. J. C. Irish and Dr. A. K. Stone; "Sudden Death from Affections of the Nervous System," by Dr. P. C. Knapp; "The Coy Murder," by Dr. F. K. Paddock; "Three Cases Illustrating the Identification of the Human Skeleton."

THE vacancy on the visiting board of the New York Foundling Hospital, caused by the death of Dr. Charles C. Lee, has been filled by the election of Dr. W. P. Northrup, for many years pathologist of the hospital.

THE BOSTON

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URETERAL SURGERY.

WHEN ovariotomy comprised the whole of abdominal surgery, the ureters were not thought of as in any way demanding attention or complicating the problem. They did not come into view in the field of operation, nor was it necessary to observe any precaution to avoid wounding them. The large tumors which were then considered the sole condition justifying a cœliotomy, grew up out of the pelvis without disturbing them in their hidden course. But as the scope of abdominal surgery enlarged, these retiring, but nevertheless, most important structures, began to claim attention. The moment the surgeon ventured to include the pelvic floor in his field of operations, the ureter began put in a claim for recognition. Abdominal hysterectomy for myomata, and vaginal or abdominal hysterectomy for cancer, are operations in which, under certain conditions, the ureters are liable to be wounded. This constitutes one of the reasons why the ureters are beginning to receive more attention than formerly.

A second has to do with the greater precision in diagnosis, which is demanded in this end of the nineteenth century. If there are symptoms of bladder trouble and no casual condition is found in that organ, we must look farther and interrogate more remote and inaccessible structures. If there is evidence of kidney disease it is sometimes essential to a correct understanding of the case that we know whether both kidneys are diseased, and if only one, which is at fault. This has led to the study of the anatomical characteristics and relations of the ureters and of the various pathological changes of which they may be the subject.

The writer remembers, when a student in Heidelberg, in the seventies, seeing Prof. Gustav Simon sound the ureters. It was in the nature of a pyrotechnic display, being reserved, together with the demonstration of the possibility of introducing the whole hand into the rectum, for the delectation of visiting surgeons and was evidently practised more for the sake of showing what was possible than with the idea of its being of much practical importance. Simon dilated the urethra, and introduced the finger into the bladder, and feeling the openings of the ureters, passed the sound in that way. Pawlik, a number of years after, published several articles describing a simpler method of procedure, and applying the knowledge thus gained in a more practical way.

In recent years, Kelly, of Johns Hopkins, has contributed more than any one else to our knowledge of the ureters, and the pathological changes to which they are subject, and has, at least, laid the foundation of methods of surgical treatment. Two things strike us as we read his latest exposition of investigations and work in this direction: first, the diseases of the ureters will, for a long time to come, be exceedingly difficult of diagnosis, and second, that the surgical treatment of them will be possible only to a few, and will remain in their hands. We do not believe that many surgeons or gynecologists have the requisite skill, or can easily acquire it, to catheterize the ureters in any but a small minority of cases, and, even in these, not without considerable risk; and unless this is possible, the diagnosis of affections of the ureters will be a matter of guess-work. Kelly adds one valuable bit of symptomatology to our knowledge, namely, that pressure on an inflamed or sensitive ureter, either through the anterior vaginal wall or through the abdominal wall where it passes over the promontory of the sacrum, causes a strong desire to urinate. This observation was confirmed by Dr. Willy Meyer.

Dr. Kelly has made a very thorough study of the topographical anatomy of the ureters, and, as a result has demonstrated the fact that they can be palpated much more extensively than has ever been done. Thus, in addition to palpation of that portion which can be reached from the vagina, that is, until they pass beneath the broad ligament, he also claims to be able to make them out per rectum when enlarged, as they pass up over the posterior pelvic wall, and when of normal size, "by introducing a ureteral catheter through the urethra and bladder into the ureter, and carrying it up to or over the brim of the pelvis." The catheter with the displaced ureter can be easily palpated through the rectum, and, though less distinctly, even through the anterior abdominal wall. His method of locating the abdominal portion of the ureters by surface landmarks is "to find the promontory of the sacrum by pressure through the abdominal wall and from this to locate the point at which the ureter enters the pelvis from three to three and one-half centimetres outside of and a little below the promontory." The pulsations of the common iliac artery show that the correct spot has been found.

Such minute studies of the course of the ureter make treatment of their diseases and those of their respective kidneys possible. By catheterization it is feasible to obtain the urine from each kidney isolated. The presence of stricture of the ureter can be demonstrated, and also a possible result of structure, which Kelly calls hydro-ureter. Which kidney is diseased, and how much work the sound one does, can be ascertained, and hints as to the character of the disease present be arrived at. In one case an examination of fluid drawn from the right ureter showed the existence of a tuberculous ureteritis, probably associated with a tuberculous nephritis.

This work is important. As we said before, its technique is so delicate and so difficult, that in its full development its practice will probably be confined to the few who possess exceptional manipulative skill, with large clinical advantages. But every abdominal surgeon and every gynecologist will reap advantage from such studies as these. The knowledge of the possibility of bringing to our aid these new methods of diagnosis in obscure cases will be an incentive to use them, and it may be, though it seems unlikely at present, that in the future the ureter will be catheterized as easily, and with as much impunity, as we now sound the uterus. Such thoughts are but dreams, however, at present. The practical lesson to be learned from these investigations is, that even obscure and apparently inaccessible organs may, by painstaking work, be brought within the reach of the examiner, and that every new organ which is thus rendered the object of legitimate research throws new light upon obscure diseases.

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RAGS AND CHOLERA.

Commercial interests and the protection of the public health occasionally come into collision with each other; and in such instances the interests of the manufacturer, the merchant, and the mill-owner should yield to the more important measures intended to secure the protection of human life and health. But the restrictions which are devised for securing safety to the people should neither be oppressive nor unreasonable.

Coincidently with the appearance of cholera in European seaports and cities, the question of placing stringent restrictions upon the importation of foreign rags into the United States has been made to assume an aspect of unusual importance in the columns of the daily press. How far the discussion of this subject is inspired by conflicting commercial interests it is not our province to decide.

In a recent issue of the New York *Times* (June 4th) its London correspondent states that there "has been next to no disinfection, whatever, of scores of thousands of tons of rags gathered last year in the cholera districts of Europe, and since then shipped to America." He further says that rags in large quantities (20,000 bales) have been allowed to leave the port of Hamburg, during and since the epidemic outbreak at that point, with little or no disinfection, and that "these very rags, not yet unpacked, are stored in warehouses of consignees not far from Boston"!

So far as cholera is concerned, it is a matter of no small interest to know just where, and in what manner the question of danger from its importation by means of rags has arisen. Rags are undoubtedly dirty, and are occasionally the medium of transmission of the infection of small-pox. This statement, however, does not apply to cholera. The importation of rags into the United States covers a period of sixty years or more, during which period the principal serious epidemics of cholera have also occurred. During the same time the importation of rags may be reckoned by thousands, almost by millions of tons; and yet no case of cholera in the United States has ever been traced to their importation, nor has any well-authenticated case of cholera ever been reported as due to such traffic in any other country.[1] Undoubtedly, the permanence or vitality of the cholera germ differs very greatly from those of small-pox, and of some other contagious diseases, and to this difference the comparative immunity from the danger of transmission of cholera may probably be attributed.

Writers upon this subject usually make no distinction between clothing and rags. As a matter of fact, the transmission of cholera has almost invariably been traced to the migration of human beings from one country or place to another, and to their personal effects, carried with them in trunks or boxes. Such persons coming with their personal effects from an infected district, may arrive in a new district several thousand miles distant within a very few weeks, or even a few days interval, as happened in 1873, when localized outbreaks followed the arrival, in three of the Western States, of parties of immigrants coming from infected districts in Europe. In some of these cases the outbreak followed very soon after the opening of trunks containing clothing which was believed to have been infected.

The confounding of rags and personal clothing as probable media for the transmission of cholera appeared prominently at the meeting of the International Congress of Hygiene at The Hague in 1884, especially in the sensational address of Dr. Ruysch, entitled "Rags a National and International Danger." In the case of rags, however, which have been imported into this country, an interval of less than six months rarely occurs between the date of their collection, their sorting, drying, baling, detention in warehouses, transmission by sea, storage on this side of the sea and final exposure to human beings, when unbaled at the mills in this country. This lapse of time and the exposure to air and consequent drying would necessarily prove fatal to the life of the cholera germ.

In the very complete history of the cholera epidemic of 1873, made by authority of the United States government, the author states very explicitly (page 9) that "it has not yet been demonstrated that merchandise in contradistinction to passengers' luggage is ever the medium of carrying the cholera poison across the Atlantic."

The experience of Holyoke is worthy of note in this connection. This city of rapid growth dates from 1849, when a force of two or three thousand laborers were at work on the banks of the Connecticut River, building a dam and laying the foundations of the future city. Cholera broke out among these laborers, and destroyed the lives of nearly a hundred of their number. In the following year, paper-mills were built; and their number increased, until Holyoke has become the largest paper-making and rag-using city in this country. Yet, since the establishment of that industry and the constant use of foreign and domestic rags in very large quantities, cholera has not appeared again in Holyoke, either in the epidemic of 1854, or in those of 1866 or 1873.

With the foregoing facts in mind it does not appear that the presence of these rags "stored in warehouses of consignees not far from Boston" (whether in Brookline, Newton, Chelsea or the Middlesex Fells, the correspondent does not specify), constitutes a serious menace to the inhabitants, either of the metropolis or of its suburbs. No rags have been imported direct from Hamburg to Boston since August 14, 1892; and that last importation was held until January of the current year. Under existing regulations rags cannot be imported direct from infected districts. If the alarmists who are periodically clamoring for restrictions upon this important industry, would turn their attention seriously to the more important measures of municipal sanitation, and especially to the purification of water-supplies wherein the chief danger lies, a great public good would be accomplished, though possibly their personal ends would not be as well subserved. Much would also be gained if newspapers and their correspondents would abstain from sensationalism under existing circumstances.

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MEDICAL NOTES.

ADVISORY MEDICAL INSPECTORS. — The bill for the appointment of advisory medical inspectors throughout Massachusetts has been rejected by the legislature.

THE INFLUENCE OF COLLEGE ATHLETICS ON HEALTH. — Dr. W. N. Conant will read a paper on this subject before the Section for Medicine at the coming meeting of the Massachusetts Medical Society.

THE SURGEON-GENERAL OF THE ARMY. — The President has appointed George M. Sternberg, M.D., to be Surgeon-General of the Army. There were ten officers in the medical department his seniors in service, several of whom have but short time before retiring: Dr. Sternberg will have nine years before going onto the retired list.

NEW YORK DISPENSARIES. — A list of these, with the number of patients treated, have been published by a New York daily paper. The total number of cases reported for the year was 628,486, which after deducting for probable duplications, left about 450,000 treated as out-patients. The number of institutions including the general and special ones, amounted to forty-eight.

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[1] The solitary reported case, of which the details are incomplete, occurred in Switzerland. The rags were *domestic rags*, and were carried only fifty or sixty miles before they were used in a paper mill.

IMMIGRATION. — More immigrants were landed in New York during May than during the same month last year by about six thousand, the total number being over seventy thousand.

KITASATO, who, it will be remembered, after doing work of the greatest value in Berlin, was recalled by the Japanese government to take charge of an imperial institute, appears to be still working on the broths of cultures of tubercle bacilli, if the daily papers are to be believed. The same authorities announce that his experiments have been found of practical value, and that "he has no personal financial interest in the discoveries he has made, or is to make."

NEW YORK.

STERILIZED MILK. — Mr. Nathan Strauss, who during the past winter maintained a depot for supplying coal in small quantities at cost price to the poor, has inaugurated another philanthropical project which will, no doubt, prove of inestimable value during the warm season. On June 1st he opened a depot at the foot of East Third Street, for the sale of pure milk and sterilized milk at cost price. The best quality of milk is offered for four cents a quart, and sterilized milk for six cents a quart. The latter is dispensed in bottles, for the return of which a small deposit is demanded. Cold milk is also supplied at one cent a glass. The present capacity of the depot is 500 quarts daily of sterilized milk, and 1,600 quarts of ordinary milk, but the supply can be increased, if necessary. All the milk is brought from Orange County, and the cows furnishing it have been carefully inspected by a veterinary detailed by the Health Department.

SALE OF ST. LUKE'S HOSPITAL. — It is announced that the Trustees of St. Luke's Hospital have succeeded in effecting a sale of the hospital property at Fifth Avenue and 54th Street for $2,450,000, which is within a few thousand dollars of the sum originally asked by them. Possession of the property, however, will not be given until the new buildings at 113th Street are ready for occupancy, so that there may be no interruption of the hospital's work.

MORTALITY. — During the week ending June 3d, there was a decrease of 113 in the number of deaths reported in the city, as compared with the week previous. The total deaths were 812, which is only nine above the average for the corresponding weeks of the past five years. The large decrease in mortality would indicate a very decided improvement in the health of the city. Phthisis showed a decrease of 29 deaths; pneumonia, of 13; cerebro-spinal meningitis, of 9; typhus fever, of 7; scarlet fever, of 5; and malarial fever, of 3. There was, however, a small increase in the number of deaths from diphtheria.

TYPHUS FEVER. — On Saturday, June 3d, there were still 21 cases of typhus fever under treatment at the hospital for contagious diseases on North Brother Island, and one new case was reported. Since November 30th last, there has been in all 466 cases of typhus in the city, and 192 patients have died; a mortality of 41.2 per cent.

Miscellany.

REST IN BED.

DR. GUY HINSDALE, in the course of a lecture on nursing in nervous disease, particularly hysteria, describes the advantages to be derived from ordering absolute rest in bed.[1]

It will seem somewhat strange to those who have been accustomed to go about the house, although in a languid manner. It will be far better also for invalids who recline on sofas, and yet have not cared to relinquish all opportunity of seeing friends and hearing of the outer world. By going to bed in earnest and under no pretext walking about the room, — not even sitting up, and in some cases not even feeding herself, — the patient realizes that a new era has begun in her life history. The result is that she appreciates highly the opportunity to feed herself when the permission is given, perhaps after a fortnight or more of denial. At the end of a month or so she sits up a few minutes each day; the time is lightened; at the end of two months perhaps she is allowed to sit in a chair. Every added privilege is appreciated as never before; liberty never seemed such a boon. It is like the hunger of a convalescent from typhoid fever. The whole aim in life, if you have maintained the case successfully, is now to occupy a sphere that before seemed impossible to attain, and with timely assurance you will have the satisfaction of seeing the patient launched upon the world made over anew. These are matters of actual experience. It may result in the most extraordinary cures of what had been given up as hopeless invalids, and it is in these cases that so-called miracles are wrought.

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THE STING OF THE SCORPION.

SANCHEZ describes the sting of the scorpion as found in Mexico.[2] The sting produces a feeling like that of a needle running through the skin. Immediately numbness follows, extending rapidly to the head, limbs, and sometimes invading the whole body; itching in the nose and sneezing; difficulty of swallowing; trismus; numbness of tongue; difficulty in speaking; dyspnœa; accelerated breathing; spasm of glottis; cough; ptyalism; the saliva has sometimes a bad odor; meteorism; vomiting rarely; bloody stools; scanty urine. Some patients feel as if their eyes and face were swollen, and suffer from sleeplessness and photophobia. To some patients every object appears as though veiled. Intelligence remains unimpaired. At the locality of the sting only a little speck or papule is noticeable. The patients complain of feeling cold. These symptoms generally last two hours, but sometimes as long as eight days.

The lesion is often fatal to children, especially if they be small. Some persons seem never to be affected by the sting of a scorpion. The species of scorpion has a great influence on its effect. Those of the hot lands are infinitely more dangerous. No specific is known for the bite. Scarification and immediate sucking seem rational, and ligature when the wound is on a limb. Jaborandi is recommended, as well as diaphoretics, hot baths, hot drinks, alcoholics.

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[1] International Medical Magazine, May.

[2] Universal Medical Journal.

The town of Durango is highly infested by scorpions, but only on one side, as the town is divided by a river. For many years the city authorities have paid six cents for every dozen of scorpions delivered to them. Boys catch and sell them. They use long sticks with a burning coal at the end. The heat and smoke make the scorpions leave their nests; then they dexterously catch them and pinch off the stings, and collect them in bottles. Thousands of thousands are killed every year. Some people are said to eat these scorpions, when deprived of their venom. The scorpion of Durango is of a small kind, yellow, and very poisonous.

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CHARLES CARROLL TOWER, M.D.

Resolutions Passed by the Norfolk South District Medical Society.

Quincy, June 1, 1893.

We, the Fellows of the Norfolk South District Medical Society, have heard with the deepest sorrow of the sudden demise of our beloved brother and co-worker, Dr. Charles Carroll Tower, who died at his residence at South Weymouth, May [illegible], 1893.

Dr. Tower bas ever been a zealous and devoted member of this Society. Formerly one of its Councillors, for the past two years he was its President.

The bent of his mind was distinctly progressive; and we could always be sure of finding him in touch with the soundest and most advanced thinkers of the profession. At the same time his opinions and his practice were regulated by the rich experience of years of study and observation.

We shall miss his cordial greeting, his words of wisdom and sound judgment; but the memory of a life conscientiously devoted to the study and practice of his chosen profession should be an incentive to us all.

The community in which he so long and faithfully labored mourns to-day the loss of a sympathetic friend, a sound adviser and a skilled physician.

To the family of the deceased we humbly offer our heartfelt sympathy in this hour of their deep affliction.

Resolved, That this memorial be entered upon the records of the Society; that a copy of the same be forwarded to the family of our deceased brother; and that a copy be furnished to the *Weymouth Gazette*, the *Sun* of South Weymouth, and the *Boston Medical and Surgical Journal*, for publication.

J. Winthrop Spooner, *President*.
John T. Welch, *Secretary*.

METEOROLOGICAL RECORD,

For the week ending May 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		[illegible]
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...21	29.72	71	85	57	[illegible]	[illegible]	[illegible]	W.	S.W.	11	11	C.	C.	
M...[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	44	W.	W.	[illegible]	[illegible]	C.	C.	
T..23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	S.	14	[illegible]	C.	F.	
W..[illegible]	29.93	65	72	[illegible]	[illegible]	[illegible]	[illegible]	W.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T..25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	S.W.	4	17	C.	C.	
F..26	[illegible]	[illegible]	[illegible]	[illegible]	49	79	[illegible]	N.	S.	16	[illegible]	[illegible]	[illegible]	
S..27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

* [illegible]

RECORD OF MORTALITY

For the Week ending Saturday, May 27, 1893.

Cities.	[illegible]	[illegible]	[illegible]	Percentage of deaths from				
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New York . .	1,827,396	[illegible]	[illegible]	18.81	18.04	[illegible]	[illegible]	[illegible]
Chicago . . .	1,[illegible]	—	—	—	—	—	—	—
Philadelphia .	1,[illegible]	—	—	—	—	—	—	—
Brooklyn . .	[illegible]	[illegible]	[illegible]	14.04	18.63	[illegible]	[illegible]	[illegible]
St. Louis . . .	[illegible]	—	—	—				
Boston . . .	[illegible]	[illegible]	[illegible]	14.40	19.20	[illegible]	[illegible]	[illegible]
Baltimore . .	461,[illegible]	—	—					—
Cincinnati . .	[illegible]	[illegible]	41	13.16	19.74	[illegible]	[illegible]	
Cleveland . .	[illegible]	101	28	14 85	[illegible]	—	[illegible]	[illegible]
Pittsburg . .	[illegible]			—	—	—		—
Milwaukee . .	[illegible]	80	[illegible]	16.25	11.25	[illegible]	[illegible]	[illegible]
Washington .	230,360	104	[illegible]	5.76	[illegible]	[illegible]		
Nashville . .	87,754	[illegible]	7	11.11	[illegible]	[illegible]	—	—
Charleston . .	56,048	—	—	—	—	—	—	—
Portland . . .	40,000	14	2		14 28	—		
Worcester . .	92,313	[illegible]	7	[illegible]	[illegible]		[illegible]	3 85
Lowell . . .	[illegible]	[illegible]	14	5.56	25.02	[illegible]	—	—
Fall River . .	82,128	[illegible]	13	3.33	10.00	—	—	—
Cambridge . .	[illegible]	27	[illegible]	11.11	11.11	—	—	[illegible]
Lynn	60,809	22	5	13.65	18.20	—	[illegible]	—
Springfield . .	[illegible]	14	2	7.14	7.14	—	—	7.14
Lawrence . .	[illegible]	—	—	—	—	—	—	—
New Bedford .	44,[illegible]	[illegible]	8	13.05	8.70	—	—	—
Holyoke . . .	[illegible]	10	4	20.00	10.00	—	[illegible]	—
Brockton . .	32,783	[illegible]	3	[illegible]	[illegible]	—	—	—
Salem	31,[illegible]	13	6	7.69	—	—	[illegible]	—
Haverhill . .	30,065	9	0	—	22.22	—	—	—
Chelsea . . .	[illegible]	[illegible]	0	—	—	—	—	—
Malden . . .	[illegible]	10	2	—	10.00	—	—	—
Newton . . .	26,498	—	—	—	—	—	—	—
Taunton . . .	26,464	8	2	—	—	—	—	—
Gloucester . .	26,008	[illegible]	2	11.11		—	11.11	—
Fitchburg . .	[illegible]	8	3	12.50	—	—		
Waltham . .	20,942	2	0	—	50.00	—	—	—
Quincy . . .	[illegible]	6	1	—	[illegible]	—	—	—
Pittsfield . .	18,294	1	0	—	—	—	—	—
Northampton .	[illegible]	6	1	—	50.00	—	—	—
Everett . . .	14,745	[illegible]	1	16 66	—	—		[illegible]
Newburyport .	14,031	[illegible]	1	—				
Amesbury . .	[illegible]	2	1		50.00			

Deaths reported [illegible],264; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers), 338, acute lung diseases [illegible], consumption 218, diphtheria and croup 95, diarrhœal diseases 48, scarlet fever 46, cerebro-spinal meningitis 45, typhoid fever 29, measles 2[illegible], whooping-cough 22, typhus fever 11, erysipelas 10, malarial fever 7, small-pox 2.

From cerebro-spinal meningitis New York 29, Brooklyn 5, Washington and Worcester [illegible] each, Boston 2, Cleveland, Somerville and Holyoke 1 each. From typhoid fever New York and Cleveland 7 each, Brooklyn and Boston 4 each, Cincinnati, Washington and New Bedford 2 each, Fall River and [illegible] 1 each. From measles New York 9, Brooklyn 7, Milwaukee [illegible], Cambridge, Somerville, New Bedford, Fitchburg, Medford and Brookline 1 each. From whooping cough New York 13, Brooklyn 4, Cincinnati 3, Nashville and Brockton 1 each. From erysipelas New York 5, Brooklyn 3, Boston and Milwaukee 1 each. From typhus fever New York 11. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending May 20th, the death-rate was 18.9. Deaths reported 3,751; acute diseases of the respiratory organs (London) 204, measles 150, whooping-cough 91, diphtheria 75, diarrhœa 70, scarlet fever 49, fever 33, small-pox (Oldham 6, London 4, Manchester, Halifax and Bradford 1 each) 13.

The death-rates ranged from 13.4 in Portsmouth to 27.1 in Liverpool; Birmingham 19.9, Bolton 24.0, Bradford 17.9, Croydon 13.9, Gateshead 18.3, Huddersfield 22 4, Leeds 21.0, Leicester 17.7, London 18.2, Newcastle-on-Tyne 19.6, Nottingham 14.7, Salford 22.0, Sheffield 21.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY [illegible], 1893, TO JUNE 2, 1893.

Major John Brooke, surgeon, is relieved from duty at Fort Leavenworth, Kansas, and will repair to Philadelphia, Pa., and enter upon temporary duty as attending surgeon and examiner of recruits in that city.

Leave of absence for one month is granted **Lieut.-Col. William D. Wolverton**, deputy surgeon-general, U. S. A.

Leave of absence for fifteen days, to take effect upon his relief from duty at Fort Bowie, Arizona Territory, is granted CAPTAIN RICHARD W. JOHNSON, assistant surgeon.

FIRST-LIEUT. WILLIAM F. LEWIS, assistant surgeon (recently appointed), will proceed from Kinston, N. C., and report in person to the commanding officer Fort Assinniboine, Montana, for duty at that station.

Leave of absence for four months, on surgeon's certificate of disability, is granted CAPTAIN CURTIS E. PRICE, assistant surgeon.

CAPTAIN WILLIAM C. SHANNON, assistant surgeon, now in this city, is relieved from further duty at Fort Apache, Arizona Territory, and will report in person to the surgeon-general for duty in his office, and CAPTAIN HARRY O. PERLEY, assistant surgeon, who, at his own request, is relieved from duty in that office, and will report in person to the commanding officer, Plattsburgh Barracks, New York, for duty at that station.

By direction of the President, CAPTAIN WILLIAM C. SHANNON, assistant surgeon, is relieved from further duty under the Intercontinental Railway Commission, appointed under the provisions of the act of Congress, approved July 14, 1890.

Leave of absence for twenty-five days, to take effect on or about June 5, 1893, is hereby granted MAJOR D. G. CALDWELL, surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING JUNE 3, 1893.

J. M. FLINT, medical inspector, ordered to the U. S. S. "Baltimore."

G. W. COOKE, medical inspector, detached from U. S. S. "Baltimore" and three months' leave.

C. G. HERNDON, surgeon, to duty in the Bureau Medicine and Surgery.

W. A. MCCLURG, surgeon, from duty in Bureau Medicine and Surgery and wait orders.

G. T. SMITH, passed assistant surgeon, detached from New York Hospital and to U. S. S. "Baltimore."

S. S. WHITE, passed assistant surgeon, detached from U. S. S. "Baltimore" and two months' leave.

F. H. BRYANT, passed assistant surgeon, detached from Philadelphia Hospital and to U. S. S. "Baltimore."

M. R. PIGOTT, assistant surgeon, detached from U. S. S. "Baltimore" and to U. S. S. "Kearsarge."

A. R. ALFRED, assistant surgeon, detached from U. S. S. "Kearsarge" and one month's leave.

B. R. WARD, assistant surgeon, from U. S. S. "Richmond" and to U. S. S. "Monongahela."

OLIVER DIEHL, passed assistant surgeon, ordered to Naval Hospital, Philadelphia, Pa.

E. S. BOGERT, passed assistant surgeon, from Laboratory, New York, and to U. S. S. "Philadelphia."

ROBERT BOYD, assistant surgeon, detached from U. S. S. "Philadelphia" and to U. S. S. "Richmond."

F. L. DUBOIS, medical director, from the "Philadelphia" and to the "Chicago."

T. C. CRAIG, passed assistant surgeon, from the "Boston" return home and three months' leave.

E. S. BOGERT, passed assistant surgeon, from the "Philadelphia" and to the "Boston."

E. R. STILT, passed assistant surgeon, from Norfolk Hospital and to the "Chicago."

J. F. URIE, passed assistant surgeon, from the "Chicago" and wait orders

M. S. GUEST, assistant surgeon, from the "Franklin" and to the "Philadelphia."

F. W. F. WIEBER, passed assistant surgeon, ordered to Naval Hospital, Norfolk, Va.

L. W. SPRATLING, assistant surgeon, from the "St. Louis" and to New York Hospital.

THE PAN-AMERICAN MEDICAL CONGRESS.

SECTION ON GENERAL SURGERY.

The Section on General Surgery extends a cordial invitation to all medical gentlemen engaged in the practice of surgery; as teachers or practitioners in any of its branches, to participate in all its meetings and contribute papers for the general information.

Such papers should conform to the requirements, as set forth in the general regulations of the Congress.

In view of the wide extent of the constituency of the Congress and the varied human environment necessarily under observation, it is suggested that the topic of endemic or surgical diseases prevalent in each country might fittingly receive a large share of attention from the members of this Section; but carefully-written papers upon *any* topic connected with surgical bacteriology, surgical pathology, or operative surgery of the regions, will be welcomed by the Section.

JOHN B. HAMILTON, *Executive President.*

SOCIETY NOTICES.

NEW HAMPSHIRE MEDICAL SOCIETY. — The one hundred and second anniversary meeting will be held at Concord, Monday and Tuesday, June 19 and 20, 1893.

Monday. — Report on Practical Medicine: "Sequelæ of La Grippe," by Dr. W. H. Aldrich, Marlboro'. Report on Gynecology, by Dr. M. W. Russell, Concord. Report on Surgery: "Appendicitis," by Dr. G. H. Sanborn, Henniker. "Appendicitis: a Year's Experience," by Dr. Ira J. Prouty, Keene. "Exsection of the Astragalas," by Dr. Robert Burns, Plymouth. "Some of the Uses of Cocaine," by Dr. Henry Dodge, Penacook. "On Use of Forceps," by Dr. Bradford Allen, Nashua.

There will be a meeting of the Council on Monday evening, June 19, 1893, at 7 P. M.

Tuesday. — "Pulmonary Tuberculosis with Especial Reference to its Prophylaxis and Hygienic Treatment," by Dr. E. O. Otis, Boston. "Philanthropic Medicine," by Dr. E. F. McQueston, Nashua.

The Anniversary Dinner will be served in the New Eagle Hotel at 1 P. M.

GRANVILLE P. CONN, M.D., *Secretary*, Concord, N. H.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS. — The seventh annual meeting will be held at Harrogate, Tenn., Tuesday and Wednesday, June 20 and 21, 1893.

EDWARD R. PALMER, M.D., *President*, Louisville.
JOHN A. FORDYCE, M.D., *Secretary*, New York.

APPOINTMENTS.

HARVARD MEDICAL SCHOOL. — In addition to several re-appointments, the following appointments have been made:

DAVID WILLIAM CHEEVER, M.D., professor of surgery, emeritus, in consideration of his high character, professional eminence in the community, and invaluable services to the University as demonstrator of anatomy 1861–68, assistant professor of anatomy 1866–68, adjunct professor of clinical surgery 1868–75, professor of clinical surgery 1875–82, and professor of surgery 1882–93.

EDWARD H. BRADFORD, A.M., M.D., assistant professor of orthopedics for five years.

FRANKLIN DEXTER, M.D., demonstrator of anatomy for five years.

Instructors for one year from September 1st: ARTHUR T. CABOT, M.D., genito-urinary and clinical surgery; SAMUEL J. MIXTER, M.D., surgery; WILLIAM M. CONANT, M.D., anatomy; CHARLES F. WITHINGTON, M D., clinical medicine; ARTHUR P. CHADBOURNE, M.D., demonstrator of experimental therapeutics and pharmacology; JOHN C. MUNRO, M.D., assistant demonstrator of anatomy.

To give special clinical instruction: GEORGE H. WASHBURN, M.D., WALTER L. BURRAGE, M.D., gynecology; THOMAS A. DEBLOIS, M.D., JOHN W. FARLOW, M.D., ALGERNON COOLIDGE, JR., M.D., laryngology.

MASSACHUSETTS GENERAL HOSPITAL. — A. K. STONE, M.D., has been appointed physician to out-patients, and J. P. CLARK, M.D., physician for diseases of the throat.

RECENT DEATH.

CHARLES CARROLL TOWER, M.D., M.M.S.S., died May 29th, aged fifty-nine years. He graduated from Harvard College in 1856, and from the Medical School in 1859. After serving as house-officer in the Massachusetts General Hospital, he went to the war, and was appointed to the Emory Hospital, Washington. He has since practised in South Weymouth, and held several positions, among them that of medical examiner for the district.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. V. For the year 1892.

In Memory of Prof. T. G. Richardson, M.D. By Stanford E. Chaillé, M.D., and B. M. Palmer, M.D. New Orleans. 1893.

Cholera; Its Protean Aspects and Its Management. By G. Archie Stockwell, F.Z.S. In two volumes. Detroit: George S. Davis. 1893.

Brain Surgery. By M. Allen Starr, M.D., Ph.D., Professor of Diseases of the Mind and Nervous System, College of Physicians and Surgeons. New York: William Wood & Co. 1893.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

IX.

SPECIAL FRACTURES.

The Humerus has a great variety of fractures. The anatomical neck, so-called, which is the part near where the capsule is attached and above the tuberosities, and which really is hardly a neck at all, as you see, is occasionally separated. This fracture is usually a fracture of advanced age, and corresponds very much to the fracture of the neck of the thigh-bone in old people. Like that, also, it is occasionally impacted, so that the shaft is driven up into the head, but more frequently it is a complete fracture.

Going down the bone a little way, we find the line of the epiphysis, which includes the tuberosities, that is to say, it is below the tuberosities. The tuberosities and the anatomical neck and the head are above the epiphysis. The epiphysis unites very late. In this skeleton the line of the epiphysis is very sharp still; and it is quite natural that frequently that should give way in the fracture, so-called, of the neck of the humerus. Separation of the epiphysis is practically about the same thing as a fracture of the surgical neck, that is to say, it takes place within a fraction of an inch of the same locality; and whether or not the epiphysis will give way or, the surgical neck will give way, depends on the age of the patient. In young subjects, the epiphysis separates; in older subjects, the neck breaks. Then these two are combined usually under the ordinary name of fracture of the surgical neck. These two things are the great distinctions then, fracture of the anatomical neck, fracture of the surgical neck. By fracture of the anatomical neck, we mean the line of insertion of the capsule, and above the tuberosities; by fracture of the surgical neck, we mean the neck of the bone where the shaft comes up to join the head, and below the tuberosities; and if it is a very young subject, it will probably be a separation of the epiphysis. We find also this marked distinction, which I think it is well always to bear in mind: and that is the influence on the location of the injury of the age of the patient, — a young person, fracture of the surgical neck; an old person, fracture of the anatomical neck.

Going down the shaft of the bone, you may have fracture anywhere about the shaft of the bone. When we come towards the lower end, we find the bone growing very thin, broadening out into the two condyles, and there at the points opposite the olecranon and coronoid processes being extremely thin, and in some races, and in occasional specimens in our own, being perforated there. That weakens the bone a good deal. Fracture, then, across the shaft, just above the condyles, is quite common. That differs from ordinary fracture of the shaft, because it is close down to the line of the articulation. The bone gives way through this thin part, and breaks, usually obliquely; and it is called transverse fracture of the shaft of the humerus above the condyles. It is this fracture which imitates, and is so often mistaken for, dislocation of the forearm backwards.

When we come to the very end of the bone, we have condyles and epicondyles; epicondyles being little minute condyles themselves. The inner is that part of the internal condyle which is external to the joint; the external epicondyle is the ridge which runs down with the insertions of the extensor muscles, and is outside the articulation of the bone with the radius.

The internal one is commonly chipped off in the falls of childhood. They separate as an epiphysis frequently. They do not go into the joint, nothing to do with the joint. They are not very important injuries, and the epicondyles themselves speedily unite again, and ought not to give any deformity in the way of stiffness of the elbow-joint. But when we come to the true condyles, which include the articulating surfaces, a fracture of the inner condyle necessarily comes down through the surface that articulates with the ulna; and when it is broken off and displaced and drawn aside by the muscles, it necessarily carries the head of the ulna with it, and makes a very marked deformity. That is true fracture of the internal condyle. When it breaks and is drawn aside, the olecranon is dislocated with it, and the joint thrown out of place. When union takes place, it is likely to take place with a certain amount of roughness at the seat of the fracture. The perfect smoothness and polish of the joint may be restored; but a stiff elbow is more or less probable, according to the age of the patient. It is not necessary to have it, as a rule, until the age of puberty; but after the age of puberty, it is almost always present to some degree. So, also, fracture of the external condyle, which goes through the part of the humerus which articulates with the radius, — necessarily carries the head of the radius with it, makes a great deformity, and leads to the same disastrous results.

We have ordinary fractures of the shaft. They do not differ from similar fractures elsewhere.

At the upper extremity of the shaft, we have the anatomical neck breaking in old people, the surgical neck giving way or being broken in younger people. At the lower end of the bone we have, where the bone thins out, transverse fracture extremely common; simple dislocation of the epicondyles breaking off in childhood and having no connection with the joint. The true condyles are broken also, being liable to dislocate the elbow-joint completely; and if restored perfectly to place, often give rise to stiffness.

Only one other fracture, which is very rare and of little consequence. Once in a while the external tuberosity gets broken off. It must be a very peculiar force to do it. We recognize it by the fact that it is displaced. We can see it, and feel it in the living body, where the biceps tendon goes through the groove. We can get crepitus. We recognize the fact that the whole shaft and the head and neck rotate together; and there is no breaking off of the true shaft. It is rare, and not very serious; and it merely wants a bandage and rest, to get well, without any serious consequences.

Fracture of the Anatomical Neck. — Fracture of the anatomical neck, I think, rarely occurs before the age of sixty to sixty-five or seventy. It has seemed to me it is more common in fat and feeble old women than it is in males. It follows an ordinary fall upon the shoulder. The bulk of the hospital cases we see are in old persons who fall down stairs. In young subjects receiving a fall directly on the point of the shoulder, the collar-bone gives way; but if the force happens to be received a little below on the tuberosity, in an old person, the anatomical neck gives way; just as the anatomical neck of the femur gives way in the old person. Impaction may exist. It is rare. If it exists, the injury is very hard to detect.

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[1] These [illegible] lectures printed from [illegible] [illegible]. They were delivered to the third [illegible] part of the regular course.

Beyond persistent lameness, disability in making the motions of the joint and swelling, it is hard to say what diagnostic point there is of an impacted fracture of the anatomical neck. The distance to which the shaft can be driven must be very small. The depth of the bone is very small. It is very unlike the femur, where you can have impaction in a long neck; and consequently the resulting deformity in the way of shortening must be excessively small. With a swollen shoulder it is very difficult to measure or appreciate; so that you may have possibly to content yourself with the idea that this is an old person with persistent lameness, and probably they have a crack of some portion of the neck, or chipping of some portion of the glenoid cavity, and it is hard to tell which.

Fortunately the treatment is the same, — rest with the arm in a sling; and that is all, excepting perhaps the use finally of soothing lotions and light massage, electricity, etc. Be sure to give it four to six weeks of absolute rest, until the patient begins to feel that he voluntarily would like to move it. If it is an impaction, it is sure to get well. If you move it about too much, you render it liable to be made worse than it was before.

The ordinary injury of the anatomical neck is complete fracture with displacement. This gives a certain amount of shortening, not so much shortening and deformity as with a break of the surgical neck. In the latter case one fragment gets drawn into the axilla, and the other in the other direction, and the shortening is considerable and the deformity marked. In those cases you see what I call the second shoulder. It is rather imitated in the gymnasium by the marked deltoid muscles. You see a shoulder, then a groove, and another muscular development, — that is where the break is. That is another shoulder, as I call it. You find a hinge there. The head remains in place and keeps up the shoulder; but below that the arm drops off, and you move it and find that is the seat of the hinge; and it is a fracture of the surgical neck. This is unlike the deformity, which is very slight, in fracture of the anatomical neck; in the latter you see puffing and bruising, scarcely any deformity. Remember you have here got to make the diagnosis by eliciting crepitus. That can be done by taking the arm and forcing it up, moderately back, and then giving a little rotation. In that way you crowd the fragments together. In fracture of the surgical neck that would not do. You then have frequently to draw down. Of course, you eliminate everything else by an exhaustive examination of the parts beneath the hand, — the collar-bone, the acromion process, coracoid, spine of the scapula. That, of course, can be readily done. You find that the arm is totally disabled. The tuberosities, however, rotate; and you say to yourself any fracture must be above that line, of course. It cannot be the surgical neck. If there is a fracture, it must be the anatomical neck. Push upwards a little, and you almost inevitably get the crepitus.

The treatment is very tedious — six to eight weeks sometimes, sometimes more; eight weeks almost always. It is not wise to put in much of an axillary pad. If you do, you crowd the fragments away from each other. You want to crowd the arm up and treat it much as a fracture of the coracoid process. The elbow is to be raised; fragments forced together. No extension is needed. The axillary pad tends rather to displace the fragments, and had better not be used.

Unfortunately these subjects are so old, that if you have the best possible result after eight weeks, you have got to contend with a stiff shoulder. Perhaps in some subjects there may be developed rheumatic arthritis. The muscles have got wasted, and it takes a good deal of time to recover the use of the shoulder, especially to make any motion outwards or to get the hand to the top of the head.

Now comes the time, after you are sure that union has taken place, when passive motion, massage, if not too rough, the use of electricity, which I think is very valuable, the use of any stimulating and anodyne liniment, which is often of great comfort to the patient, will greatly restore the usefulness of the arm. Fortunately the use of the hand and lower arm do not depend so very much upon the shoulder; and the patient can have the use of these parts, which are extremely useful, a long while before he is able to get the perfect use of the deltoid and the scapular muscles.

Another result may occur; there is possibility of non-union, just as there is so frequently a possibility of non-union in fracture of the neck of the femur. As a rule, however, fracture of the anatomical neck of the humerus unites by bone.

In the separation of the epiphysis, or fracture of the surgical neck, the fragments are drawn widely apart, ride by each other. The arm is decidedly shortened. The resulting deformity gives a crease below the proper line of the shoulder, which seems like a second joint. By taking the arm and finding the tuberosities and rotating, you find the upper fragment absolutely still, while you move the shaft about under the hand, and that there is underneath a complete fracture preventing any motion being transmitted to the head and to the tuberosities. To elicit crepitus, the fragments having ridden by each other, seize above and draw down and rotate, and, as a rule, you get crepitus.

This unites more quickly than fracture of the anatomical neck, — four to six weeks. It almost always unites.

The treatment has some additional points besides that of the anatomical neck. For instance, a moderately large axillary pad is useful, for it presses upon the upper fragment, which is usually drawn obstinately inward, and forces it out into place. Moreover, we do not wish to confine the arm in such a way as to force up the elbow, because the fragments tend to override and shorten. You want to extend. Usually the weight of the forearm is enough to make extension; consequently the sling should be fastened to the wrist, or the outer third of the forearm, and not around under the elbow, so that the arm may drag. There are cases where we are obliged to make real extension to conquer this shortening of the fragments. In that case, if we wish to do it thoroughly, we have to put the patient in bed. Extension can be put on the humerus just as well as on the femur, if care is used.

Some of these cases override each other so obstinately, that they cannot be apposed with the arm down at the side. In that case you put a curved splint shaped like a ship's knee in the axilla, keep the arm constantly out in that position, and bring the two fragments into line in that way. That relaxes the fibres of the deltoid muscle, and forces the lower fragment up into place, and prevents the pulling on the lower fragment by the deltoid. That sometimes is very comfortable and very effectual. The majority of the cases can be treated with the arm at the side; and the forearm in a sling, but not the elbow in a sling. In these cases we use a small pad; then a long inside splint can be carefully fixed at the upper end so as not to injure the axilla. Then we need an outside splint from the shoulder down to the elbow. An outside splint, when simply a piece of wood, put on in this way does little good, because it does not control the action of the deltoid muscle, which is pulling the fragments all the time; and we have to have a cap splint of pasteboard, or gutta-percha, or leather, moulded on to the arm, and grasping the deltoid precisely as the hand would do it, and then extending down to the external condyle. That is to be very thoroughly and carefully padded to compress the muscles. Then we have the inside splint and then the forearm at right angles, with the elbow drooping. Moreover, having done that, it is essential to put on a body bandage to keep the arm snug to the side, and to prevent the patient from moving the arm.

About four to six weeks are required. You have to take off the apparatus and look at the fracture and readjust within a week; and in a bad case, if there is any doubt about the circulation, you probably will have to adjust the bandage twice within the first few days, not expecting to get the final adjustment until after the swelling has gone down, which is in five or six days. You had better leave it alone a fortnight without looking at it at all after the parts get in a normal condition.

The same treatment afterwards, — passive motion, electricity, etc. It takes a good while, in the strong laboring person, for the arm to recover its full vigor and strength.

Of course, you bear in mind that fracture at the surgical neck does not involve the joint and that fracture of the anatomical neck does; consequently fracture of the surgical neck ought not to leave any stiffness in the joint itself, while fracture of the anatomical neck is rather liable to.

Fracture of the Shaft of the Humerus. — Fracture of the shaft of the humerus may occur at any point, but preferably about the middle. The fear is of non-union. Union with shortening is not a serious matter, inasmuch as shortening of the upper arm does not impair its utility especially.

The fragments are drawn in various directions, according to the site of the fracture. It is obvious that the flexors, the brachialis anticus, especially, and the biceps, will pull the fragments by each other. The deltoid, if the fracture is at all high up, will have a very important influence in tilting the fracture. The tendency, then, is to overriding and shortening, the fragments being sometimes pulled in one direction, sometimes in another.

The diagnosis ought to be easy. There is shortening and deformity; and by drawing the arm down and rotating the elbow, we get crepitus. Further examination easily reveals where it is. The arm is not a very bulky member, and it is much easier to examine the humerus than it is the femur.

We try to control all these muscles: draw the bone down in place; keep on extension and compress the muscles. The internal angular splint is a good splint. It sets the arm and forearm at right angles, relaxes the flexor muscles, and compresses them on the humerus. The shoulder-cap splint, and the internal angular splint with the elbow bent, complete the number of splints; unless a narrow, straight splint be required on the axillary side. No pad is required in the axilla. The extension is kept up a little by suspending the arm from the wrist, and allowing the elbow to drop.

In case of obstinate shortening and overlapping, it may be desirable to put the patient to bed, and draw out the arm with pulley and weight to keep up extension; but those cases are rather rare. It is especially desirable that the parts should be kept immovable; and after the splints are on, you take them off the first two or three days, and look after the swelling until they are finally adjusted, and then they had better not be displaced for a fortnight; for non-union is the bugbear of this fracture. Once failing to unite, it seems to be difficult to provoke union by ordinary and simple measures. The best means are to secure perfect immobility for a long while; this failing, we may cut down upon, and wire the ends of the bone. This is a simpler operation than for the femur, and not accompanied by a large mortality. The parts to be looked out for, are the artery which winds around the bone, and the nerve which comes out by the insertion of the supinator longus and afterwards goes to supply the radial side. One would think that that nerve could never be cut, but it has been cut by carelessness in a number of cases, and this is followed by radial paralysis, unless union of the nerve can be secured. The risk, then, is of injury to the musculo-spiral nerve or the supinator profunda artery, as it winds around the bone, and that is about all. The bone is near the surface, easily secured by wire. Union is generally obtained in that way.

Some curious cases are on record where not only has the humerus failed to unite, not only have the ends rounded off and become atrophied, but atrophy of a large portion of the shaft has taken place. We have such a sample in the Museum, where the greater part of the shaft of the humerus has been absorbed, after the injury.

Spontaneous fracture, also, is especially prone to occur in the humerus. Spontaneous fracture is the result of thinning, porosity and atrophy of the bone; and it occurs sometimes almost without provocation. It is thought, usually, that the patient has lifted some little weight, or carried something heavy in the hand. Suddenly, the patient feels a sense of giving way, drooping and helplessness of the arm, and fracture is found to exist — spontaneous fracture. Non-union or atrophy are the chief obstacles in treating fractures of the humerus. Not that I mean to say that a very large majority of these cases do not do perfectly well; but it is always well to bear in mind the fact that certain contingencies may result; that we cannot safely assure the patient that a fracture of the humerus will result in a good arm. We must bear in mind that non-union may occur in any given case. We cannot say in whom, or why.

It is important to keep the bone still certainly four to six weeks; and, afterwards, flexion of the elbow should be resumed moderately, being sure that the fracture is firm, because the motion of all these powerful muscles attached to the condyles have a strong effect upon the fragment if it is not solid.

Fracture near the Elbow.— Once in a while it happens, especially in young subjects, that what is called a T fracture of the lower end of the humerus occurs, generally, about two inches above the joint; breaks directly across, and splits down through the shaft as well. The lower fragment is drawn back behind the upper fragment by the action of the long extensor muscles on the back of the arm; and the condyles are split apart and the elbow widened. The appearance of this fracture is very characteristic. It imitates a dislocation of the forearm backwards; and the joint is so much widened, that it looks at first glance like a case of enlarged and diseased bones about the elbow-joint.

The best way is to etherize the patient and to examine the two elbows, comparing the sound with the injured elbow, and the different points of bone upon the two arms will appear distinct, and also difference of position will be easily made out. In the normal arm, the two condyles of the humerus and olecranon always bear a definite relation to each other. On careful examination, we shall find that the olecranon is always in place; that the whole thing has been carried backwards, If it is a dislocation instead of a fracture, the olecranon projects out far behind its normal position with reference to the other two bones. In the T fracture, we can recognize at once the fact, that in the injured arm the space across the condyles is immensely widened over what it is in the sound arm. Given a deformity which we prove is not a dislocation; and given the appearance of great widening of the joint with the other evidences of fracture, we are almost sure we have a T fracture, broken across just above the hollow in the olecranon, where the coronoid process and the olecranon almost meet; and split down through that hollow into the joint.

This, and its parallel fracture, the simple oblique and transverse fracture, are both of them hard cases to treat. The oblique fracture, which is broken across, gives the same appearance of dislocation, which we prove not to be dislocation by examining the arms in the bent position: proving that the two condyles and olecranon are in normal position, and the olecranon not drawn back out of place.

In order to reduce either of these fractures, it is necessary to seize the arm and use the same means as in dislocation. The upper arm is seized, and the forearm, below, and a fulcrum applied at the inside of the elbow-joint, and the forearm pulled firmly forward into place. If a dislocation, it stays in place; if a fracture, it immediately drops out of place. To set such a fracture, to get it into place, requires us to go through precisely the same manipulation as in reducing a dislocation of the elbow; hence a very good rule, that in all these suspected injuries about the elbow-joint, where it may be a fracture or a dislocation, we should bend the arm, make extension and counter-extension, and pull the joint down into place precisely as if it were a simple dislocation. It is to be retained by an internal angular splint, which is the universal application to all of these injuries, with the single exception of fracture of the olecranon process. The arm at a slightly obtuse angle on an internal angular splint, first going through the motions of reducing a dislocation, and being sure that you apply force firmly, above, in front of the joint, to crowd the upper fragment back into place. In addition to this, it is of vast importance that the manœuvre should be made to press the joint fragment back into place, for most of the deformities and troubles that arise afterwards, in subsequent flexion of the arm, arise from the fact that the fragment has never been reduced, and catches against the forearm, when we make flexion. After a while, by manipulation, we may restore flexion and extension to a fair degree; but find we can never carry it beyond a moderate angle without its bringing up. This condition is without remedy, unless a severe operation is done to excise a portion of the bone, and restore the motion in that way. It is always a doubtful question whether we are going to get a better arm than before, if we subject the patient to an operation so near a partially movable joint.

Go through the motions to reduce dislocation; decide whether it is, or is not, a dislocation, partly by the fact whether it stays in place when reduced; also by the fact of the normal position or not of the olecranon and the two points of the condyles. Judge whether there is any injury in the joint itself by seeing whether the width between the two condyles is the same in the diseased and the sound arm; if not the same, you may be pretty sure the crack has gone into the joint, and one or the other condyle has been separated from its normal position.

The trouble about the elbow-joint in treating it is not that it does not unite, — non-union is almost unheard of. These bones join readily; but the trouble is from subsequent stiffness. If such a disaster does occur, it is best that it should occur in the rectangular position, or a slightly obtuse one. If it is in the extended position, the patient has a most awkward arm of which he can make but little use in any way; hence the importance of putting on the internal angular splint and setting these injuries nearly at right angles, to give the best position, provided subsequent anchylosis takes place in spite of all our efforts to secure mobility.

If we consider that the oblique fracture across the humerus is drawn into place and held firmly, we ought to allow four weeks before we can do much in moving this elbow without displacing the fragments. This is unfortunate, because it allows the elbow-joint to stiffen a good deal. No such length of time should be allowed in fracture of the condyles.

It is particularly important in treating these fractures to look at them frequently the first few days; take off the splints to see that this projecting point is pressed well back into place by padding the internal angular splint. After the swelling has subsided, do up the arm and leave it alone a fortnight, or so. Non-union is not to be dreaded, but stiffness is, in all injuries about the elbow-joint.

Separation of the Epicondyles and Condyles. — The most common accident that happens to little children is separation of the epicondyles; and inasmuch as the internal epicondyle is by far the more prominent of the two, this is the one that ordinarily breaks. Why it does not occur universally is probably because being carried next to the body it is not quite so apt to receive blows as the outer one, on which the child falls more frequently. The latter is a small affair; and if broken off, it is drawn down by the muscles, and mobility can be felt. The internal epicondyle is quite large, and gives perceptible widening if broken, and you get mobility.

The point of importance is whether the fracture has extended into the joint. This we can easily determine by the fact that if the fracture has gone into the joint and displacement takes place, it must carry with it the part of the bone with which it was articulated. Therefore, if the fracture has gone through the inner condyle into the joint itself, partial dislocation of the ulna takes place with this displacement of the fragment; and if it has gone into the joint through fracture of the external condyle, partial dislocation of the radius is evident; whereas, if under ether, motion of the joint is good and perfect, the radius can be perfectly rotated, the olecranon moves freely, and seems to be in its normal relation to the condyles, then we may be pretty sure that we have to deal only with an epicondyloid fracture, or separation of the epiphysis.

This is a matter of little consequence, speedily unites, and ought not to make any stiffness of the elbow, because it does not go into the joint.

When we find partial dislocation of the ulna or radius, impaired mobility, and widening of the fragments, we feel pretty sure that the fracture has run into the joint.

The treatment of these is practically the same, but the prognosis is different. Age has more to do with it than anything else. If the patient has passed the period of puberty, and is fifteen or upwards, the chance of resulting anchylosis is very great. If he is still in the plastic period preceding puberty, with the epiphyses partially joined, subsequent anchylosis is not common, and can usually be conquered.

The treatment of all these injuries consists in going through the motions to reduce a dislocation, pushing fragments into place, and putting on the internal angular splint.* For injuries of the epicondyles and condyles in the child an external splint is not required. The internal splint is put on, and the elbow left uncovered so that we can watch the swelling, position of the fragments, etc. The arm must be put in a sling in all these injuries. In the fractures about the elbow-joint we can put on the ordinary sling, leave the joint uncovered, and trust to the internal angular splint.

You must bear in mind that in young subjects accurate diagnosis, as a rule, cannot be arrived at without ether; and inasmuch as ether is harmless, it is much better to give it. The injury then can be satisfactorily examined; and if a fracture exists, it can be satisfactorily set.

In these young subjects swelling comes on with great rapidity; and you must recognize at once that if you take the arm and tie it up at first tightly in the internal angular splint, you interfere with the return circulation of the veins. Subsequent œdema and swelling come on very rapidly; and I am inclined to think, in a fracture of this kind, if you merely put the arm in a sling without splint or pressure, swelling would still take place to a large degree, but much more so if you compress the vessels and force it into a rectangular position. This is the proper thing to do; but we must be careful not to carry it too far. It is best to see these fractures within twelve hours, and within every twenty-four hours, for two or three days; until you are sure no harm is being done by the pressure of the splint and bandage. Œdema will be rapid. Vesications will take place. Ecchymoses, black-and-blue lines from the injured veins and minute vessels injured by the broken bone will soon form upon the arm. The condition of the finger-nails is the best test as to the circulation in the parts above. In the normal finger-nail the circulation of the blood can be better observed than through the skin. We have a transparent medium through which we are looking down upon a delicate papillary structure; and this is of the greatest use in examining the condition of the circulation. No complaint of coldness or numbness should be disregarded.

For the first few days it is not of great consequence whether the fracture is in a tight splint or not. We can be mild in our treatment for a day or two, until the swelling has gone down. The period of swelling and œdema has its natural limit; increases about three days; continues about two or three days, and at the end of a week it has gone. It will not swell again, as a rule. You may then bandage it with safety; and unless you are extremely rough in putting on tight pressure, swelling will not again take place.

Reduce the apparent dislocation of the joint, use the internal angular splint, leave it exposed and cool on the outer surface, put it comfortably in a sling. See it at first every twelve, then every twenty-four hours. Do not tighten the bandage too early. After the œdema is gone keep the bandage firmly on. How long? We cannot afford to allow the elbow-joint to remain immovable, to heal such fractures, nearly so long as in fractures of the shafts of the bones. The fracture which involves the elbow-joint must be moved earlier and oftener than fractures of the shaft. Most authorities think at the end of the first week passive motion should be begun once or twice; and then on the seventh, and again on the ninth or tenth, and again on the thirteenth or fourteenth days; and that during two or three weeks passive motion ought to be done frequently. Union takes place. Non-union is very infrequent indeed; and by motion we have the best chance of freeing the arm from permanent anchylosis.

In a little child I think the internal angular splint may be taken off in about three weeks, and in the adult from three to four weeks. Get it off as soon as you can with safety, and put the arm in a sling, in the same position. The child will accomplish a great deal in the way of passive motion, if encouraged to do so. The sling should be taken away a portion of the time, and by and by the child finding it not painful, will forget it and the arm will drop, and naturally will make the same gradual extension as in the lower leg. The child must be encouraged to carry light weights; to have light calisthenics or gymnastics, and tools to encourage motion of the part. The gimlet, saw, plane — all these things — are extremely useful in overcoming the partial anchylosis, after we know that the break is joined. This stiffening of the elbow after injuries in young children has been so great an injury to them that many surgeons have advised that very little treatment should be used in these fractures; and some have even gone so far as to put the arm in a sling and not do anything else. This, I think, is a risk, for this reason: that if you once get a fragment thrown up out of place, you forever have something that is going to interfere with the joint. The fragments must be pushed down in place, and held in place a certain time, in order that they may remain in their normal position.

We must be especially on our guard that the head of the radius has been pushed well back into place; for partial dislocations of the radius are not infrequent, and give rise to incurable deformity afterwards. The patient becomes very much dissatisfied; because after the parts have healed and the swelling has all gone down, the radius projects very visibly, rotates imperfectly, and the arm never recovers its perfect powers of pronation and supination.

We must pursue in injuries of the elbow-joint a somewhat conservative and middle course. The child should be etherized, thorough examination made, diagnosis arrived at, the joint forced down into its normal position and held a certain length of time by apparatus, of which the internal angular splint is the best. In these injuries about the joint, on the other hand, we should be especially particular not to keep on splints too long, and to begin passive motion very early indeed.

The old internal angular splints, made of wood, with a piece of wire across that allowed them to be moved in certain positions, are not very good internal angular splints. They are not anatomically correct. The best internal angular splint should be bought, or made, *ex tempore*, of tin. The tin splint is, however, rigid and immovable; and, subsequently, if a splint is required which will give a certain amount of mobility, what is called the McIntyre splint, made with a screw, is useful. It is of vast importance to pad thoroughly the parts which are going to fit in the hollow of the elbow-joint. The parts are very tender. The nerve is superficial; veins are there in large number; and compression is painful and disastrous.

Good padding and moderately firm compression; keeping the whole outside of the joint in sight, so that you can see what is going on, are best.

Sometimes pain is best relieved by anodyne fomentations, of which I think the best is laudanum, dilute alcohol and glycerine. About two or three ounces of dilute alcohol, two or three ounces of laudanum and a little glycerine make a very good application; it keeps the skin soft and does not irritate it; and the laudanum has a good deal of narcotic effect. So we must have a carefully padded splint and good position, but not keep it on too long.

Now we come to a point which is much in dispute. Having such an arm come out of the apparatus stiff, what then is the best treatment? Here, there is a great difference of opinion. The older authorities were all in favor of vigorous passive motion, what you might call pumping the arm. The child resisted and screamed. The nurse or some strong person held the upper arm and the surgeon pumped the lower arm, and congratulated himself that he got motion. He got motion, but could not keep it. The next day it swells, is tender and hot. The child is more excitable than ever. The joint is more tender, and a week has to be consumed, perhaps, to get down the swelling, before motion can be resumed. Such being the history, it is sometimes a question whether passive motion accomplishes a great deal. It breaks up the adhesions, but leads to considerable injury. If forced passive motion is to be done, and if we wish once or twice to try that experiment, it is much better that ether should be given, in order that the child may not resist; and we often find to our surprise, after the child is profoundly etherized, that the arm is not so stiff as we had imagined.

On the other hand, the passive motion which does the most good, especially in children, is the passive motion which the patient will give it himself, if you will tempt him to do it; and every means should be used to encourage the child by games, plays, tools, by rewards, to gradually recover the use of the arm. If the arm is left stiff, if you are uncertain how much can be accomplished, etherize the child once, and see how much can be done. In the subsequent treatment, gentle massage, sometimes electricity, may be tried, to break up the adhesions and lead to motion. It has seemed to me that in these ways we can assure the best results.

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Original Articles.

THE TREATMENT OF PUERPERAL SEPTIC PERITONITIS: REPORTS OF CASES.[1]

BY A. WORCESTER, M.D., WALTHAM, MASS.

ALTHOUGH it may seem profitless to discuss the treatment of a disease destined to extinction, yet, because of the very fact of its going out of fashion, the occasional belated victims of puerperal septicæmia seem not so likely to receive the benefits of recent improvements in the treatment of abdominal affections, as do the sufferers from the more fashionable disorders. The subject naturally does not interest the younger members of the profession who have never had the misfortune of meeting the disease. And yet, while it is highly improbable that puerperal septicæmia will ever again be epidemic, it is not yet extinct, and when encountered should be fought intelligently. I propose in this paper to discuss the treatment of the disease only after it has progressed so far as to involve the peritoneum.

In addition to the causation obtaining as well at other times and under other conditions, during childbed the peritoneum may also become infected either directly through the Fallopian tubes, or indirectly by the absorption and carriage of the poison by the lymphatics through the uterine walls and broad ligaments. Unless the Fallopian tube has previously lost its normal condition, it is unlikely to carry the poison directly from the uterine to the abdominal cavity, for the effect of the germs upon the lining of the tube would be such an inflammation as would render it impervious. But if the tube has previously suffered purulent inflammation, or, indeed, distention from any other cause, then, its larger cavity having become infected, its foul contents may easily escape into the abdomen.

The immediate result of this primary infection of the peritoneum is, of course, a septic peritonitis; and this may be circumscribed or general. If the former, it may so remain, or from it may develop the general peritonitis which nine (if not ten) times out of ten kills the patient. At the beginning of any case of peritonitis no man living can foretell whether it will prove to be mild, circumscribed and comparatively harmless, or fulminant, as the fatal cases are styled. And even if the case proves to be of the circumscribed variety, there will almost inevitably result, after a long and tedious sickness, such a mass of adhesions as will forever impair the patient's usefulness.

A more dreadful disease can hardly be imagined, but fortunately it is not insidious. Although many conditions bearing to it more or less resemblance may frighten the inexperienced into believing that they are treating it with their salts or what not, yet when it is actually present there is no mistaking its deadly grip.

The symptoms of septic peritonitis are nearly alike whatever the cause of it. If, however, it is caused by puerperal sepsis, there is always an accompanying high temperature, which indeed is a fairly good index of its severity. But it is not my present purpose to consider at any length the differential diagnosis: I wish rather to ask your attention to the treatment of the affection.

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[1] Read before the Obstetrical Section of the Suffolk District Medical Society, January 25, 1893.

As in all other kinds of septic peritonitis the only reasonable treatment is surgical. It is absolutely necessary to find the source of infection, to remove it if possible, and, failing that, to render it less nocuous by thoroughly draining the peritoneal cavity. Is it not time that this statement can be accepted as axiomatic? Granted that it may have seemed wild several years ago to have advocated the immediate excision of a gangrenous appendix, in the light of our present knowledge of abdominal surgery can it be necessary to-day to argue in favor of the same principles in the treatment of septic peritonitis caused by a gangrenous Fallopian tube or uterus?

It surely will not be maintained that, without a cœliotomy, it is ever possible either to determine the cause or to remove the cause of a septic peritonitis. True, a good guess can be made. If, for instance, the trouble evidently began in the right iliac fossa of a woman, it is probably due to an appendicitis, a perforated cæcum, or a salpingitis. If the trouble began on the left side, the guessing is easier. In either case, and even if correctly guessed, the etiology of the disease is useless to the patient, and unless the source of the infection be directly attacked, it is mere nonsense to attempt any medical treatment of the disease. Given any case of septic peritonitis occurring in the puerperium, there is no certainty except by surgical exploration that the trouble is not due, for instance, to a perforation of the intestine. What then, pray, would be the effect of the Epsom-salts treatment of which we have formerly heard such praise? What but to force out through the perforation more and more infection? Not useless but murderous would be such treatment. Or, in another case, how can our opium-relying friends be sure that the trouble is not already aggravated by, or even primarily due to, impacted fæces? As a matter of fact, and in proof of the acknowleged uncertainty as to the cause of septic peritonitis, physicians have arrayed themselves latterly into three equally intelligent classes, — those who give opium always, those who give salts, and those who, having no especial predilection for either drug, give both alternately or combined. I desire here to make respectful acknowledgments to the distinguished surgeons from Maine, who, at a recent meeting of our parent society, one with salts and one with opiates, so vigorously combated my views on the treatment of appendicitis, which disease, after all, is only a species of septic peritonitis.

The first axiom in the treatment of the disease is to find its cause. The second is to remove it if possible. "Well, but what if it be found that the uterus itself is gangrenous?" I was asked in holy horror the other day. "Would I take it out?" There is no need to answer. As useless to argue with such a mind as to try to persuade the Epsom-salts man to forswear his idol. And yet the question sheds light upon the fatuous opposition to the surgical treatment of peritonitis. There is little use in opening the belly, if, having done so and having found the gangrenous origin of the peritonitis, there is then any hesitation about removing it — whether it be appendix, ovary, tube, uterus or a coil of intestine. Little use, it is true, but still not altogether useless is such treatment; for if thorough drainage is afterwards maintained there is thereby given the chance of slow recovery that would not otherwise exist.

Then, having discovered the cause; having if possible removed it, and, if that is not feasible, having protected the rest of the peritoneum by thorough drainage of the gangrenous region, then, and not till then, comes the reasonable opportunity for the brilliant use of salts or of the comfortable employment of opiates.

Allow me at this point to insist that we are considering the treatment of septic peritonitis occurring in child-bed. Let no criticism of the treatment there advocated be based upon the undoubted recovery of patients otherwise treated who were not victims of this disease. Before reporting the three cases which I offer by way of illustration, it will not be amiss to state that I have unfortunately had considerable experience with the disease before its prevention was well understood. During my service as senior House Physician in the Boston Lying-in Hospital it became necessary to close the doors because of the frightful extent there of puerperal septicæmia.

At one time I had under my charge in the neighborhood of twenty cases of the disease. In several of these cases peritonitis developed. The mortality was awful. Some were treated with opiates; some with salts. Some were constipated; some were from the onset of the disease in a state of continuous purge. The nurses and even the house physicians also suffered from a drastic purging, due apparently to inspired stench. After such experience not even a fool would pin his faith upon any drug treatment of the disease. I now offer the following reports of cases occurring in my private practice.

Case I. Puerperal septic peritonitis; death, autopsy.

On December 3, 1883, I was called in consultation to see Mrs. J., who had been delivered nine days before by version after unsuccessful attempts with the forceps. On the third day after delivery she had a severe chill which was followed by continued fever. Intrauterine douches had been given every two hours night and day for several days. Her temperature at the time of my visit was 108° in the axilla, her pulse 160. She was just recovering from a chill. For the following few days intrauterine douches were given only twice daily, and were followed by intrauterine insufflations of iodoform. But still, although the fever was never afterwards quite so fierce, the chills continued daily, and after December 8th intrauterine treatment was abandoned. Turpentine enemata were occasionally employed to relieve the abdominal distension, and with the help of licorice powder the bowels were kept well open. For a time she seemed to improve; and after a lapse of forty-eight hours without a chill or a rise of temperature above normal, for a day or two there seemed good reason to hope for her recovery, but on December 17th the chills began to come several times a day. There was at this time a special tenderness in the right iliac fossa, where indeed the greatest pain had been localized from the first, and, besides the tenderness, some resistance to pressure was there noticeable. She grew weaker and died on December 23d, the thirtieth day of her confinement.

Autopsy, twenty hours after death. Head not opened. Lungs slightly œdematous. Pericardium contained two ounces of fluid. Heart normal. In the liver there were many large, cheesy deposits under capsule. Spleen pulpy and dark. Stomach and intestines not opened. The cæcum was adherent to the abdominal wall and to the omentum. In this mass of adhesions was pus. Ovaries normal. Broad ligaments both riddled with pus sinuses, on the right side evidently connecting with the abscess next the cæcum. The uterus was honeycombed, and its tissue soaked with ichorous pus; but its cavity was clean and well lined with iodoform.

Case II. Puerperal peritonitis; operation; death.

Mrs. L. M. E., a delicate little woman, during her fourth pregnancy fell through a cesspool-cover, striking her abdomen. She was severely bruised and lamed. But her pregnancy terminated in an easy labor at the proper time, May 18, 1890. She was attended by Dr. C. M. Hutchinson, of Waltham, to whom I am indebted for this history. There was considerable hæmorrhage following the delivery which was controlled by ergot and hot intrauterine douching.

The next day her temperature in the morning was normal; she had passed a good night. That afternoon she had a chill. In the evening her temperature was 102°, her pulse 140. There was abdominal tenderness, especially on the left side. She passed urine freely, and her bowels moved naturally. There was no unusual odor from the lochia. She was restless that night.

May 20th, the third day, the temperature was lower, perhaps from the use of antifebrine, the highest being 101.8°. She complained of pain. The abdomen was slightly distended. The uterus was fixed in the left side and very tender. Turpentine stupes employed. One large, loose dejection that afternoon.

May 21st. In more pain. Temperature 103.8°, pulse 130. Abdomen more distended.

Such was her condition when I first saw her in consultation. Although her bowels were moving loosely several times daily, we decided to employ the salts treatment, and she was given half an ounce of Epsom salts, and a few hours afterwards an enema containing half a fluid ounce of turpentine. There was no improvement in her condition that day or ever after. Morphine soon had to be given for the pain; and only by the free use of whiskey and of tincture of digitalis could she be kept from failing. The abdomen grew more and more distended; she kept belching gas, and finally could be given food and stimulants only by enema.

In this terrible condition an operation was assented to by the family. With the assistance of Drs. Hutchinson and H. A. Wood, I incised the abdominal walls in the median line. As much as a quart of sero-purulent fluid escaped, with abundant flakes of lymph. There was considerable pus collected in the left iliac fossa, set free by finger examination. There was only time for flushing out the cavity, so bad was her condition. A drainage-tube was left in Douglas's fossa. She hardly rallied from the operation, and died the following night.

In briefly reporting this case at the meeting of the Obstetric Section of the Massachusetts Medical Society in June, 1890, I stated my belief that, had the operation been performed when it should have been — at the commencement of the peritonitis — this patient might have been saved. And I stated also my determination, if ever again so unfortunate as to find peritonitis occurring in the lying-in period, to operate when I found it.

Case III. Puerperal peritonitis; operation; recovery.

Mrs. J. H. R., had been married two years. Shortly after her marriage she was very sick with pelvic inflammation, which resulted in an abscess that discharged freely per vaginam. After an easy pregnancy and a normal labor (April 22, 1892), she did very well for a week, when suddenly there developed great pain in the lower abdomen accompanied with a temperature of 101°. The next day the temperature was 102°; there was more pain, and there was tenderness, especially in the left iliac fossa. The lochia being somewhat foul (as indeed is always the case when there is fever) an intra-uterine douche was given of a hot Hg Cl_2 solution (1 to 10,000). The uterus was only four inches deep; the cervix was not very patulous; there was no foul débris in the wash-water; and, in short, there was no sign of septic endometritis.

In spite of hot douches and of hot poultices, the abdominal tenderness, the pain and the fever increased. The trouble seemed to radiate from the left iliac fossa. On the third day her temperature was 103.6° all day. Dr. H. A. Wood saw her with me, and agreed to the diagnosis of septic peritonitis.

On May 2d, after an enema of whiskey and peptonized milk, she was etherized, and the abdomen opened for two and one-half inches in the median line. The peritoneum was highly congested. Considerable serum escaped; and on digital examination of Douglas's fossa and of the left iliac fossa, large lymph-flakes were set free. The right tube was enlarged and surrounded with old adhesions. After flushing out the abdominal cavity with hot water, a tube was left in Douglas's fossa. She recovered from the operation well, the temperature the next day was 100°, and practically normal thereafter. There was not much discharge from the drainage-tube, which was removed on the third day, nor from the sinus afterwards. Excepting for a slight cystitis, caused no doubt by the catheterizing, there was a rapid convalescence; and this, in spite of the arrival from Colorado of her dying husband the very day of the operation, and of his death the week after.

On the tenth day she was sitting up; on the fourteenth day, walking about; and by the fourth week was well and strong. She has not suffered the least discomfort since.

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RECURRENT APPENDICITIS; SIX OPERATIONS WITH SIX RECOVERIES; TREATMENT FOR ACUTE ATTACK IN FIVE CASES.

BY S. C. GORDON, M.D., OF PORTLAND, ME.,
Attending Surgeon, Maine General Hospital, etc.

In an address[1] delivered before the Maine Medical Association, June 10, 1891, and published in the *Boston Medical and Surgical Journal*, September 3d and 10th, I used the following language in relation to appendicitis:

"I have been satisfied for two years that peritonitis arising from the cœcum and appendix should be treated heroically by salines, without regard to the cause. The *condition* is what immediately demands our attention. The *cause* has done all the harm it can, when we are called. A free depletion will relieve the congested and inflamed vessels, preventing in a majority of cases, suppuration and gangrene, thus allowing the case to terminate by resolution.

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[1] Common Sense in Medicine.

"If abscess result, then operate and drain with the least possible disturbance to the tissues. It the appendix can be reached, remove it, otherwise leave it. I feel that the theory of early operative interference is untenable, provided we follow the saline plan. It is the plainest common-sense, to my mind."

Since that time, in every case of appendicitis to which I have been called primarily (in the inflammatory stage), I have followed this plan. In no case have I operated during this stage, if I have had the management of the case before abscess formed, or signs of gangrene existed. In some of the cases I did not operate even when I felt sure that pus had formed, and as the subsequent operation (made after the acute attack had entirely passed away) showed.

Unless the pus was near enough to the surface to indicate its existence by well-marked tumor, circumscribed and fluctuating, I refrained from operating. I had an opportunity in five of the six following cases to treat the patient through one or more of the acute attacks; and as soon as convalescence was established, I operated.

Case I. R. J. M., male, age ——. I first saw him in Boston, in May, 1892. He told me that he had been treated for six attacks within a year — was then just recovering from one; four of them had occurred within the previous four months, all in Boston. No suggestion was made of operation by the medical men who had charge of his case during these attacks. I proposed to operate for the removal of the appendix if he came to Portland. He came soon after; but circumstances would not permit him to give up for the operation until June 12th. In the mean time, I had almost daily observation of the case. He suffered more or less every day from pain in the region of the cœcum.

June 12th, assisted by Dr. J. F. Thompson, I made the usual incision over the McBurney spot, and found the appendix completely ulcerated off, just holding by a small slip of peritoneal covering to the cœcum, into which was an opening large enough to admit the end of my index finger. Why fæcal matter had not come out is difficult to say. I closed this by buried sutures through the muscular and mucous coats, and approximated the serous edges with fine catgut sutures. He made a complete recovery. This case was undoubtedly of tubercular origin, as he then was suffering from pulmonary tuberculosis, from which he died in December last, six months after operation.

Case II. Miss R., age twenty-five, was taken with the usual severe pain in the region of the cœcum, accompanied with vomiting and fever. I saw her early, and got free action from salines as soon as possible. The acute symptoms lasted three days, but were so well marked that I had no question as to the nature of the condition. This was about the last of July, 1892, and convalescence was not established until near the middle of August. Indeed, through the entire summer, she suffered at times from severe colic pains. I had advised operation as soon as convalescence was fairly assured; but, being away on vacation myself, and there being some fears on the part of her friends, I delayed any definite time for it.

The middle of September she was taken with a second attack, much more severe than the first, both in pain and fever. A distinct tumor could then be felt. The same course of salines and leeches over the part terminated the case in about the same time as the first.

October 7th, I operated, assisted by Dr. H. M. Nickerson. I found the appendix ulcerated half off, three-fourths of an inch from the gut, while immediately at the base were three perforations — débris of pus and exudate all around the part. She made a good recovery, and has been in better health since than for a long time before the acute attack.

Case III. M. H., male, age thirty-six, conductor on the Maine Central Railroad. In August, 1862, he suffered from a good deal of colic pain for several days, and was "generally used up." This occurred while on vacation, and he did not apply to any one for medical treatment.

November 1st, he was taken with well-marked symptoms of appendicitis — severe pain, vomiting, and finally distinct hard tumor in right iliac region, with special tenderness at McBurney's point. Being a specially nervous man, I did not inform him of the nature of the attack, but put him at once upon the saline plan, and applied leeches. The violent symptoms soon subsided, leaving the tumor. I applied a large blister, which acted favorably in relieving pain and absorbing exudate. He had lost very much in weight during the month of November. At no time did he experience entire relief from pain and tenderness on pressure. He improved somewhat in his general condition, but had little strength or ambition.

December 17th, I operated, assisted by Dr. J. F. Thompson. I found the cœcum firmly adherent to the iliac wall, and the appendix turned back behind the cœcum, to which it was bound by very strong adhesions. It was very friable and semi-gangrenous, with a perforation about three-fourths of an inch from the free extremity, the whole surrounded and imbedded in exudate and caseous pus. Carefully dissecting it from the cœcum, I ligated it off with catgut, curetted away all the exudate, sponged the cavity with sublimate solution (1–2000), and closed, leaving no drainage-tube. Recovery, without anything of a disturbing character. Now entirely well, and running his train since February.

Case IV. F. P., male, age twenty-six. During the summer of 1892, while on vacation, had a very severe attack of colic, near umbilicus, and near right iliac region. Was better before next day, having taken large doses of whiskey. Soreness continued more or less for several days, but no medical aid was sought. His health was more or less impaired during the autumn and early winter. Had occasional colic pains, and suffered somewhat from intestinal indigestion. About the last of December he was attacked with quite severe pain in the abdomen, which compelled him to give up business and remain at home. I saw him in consultation, and found that he had been suffering for three days with pain; temperature varying from 101° to 103.5°; pulse in proportion; more or less nausea, with distention and tympanitis in right iliac region. Opiate plan had been pursued up to that time. Being convinced that perforation of the appendix had taken place and pus already formed, I began the free use of salines — Seidlitz powders every hour, followed by saline enema, which within twelve hours operated powerfully, reducing temperature and relieving pain. A well-marked tumor existed which like the last case gradually diminished until all actual symptoms ceased and convalescence was well established.

January 11, 1893, I operated, assisted by Dr. J. F. Thompson. About a half-inch from the cœcum the appendix was perforated entirely through the diameter, and the edges of the opening were entirely sound and cicatrized. I have no doubt that this perforation took place in August when he had the severe pains. About a half-inch from the free extremity was a recent perforation; and the entire appendix was nearly gangrenous, the whole partially adherent to the cœcum behind. Some fresh pus and exudate were found in the immediate vicinity, while deep behind the head of the colon was a large abscess-cavity, which contained caseous pus and exudate, which unquestionably had been there from the first attack. Removing the appendix and curetting the entire surface and abscess-cavity, I washed out with sublimate solution (1 to 2000), and closed the wound, with no drainage. The case did well. There were no unpleasant symptoms whatever. In about two months he resumed his business, and is now in perfect health.

Case V. Male, age twenty-three. Sent to the Maine General Hospital during my service in December, 1892, by Prof. Alfred Mitchell, of the Maine Medical School, who reported that he had suffered from eight attacks within a year, the last more severe than any of the others. The McBurney point showed tenderness on pressure; and the patient described it as the chief point of pain during an attack.

I operated December 30th, assisted by Dr. W. L. Dana, adjunct surgeon, and other members of the surgical staff. I found the appendix and cœcum slightly adherent to the wall, the appendix large and thickened by exudate; no perforation. On being removed and opened there was found a small spot about one inch from the end, where hæmorrhage had taken place from the mucous surface, which was a good deal softened. In all probability another attack would have produced perforation. No foreign or other matter was found, and I have no doubt the attacks had been catarrhal appendicitis. The same course was followed as in the others, and an equally favorable result ensued. He returned to Brunswick, Me., in about four weeks.

Case VI. L. E., male, age eighteen. Called by Dr. B. F. Dunn, January 27, 1893. He had been ill with well-pronounced symptoms of appendicitis for nearly a week. I am quite certain that pus had already formed, but seemed to be well circumscribed. A distinct exudate, too, now existed at a point between the superior spinous process and umbilicus. Temperature varied from 100° to 103° during this time. I ordered salines and leeches, from which he soon experienced relief. Rest in bed and blister soon established convalescence — within two weeks; and February 11th I operated, assisted by Dr. J. F. Thompson. The appendix was adherent behind the cœcum, with a perforation near the end, the whole mass adherent to the pelvic wall, while the cavity behind the cœcum was filled with exudate and caseous pus. With much difficulty the appendix was dissected off and ligated. I curetted all the parts involved in the exudate, and after sponging with the sublimate solution, I closed without drainage. In one month to a day, he was driving about the city.

Since these cases were operated upon, I have seen three others in the acute stage, and have followed the same plan of depletion with equally good results. In one I have already advised operation, and shall in the other two when the time comes.

Whatever criticisms surgeons have to make upon this plan, it is sufficient for me to feel that this is the proper course to pursue. My experience leads me to believe that nine out of ten cases will convalesce under this plan of treatment, if faithfully followed. I think the time has come when there should be no excuse for not making a diagnosis, even in the early stages, which is the time for best results from medication, before pus forms, if possible.

My conclusions are brief:

(1) Nearly all cases can be carried through the acute stage, safely, by the saline and depleting plan.

(2) A diagnosis should be made even in the early stages.

(3) Operation made during the acute stage is always dangerous, inasmuch as it adds unnecessary traumatism to the condition.

(4) Removing the appendix does not stop the progress of the disease, as it has done all the mischief that it can.

(5) Operation should be made after convalescence is well established, as there is always danger of other attacks.

(6) With care the operation is almost entirely free from mortality — ought not to exceed three or four per cent.

(7) Properly performed, and the parts thoroughly cleansed, drainage is not only unnecessary, but unsafe.

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Clinical Department.

A CASE OF ACUTE BILATERAL OPHTHALMOPLEGIA, EXTERNA AND INTERNA.[1]

BY FREDERICK E. CHENEY, M.D.,
Instructor in Ophthalmoscopy, Harvard Medical School.

The case I have to report is that of a young woman, thirty-three years of age, who was first seen by me June 13, 1892, in consultation with Dr. O'Shea, of East Boston. The history is as follows: Ten days after her last confinement (May 23, 1892) while stooping to pick up something on the floor, she was seized with a severe neuralgic pain in the right eye, temple and brow. Within a short time the eye became red and the lids swollen. On the following morning there was inability to raise the lid or move the eye in any direction. Five days later, severe pains developed in the left eye and side of the head, followed within a few hours by redness and swelling, drooping of the lids and immovability of the globe as in the eye first affected. When the lids were raised with the fingers, the sight was found to be much reduced and for the first few days she said she could see almost nothing. The pain continued severe for a number of days. The past history was unusually good. She had had four previous confinements with perfectly normal recoveries. No miscarriages and nothing that suggested specific disease.

Upon examination the ptosis was found to be complete both sides, and there was an entire loss of power in all the external ocular muscles, the eyes being perfectly immovable. The pupils were moderately dilated and reacted very sluggishly to light. There was a slight exophthalmus, more noticeable on the left than on the right side. No pulsation of the globes and pressure backwards into the orbits met with no unusual resistance, nor caused pain. The conjunctiva of the right eye was considerably injected, and the lids moderately œdematous. On the left side the condition was much more marked, there being greater swelling of the lids, and the ocular conjunctiva was so œdematous that it projected forward in folds. Vision either eye equalled fingers at ten or twelve feet distant. Both optic discs were much injected and the borders hazy and indistinct, but not obliterated. The retinal veins were congested and somewhat tortuous.

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[1] Read before the Boston Society for Medical Observation, March 6, 1893.

The patient was admitted to the Massachusetts Charitable Eye and Ear Infirmary as a house-patient, June 18th. She was kept in bed a number of days, ice compresses applied to the lids, and vaseline once or twice a day to the eyes, the vaseline being used as a protection to the corneæ. Iodide of potassium was prescribed internally, 10 grs. t. i. d., and was gradually increased to 60 grs. t. i. d. Her temperature was at no time higher than 100.6°, and usually about normal. The headaches continued for a number of weeks, and a noise in the head was also complained of, "like the puffing of a steam-engine," which she thought began two or three days after the first neuralgic pains. It seemed to be in the left side of the head, and was louder and more annoying than it had been at first. The ears were examined and there was found to be considerable thickening of the left membrana tympani, which seemed sufficient to account for the noise.

At the time of admission, there was a marked fold of the œdematous conjunctiva below the left cornea. This slowly increased in size, became hard and boggy to the touch, and projected between the lids as a smooth red tumor as large as a butternut. A considerable portion of this tissue was removed July 25th, as it had become sensitive and irritable, and showed no tendency to decrease in size.

July 23d, about seven weeks after the beginning of the trouble, the first improvement in the muscular condition was noted by slight rotary motion of the right eye when an attempt was made to look outward. July 25th, two days later, the right pupil was contracted and reacted sluggishly to light. There was a very slight lateral movement of the right eye and the lid of that eye could be raised a little. Within a few days the left pupil also contracted and from that time on there was a gradual return of power in all of the ocular muscles with the exception of the left external rectus. The pupils varied considerably during convalescence, becoming dilated and inactive for a day or two, when they would again contract, being at times equal, and at other times, unequal in size.

August 4th, she was examined at the Out-patient Department of the Massachusetts General Hospital by Dr. Townsend, the result being as follows: Heart negative, except that it was rather rapid — 120. Urine, specific gravity 1003; slightly alkaline reaction; no albumen or casts; no sugar. Amount of urine in twenty-four hours was about four quarts. An examination was also made by Dr. Walton, at this time, for the possible presence of other nervous lesions. The result, however, was negative.

She was discharged from the infirmary September 14, 1892. When seen November 20th, the ptosis had almost entirely disappeared. The movements in the right eye were about equally good in all directions, but decidedly less than normal. The left eye converged, owing to a complete paralysis of the rectus externus; but upward and downward movements were fairly good. The right pupil was of normal size, reacting well to accommodation, but sluggishly to light. The left was a little larger than the right, reacting to accommodation but not at all to light. The accommodation in both eyes was very defective. Fields of vision about normal. With the ophthalmoscope both discs were found to be pale and their borders were not as well defined as normal. Near the outer border of the left disc there were three or four small glistening spots like cholesterin. The retinal veins were somewhat congested but not tortuous. In other respects the fundus appeared normal. V. O. D. = 0.3 with + 1.25 D. = 0.7. V. O. S. = 0.2 with + 1.25 D. = < 0.6. The headaches had entirely ceased; but the noise had not changed in character or situation, nor decreased at all in its intensity. At the request of the patient that I should listen and see if I could hear it, I did so, and was much surprised to find that I could. With the stethescope a murmur could be heard all over the head, louder, it seemed to me, at the left temple.

A few days later she was seen by Drs. Minot and Gannett at the Massachusetts General Hospital, and, although the result of this examination, through a misunderstanding, was not recorded, Dr. Gannett has kindly sent me a report of the condition, as he remembered it, which is as follows: "A blowing systolic murmur heard all over the head, very loud when heard through the stethescope or by the ear directly against the head. It could easily be heard without the stethescope, at least an inch away from the head. Heart normal."

Dr. Minot made a second examination March 2d, with the following results: Pulse 120, regular. Lungs negative. Heart not enlarged, no murmur; no murmur in the arteries of the neck; no venous hum in neck. There is a very distinct murmur to be heard all over the bony part of the head. The murmur is quite soft, prolonged, and with a very short pause between any two murmurs and is systolic ("heart systolic") in time resembling very much a venous hum with systolic accentuation. The murmur is not heard much louder in one place than in any other. It can be heard all over the bones of the skull and down to the second cervical vertebra, and a little along the lower jaw. It is heard least well at the top of the head over the longitudinal sinus, best at the temporal regions and behind the ears, and perhaps better left than right. There is no visible pulsation about the head, no great enlargement of veins.

The question as to the situation and nature of a lesion which would give rise to the symptoms presented in this case, is an extremely interesting one. The rapid and complete paralysis of all the ocular muscles, first on one side, then on the other, together with the failure of vision and evidences of obstruction to the orbital venous system, would suggest the presence of some acute process in the neighborhood of the sphenoidal fissures and optic foramina, which involves both second, third, fourth and sixth nerves and the ophthalmic veins. It would seem probable, also, that the process was intracranial, extending from the right to the left side of the cranial cavity, and not orbital, for in the latter case it would be necessary to suppose two distinct independent lesions. The nature of the lesion certainly cannot be determined with any degree of certainty at the present time. The ocular symptoms can be more satisfactorily accounted for, it seems to me, by supposing a localized inflammation of the dura mater with sufficient swelling or exudation to compress the nerves and veins involved near their point of entrance in the orbit. The severe neuralgic pains may have resulted from pressure on the ophthalmic division of the fifth, though it may, of course, have been a purely reflex symptom. The murmur also might possibly be produced by such a condition, the pressure being sufficient to cause a narrowing or displacement of some of the vessels in this region.

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Medical Progress.

RECENT PROGRESS IN GENITO-URINARY DISEASES.

BY FRANCIS S. WATSON, M.D.

RENAL TUBERCULOSIS.

IN the *Archiv für klinische Chirurgie*, 1893, Band 45, Heft iv, Facklam, of Rostock, publishes an important article on this subject. The author summarizes 108 cases of tuberculosis of the kidney; in 20 of which nephrotomy, and in the remainder nephrectomy was performed.

Apart from the operation, there are some general observations upon the disease that are of interest. Two-thirds of the patients were women. The percentage of cases with reference to age is shown below:

1 to 10 years	7 per cent.
11 to 20 years	9.4 "
21 to 30 years	37.6 "
31 to 40 years	37.6 "
41 to 50 years	7 "
Over 50 years	1.2 "

In 38 cases out of 72 the diagnosis was correctly made before operation.

The following conclusions are drawn from a study of the operations and their results:

The mortality attending the operations in the 20 nephrotomies was about 60 per cent.

Of the eight patients who recovered, four only are claimed as cures; and of these but one resulted in a well established cure.

Of the patients who died within a short time after the operation, five had had the disease for several years previously; two of them developed acute miliary tuberculosis immediately after the operation; one died of uræmia; the other kidney was seriously involved by the disease; one died of acute septicæmia; and in the remainder the disease was far advanced, or had involved other organs beside the kidney.

From this evidence the author concludes: "Thus far the results of nephrotomies in cases of renal tuberculosis are not favorable."

In 16 additional cases in which nephrotomy had been performed without improving the patient's condition, nephrectomy was done — resulting, in 10 of them, in very marked improvement.

Nephrectomy was performed in 88 cases, with a mortality of 28 per cent. In 13, the operation was performed through an abdominal incision, with four deaths (about 30 per cent. mortality). In 75, the operation was extraperitoneal, 21 deaths resulting (or about 28 per cent. mortality); but of these latter 16 can be said not to have died as a direct result of the operation, whereas the four deaths resulting from the abdominal operation were all due to shock, and followed immediately upon the operation.

Of the cases which recovered from the operation 62, or 70 per cent., are reported as wholly cured or greatly relieved, but of these only 14 had been under observation for over one year after the operation. Of these 14 cases, five are entirely cured, so far as can be seen; the rest are not wholly free from evidences of the disease.

REMOVAL OF THE SEMINAL VESICLES.

Since Ullman[1] removed both seminal vesicles for tuberculous disease, by Zuckerkandl's method — which consists in exposing the prostate and base of the bladder, by dividing the anterior attachments of the rectum and then freeing it from the prostate and lower part of the bladder, Roux[2] has reported two cases in which for tuberculous disease he has removed one seminal vesicle, together with the spermatic cord and testicle of the same side — through a lateral perineal incision, reaching the vesicle by a dissection carried upward between the prostate and the rectum.

Dr. George W. Gay, of Boston, in May, 1891, removed the right seminal vesicle, through a lateral perineal incision (similar to that practised by Roux), for cancerous disease thought to be primary in the vesicle.[3] Six months later the wound, which had healed well, reopened; and examination revealed a hard mass, about the size and shape of the forefinger, in the site of the seminal vesicle which had been removed.

Villeneuve[4] reports a case in which he removed one seminal vesicle by exposing the spermatic cord outside the inguinal canal, and by freeing and pulling on the cord until the seminal vesicle was sufficiently brought down to be reached and excised.

TAMPONING THE BLADDER TO ARREST HÆMORRHAGE AFTER SUPRAPUBIC PROSTATECTOMY, ETC.

Keyes here describes[5] an original device for checking hæmorrhage under these conditions, by means of a gauze pad to which a thread is attached and led through a perineal wound. Traction upon the thread brings the pad firmly against the bleeding surfaces in the lower part of the bladder and about the vesical orifice. The pad can be removed when desired by means of a second thread which is led through the suprapubic wound. Cabot has modified this device in such a way that the gauze pad can be drawn out into a thin band, and so be removed more readily.

THE OPERATIVE TREAMENT OF THE HYPERTROPHIED PROSTATE.

Belfield, in an article on diseases of the prostate[6] states that about 150 cases of radical operations upon hypertrophied prostates, are on record; that in about three-quarters of these the power of voluntary urination (which had previous to operation been partially or wholly abolished) was restored.

The mortality of prostatectomy is placed at 13 per cent.

The author advocates the suprapubic method of operation combined with a perineal incision, in order to secure the removal of that portion of the prostatic growth which so frequently extends into the prostatic urethra, as well as the lateral or intravesical parts of the gland which obstruct the urinary outflow.

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[1] Reported in Centralblatt für Chir., February 20, 1890.

[2] La Semaine Médicale, Paris, April 8, 1891.

[3] Case reported by Dr. Paul Thorndike, in "A System of Genito-Urinary Diseases," page 987, edited by Morrow and published by D. Appleton & Co., New York, 1893.

[4] La Semaine Médicale, September 28, 1891.

[5] New York Medical Record, September 17, 1892.

[6] "A System of Genito-Urinary Diseases," edited by Morrow and published by D. Appleton & Co., New York, 1893.

The author advises that the radical operations be performed when appropriate at an earlier period of the disease than it is customary to do them. The palliative operations by drainage (perineal or suprapubic) are advocated for those patients who are too debilitated at the time of seeking relief to support the greater strain of a radical operation.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. OBSTETRICAL SECTION.

G. H. WASHBURN, M.D., SECRETARY.

Regular Meeting, Wednesday, January 25, 1893, **Dr. Davenport** in the chair.

Dr. A. Worcester, of Waltham, read a paper on

THE TREATMENT OF PUERPERAL SEPTIC PERITONITIS.[1]

Dr. Edward Reynolds: I shall begin with some reply to what Dr. Worcester has said, and then go on to speak of my own views and habitual treatment of septic peritonitis later. The two years of seniority which I think Dr. Worcester has over me carry him back into the days when sepsis was endemic at times. I never saw that; but I was, in the first years of my practice, very familiar with the days when nothing was done for sepsis after it had occurred, that is, nothing from the modern point of view. I think that there can be no question but that the whole face of obstetric sepsis has been revolutionized by the modern understanding of the fact that you must go to the bottom of septic trouble and clear out the nidus of infection, if you want to do anything in the way of curative treatment; but I am very much struck with the difference between the views that Dr. Worcester holds and those which I hold as to what operation should be done. In the last seven years I have seen a good deal of puerperal sepsis in hospital and consultation practice, and a number of cases of puerperal peritonitis and I never yet had to do cœliotomy for this cause, nor can I look back on any case that I think would have been saved by a cœliotomy. I have never lost a case of puerperal peritonitis since the modern treatment began, except when there was general lymphatic or venous sepsis and metastatic abscesses. I have seen this but twice. I have seen a number of cases which to all appearance had general septic peritonitis get well under supporting treatment and free catharsis after the removal of the source of the infection by curetting out a septic endometrium.

I want to criticise one statement that struck me in Dr. Worcester's paper. He said to us that, sepsis existing in the uterus, if the tubes were in their normal condition, the infection would not travel through the tubes into the peritoneum, but would be cut off by swelling due to congestion (I should most heartily agree with that), but that if a tube had been previously dilated by purulent inflammation he thought it would transmit the infection. I had an idea that purulent inflammation of the tube almost always shut it off from the abdominal cavity, and I do not see how pus could travel through a closed tube.

Now as to my own views as to the treatment of septic peritonitis. I think you have got to subdivide cases of septic peritonitis into three classes before you can speak intelligently of them. There are a not inconsiderable number of cases of sepsis where the patient from a very early period in the disease shows more pronounced symptomatology of general septic infection than of peritonitis: there is peritonitis, but it is only one element in the case. A great many such patients are very comfortable, quiet, hopeful, unwilling to believe themselves very ill. There is a peculiar expression of rest and content about some of them. In my experience these patients always die, and if they live any length of time generally have metastatic abscesses in other parts of the body. That is a class of puerperal peritonitis I should not be willing to do cœliotomy upon, because it seems to me the peritonitis is not a very important element in the condition.

Then comes a class of cases in which the symptoms of peritonitis are marked and pronounced, often occurring very early after the labor, in which on bimanual examination you find distinct masses in the pelvis, masses in the broad ligament. In the lesser grades of that class of cases you may feel pretty sure that the peritonitis is pelvic; that is, the symptoms of general peritonitis are not marked. From that the cases run up by imperceptible degrees into cases where the local affection is less pronounced, and the symptoms of general infection more and more marked, until finally you reach, without any abrupt change a class, which is I think very small, in which no pronounced tumors, no pronounced enlargements in the broad ligaments or at the sides of the uterus are to be found, but in which there is a marked symptomatology of general peritonitis. This is the third class into which I should wish to divide the cases, but is not separated from the second by any sharp line.

As regards the question of the treatment of the second class of cases one may, of course, get rid of the offending tubes or of the phlegmona or abscesses in the broad ligaments by opening the abdomen and enucleating, but I do not believe that such action is often necessary. I have seen a great many such cases in the out-patient department of the Boston Lying-in Hospital, where we have a great many women who have been the subjects of previous sepsis, and a good many who in one way and another are infected, and who get up local trouble in the broad ligaments, and symptoms of general peritonitis more or less marked. I and my colleagues have grown to feel that they are all going to get well if we get at them soon after the peritonitis is underway. Our routine treatment is to make a speculum examination at once, pass a pledget of cotton into the uterine cavity and if there is any odor about the uterine cavity to subject it to the action of a large (so-called dull-wire) curette. We have some large ones which are made for the purpose: they are practically sharp enough to go through a puerperal uterus if you are rough, and must be used with care. I should have said, that first we disinfect the uterine cavity with corrosive sublimate, then with that curette attempt to cover every atom of the internal surface of the uterus until the grating of firm uterine tissue is felt, then wash out again with corrosive sublimate and insert an iodoform bougie; then, having as we hope disposed of the nidus of infection, we open the bowels with a saline cathartic and give supporting treatment. If foul lochia continues we repeat the curetting, though that is seldom necessary. Under that treatment I have seen quite a number of cases where there was marked filling up of the broad ligaments at the sides of the uterus, probably pus tubes, empty and discharge pus steadily for days through the os uteri and the woman get well, and I have examined several such cases afterwards and found little or no difficulty. One which I wish to report later in detail is to all appearances as healthy a woman as you can find in the city of Boston. I think that the advances of the last year or two in gynæcology raise the question whether it might not be well to curette the endometrium and pack it with iodoform gauze sufficiently to drain away any discharge from the uterine cavity. I think that there are undoubtedly in this class of cases a few in which this treatment is inefficient, in which we must be driven to extirpation of the diseased tubes or broad ligaments by cœliotomy, but, as I have said, out of a good many cases I have never come across one yet, and I do not believe they are common, and I do not believe it is the operation of first resort.

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[1] See page [illegible] of the Journal.

Then comes the third class, which I believe to be a very rare one, where you do not find much of anything in the pelvis, and you find the symptoms of general peritonitis. Now if I could be assured absolutely that I had before me a case of general, diffuse, purulent peritonitis, without any local and circumscribed affection, I should unhesitatingly believe there was only one chance for the patient's life and that to drain the abdomen, — and that a very poor one, but my belief is that I cannot diagnose that condition from one which is perfectly curative by the milder measures of which I have spoken. With all due respect to Dr. Worcester I do not think that he has as yet shown that in his third case there was anything more than a congested peritoneum, an abundance of serum in the peritoneal cavity and some exuded lymph at the bottom of Douglas's fossa, that was cut off from the general cavity until his digital examination stirred it up and I think that under conservative treatment it is quite possible that it would have resulted in a merely circumscribed inflammation and finally in recovery if he had cleaned out the uterus and opened the bowels. Of course, it may have been a case that would have opened into the vagina, or that would have required a cœliotomy later on, but I think there are a great many cases that quietly get well in this condition and I know that I so often cannot diagnose a general, diffuse, purulent peritonitis, from conditions that get well without cœliotomy, that I prefer to adopt the minor treatment that I have spoken of and wait for more definite indications. Now I want to report a couple of cases illustrative of my position:

The first case, a case I have already reported, was a patient of the Lying-in Hospital attended by Mr. Duff, then of the Harvard Medical School, in which a woman after a miscarriage at four and a half months had on the third day a temperature of 102° and on the fourth 104.8°. I saw her that night. She had then for about twenty-four hours been vomiting constantly a spinage-green vomitus. At the time I saw her there was an almost constant regurgitation of this green stuff from the mouth, abdomen swollen and tympanitic, knees drawn up, the face had that facies of peritonitis which we all know and cannot describe. The pulse was 120. There was every appearance of rapidly fatal peritonitis. I curetted out a mass of foul secundines from her uterus, got it disinfected, introduced iodoform, put her on whiskey and sulphate of magnesium and the next morning the vomiting had ceased, the abdomen was not distended, the tenderness was almost gone. The temperature had fallen. It fell gradually in the course of the next week to normal. The woman made a thoroughly good recovery. Of course the result shows this was not a case of diffuse *purulent* peritonitis, but I think it was a case that some men would have operated on.

The second case was a woman with a peculiar and interesting obstetrical history which I will not go into now, who had after her first labor quite severe obstetric sepsis. It was in the days when we did not know how to treat the affection as efficiently as we do now, and she made a long and lingering convalescence. Her second labor was uneventful. In her third, with the assistance of a number of gentlemen and for reasons outside this question, I dilated the uterus at seven and a half months, turned and delivered. As soon as the patient recovered from the ether, there was intense abdominal pain and high temperature. The woman passed on into a condition of extreme vomiting, delirium, swollen and tympanitic abdomen, and, in short, was believed by myself and all who saw her to be suffering from general peritonitis. Cœliotomy for such conditions was not then common, and she recovered under medical treatment. She was not curetted because the uterine lochia were sweet and there was no reason to suppose that the invasion was from the uterus. Our diagnosis was that some local inflammatory collection had been ruptured during the operation. I report the case now simply in support of my belief that it is impossible to make an accurate diagnosis of diffuse purulent peritonitis, without operation, which position Dr. Worcester also takes I believe, and as an instance in my experience where a case, in which the diagnosis of acute general peritonitis had been concurred in by a number of gentlemen, quietly got well. Under these circumstances it does not seem to me that these are cases to operate on simply because you have not got a diagnosis. Now, then, I propose for myself to limit cœliotomy after labor to cases in which there is circumscribed pelvic trouble, (to use a term which is not pathologically exact, a pelvic abscess,) or purulent salpingitis that does not improve after the uterus has been thoroughly curetted and disinfected, and I think, in the future, packed; and I expect to go a long time before I find myself called upon to perform this major operation. Further, in cases where no such collection is found, where the symptoms of general peritonitis are very marked, and where after a fair trial of supportive treatment (milk and eggs, whiskey, and free opening of the bowels by salines) there is no improvement, I should believe in an exploratory cœliotomy, but I do not believe that that latter class of cases will occur frequently enough to form a very important element in the treatment of puerperal peritonitis, and I do think that for judicious operating it is very important to exclude from that class of cases those in which there is already a secondary septic infection of other organs and tissues in the body. I think there are a great many cases where secondary infection is tolerably marked from the start, and which are consequently not to be cured by cœliotomy, that might very easily be mistaken for pure diffuse peritonitis without pretty careful investigation.

Dr. C. P. Strong: I came here this evening without prepared remarks, so that if I said anything, the topics might be suggested by previous speakers; and the topic that is especially suggested by the papers of this evening is the question of diagnosis. Dr. Reynolds has spoken of septicæmia in the puerperal state, and has taken it, as it were, from the beginning of the disease. Dr. Worcester, it seems to me, has taken the disease in the later period (unless I misunderstand his remarks); and it seems to me that that point is one that should be most carefully kept in mind in discussing the subject. I notice in Dr. Worcester's paper and in his reports of cases he made no allusion — I possibly overlooked it — to any uterine treatment or any consideration of the uterus itself, except speaking in one or two instances of a gangrenous uterus. Now it seems to me that in discussing this subject broadly as a question of puerperal sepsis, we ought to consider puerperal sepsis in its beginning, which Dr. Reynolds so ably presented, and puerperal sepsis in the later stage. In the beginning of puerperal sepsis unquestionably the nidus of the disease will be found in the uterus, and if it is proposed to do anything for a patient immediately, then is the time, and to do it by attending to the disinfection of the interior of the uterus.

Now, as regards symptomatology, you usually find symptoms of peritonitis when the disease is still very young. I think until you have made sure that the interior of the uterus is free and is not enclosing septic material, to do a cœliotomy unless you are cognizant of a circumscribed disease outside in the tubes or peritoneal cavity, is wrong. In a later stage when your peritonitis is of the pronounced type, when you are only reasonably sure that whatever may have been the trouble in the beginning, the uterus itself is clean, I think you still should curette the uterus even if it is proposed to do a cœliotomy. But when the peritonitis exists, and there is no septic metritis or endometritis, then it seems to me there is no question but a cœliotomy should be performed as the one chance of saving the patient. I do not see very many cases of peritonitis following confinement in which the question of cœliotomy presents itself to me. I have seen within the past year two or three, possibly more. I remember two especially. One of these I operated on, and I reported the case at some length because it was interesting from the patient having previously had an extra-uterine pregnancy and subsequently two confinements. In that case the patient was almost moribund when I saw her. There was no vestige of peritoneum to be found in the pelvis whatever. Everything was matted together and there were purulent tubes, but there were no distinct abscesses. She lived four days with a lowered temperature and if she had been operated on, I think, a week or so sooner, — it was six weeks after the confinement that I saw her, — I think she would have lived. She died simply from inability to be sustained, the heart gradually failing. I think that is a case which bears out Dr. Worcester's position most emphatically. I find myself rather at a loss to say much in this matter unless it is more clearly presented to me just when Dr. Worcester would do a cœliotomy, and I should like to ask if he means that he would open the abdomen within a few days after confinement if a woman showed symptoms of peritonitis and only symptoms of peritonitis, without first curetting and disinfecting the uterus, without thorough examination of the interior of the uterus?

Dr. Worcester: I understood, Mr. President, that we were to discuss the treatment only of puerperal septic peritonitis and not the treatment of puerperal septicæmia in its broad aspect. I certainly agree most heartily with what Dr. Reynolds and Dr. Strong say of the treatment of purulent inflammation of the endometrium. I would not do a laparotomy for a septic endometritis any more than I would for a bunion.

Dr. Strong: Taking it as the last remark would indicate, that it is only when the peritonitis is the marked symptom and nothing else to be found, it seems to me that cœliotomy is the proper procedure. I went through two epidemics of septicæmia at the Lying-in Hospital, and I was there a year. I used to give intra-uterine douches to six or eight patients a day for weeks. With my experience then I believe that many of these patients who died could have been saved if they had only been treated by what I believe to be a proper method in such cases, by cœliotomy and cleaning the peritoneum. Those on whom we obtained post-mortems had everything matted together, diffuse abscesses through the peritoneum, and sometimes single abscesses. The vaginal examination of those cases always showed large indurated masses. I recall no case that showed fluctuation so that we would do what ordinarily was done then, namely, puncture through the vagina and drain; but I believe that many of those could be saved and I certainly advocate that when the case is diagnosed to be puerperal septic peritonitis, the interior of the uterus not the source of the infection at this time, a cœliotomy should be done and the patient who is otherwise certainly doomed given a chance. The third case Dr. Worcester alluded to, where he opened and relieved the abdomen of the serum and evacuated an abscess in the cul-de-sac, I consider was judiciously treated. If that had been left to go on and form a circumscribed abscess she had an excellent chance of death from septicæmia, perforation of the rectum, perforation of the bladder or perforation elsewhere in the intestines, and I don't think there could have been a happier termination than the one Dr. Worcester gave her.

Dr. Haven: I have seen in the last few years a good many cases of puerperal sepsis in the out-patient department of the Lying-in Hospital and in consultation. I have never done a cœliotomy for this form of peritonitis, and so far the patients have recovered. If you can diagnose the escape of pus through the tube in general septic peritonitis, there is no question that cœliotomy is the proper operation and the only one to be done. I think it is wrong to wait. If the woman is going to get thoroughly septic and you operate, then I think it is bad surgery, because cases that are thoroughly septic I think die almost without exception after operation. If you are going to operate at all, I think you should operate within the first few days, or let the woman recover or die without operation, because if you operate after a week or ten days after the woman is septic I think she is going to die anyway. In appendix operations, if you wait till the patients are thoroughly septic, they die anyway. It seems to me there are a great many cases of this form of sepsis, where the trouble is in the broad ligament, and extends possibly from the uterus or tube. You have a lot of small abscesses in the broad ligament. The majority of cases of that kind get well without operation in time; they run a high temperature, but recover after a time. It seems to me in operating upon these cases you are going to get into trouble, because the whole of the broad ligament is involved and riddled with small abscesses on both sides. If you can take the whole of it out, there is no question that that is the proper treatment; but it is true that these cases recover after a time and that the inflammation disappears and the broad ligament comes down to almost its normal shape and form. I have seen in the last two years two cases that illustrate this. One I saw in consultation three weeks after delivery, where there was a distinct cake on the right side, temperature 105°, pulse about 150. I saw her several times, and after several days the trocar was plunged into the mass and one drop of pus was evacuated, and no more. An incision was made down upon the mass and no more was found. We got into a mass of irregular shape and merely put in a piece of gauze and left it. She recovered after several weeks, and is now just as well as she ever was. There was very little drainage through the opening, and it was merely sustaining treatment.

Another case of the same nature which I saw a short time ago I saw sometime after delivery, when the patient was septic. She had a mass on the left side filling the left broad ligament, and she went through the same process exactly. This patient had trouble with one parotid gland, that is, she was generally septic when I saw her. In that case, although she had a local peritonitis, if we had operated we should have lost the patient I think; therefore, if you are to operate at all, I think you should operate within a few hours or days of the first symptom of peritonitis, otherwise do not operate at all. I believe in cases in which you can diagnose septic peritonitis you should operate; and it seems to me the case Dr. Worcester reported was a very fortunate one and that probably without an operation she would have gone on from bad to worse and very likely have died. The cases I have seen in the Lying-in Hospital have recovered, but they were in almost every case a very localized peritonitis or else septic endometritis, which recovered with curetting and drainage.

It seems to me there is one point to be spoken of, and that is, that repeated curetting is bad practice and that you only stir up a pus formation. It seems to me, if you curette the uterus when you see the patient, and perhaps three or four days later, you have done all you can in the line of curetting. You can wash out as much as you please.

Dr. Munro: I think Dr. Reynolds, if he had a case of purulent peritonitis from a perforated appendix, would say that the chances of recovery without operation were almost nil. I cannot understand how it is possible that purulent peritonitis from puerperal sepsis should stand any better chances of getting well; and these cases he reports of recovery from so-called peritonitis by curetting the inside of the uterus, I cannot understand that they are purulent peritonitis at all. It seems to me, it is entirely out of the question to drain a big cavity like the peritoneum, by scratching out a closed cavity like the uterus. There are cases of septic endometritis, but I do not believe it is possible they were purulent peritonitis. I think everybody knows that purulent peritonitis from perforated appendix or intestine or anything of that sort is almost inevitably fatal unless drained.

Dr. Reynolds: It is evident that I failed to make myself understood. What I want to say is, that given purulent peritonitis you cannot expect to have it get well by scratching out the inside of the uterus, but that I think there are very few cases in which the diagnosis of purulent peritonitis can be made with sufficient certainty to warrant a cœliotomy before the patient is practically moribund, in view of the fact that great numbers of cases which strongly resemble such a condition in its early stages are, in reality, cases in which the actual infection is circumscribed, and can be relieved by curetting, to an extent which permits the beginning infection of the peritoneum to be carried off by Tait's intestinal drainage.

Dr. Davenport: The discussion to be narrowed down to the points originally intended to be discussed would practically amount to this, whether puerperal septic peritonitis can, after it is once thoroughly established, be relieved by other means than by cœliotomy. In other words, as I understand it, Dr. Worcester says the saline treatment of peritonitis is of no value; and I suppose he would claim that where it apparently has been effectual those cases have not been cases of peritonitis at all. I am not sure that that does represent his position, but from his paper I gathered that that was so. I think it would be of value if those who are prepared to speak on this subject could limit their remarks to those cases where general septic peritonitis is undoubtedly present.

Dr. Reynolds: I said I do not think purulent peritonitis can be diagnosticated with certainty, and I think non-purulent peritonitis can be cured with saline cathartics — if there is a distinction to be made between purulent and non-purulent.

Dr. Worcester: I think it is only fair to this meeting to say that this is a continuation of a previous discussion, where, when I reported this case in preliminary fashion, Dr. Reynolds insisted that it was not a justifiable operation; and I have since watched my chance to lay the matter before a jury. I wish very much that we could have spent our whole evening upon the discussion of septic peritonitis. With regard to the treatment of septic endometritis, I suppose there is no question. But you cannot cure peritonitis by any treatment of the endometrium, neither can you drain the peritoneal cavity of septic material by scouring out the intestine. Puerperal septic peritonitis is not a myth. It is a very stern reality, and if Dr. Reynolds is unable to diagnosticate the trouble there is no use in discussing with him the treatment. I maintain it is possible to diagnosticate general peritonitis, and I insist that it is not possible without a cœliotomy to ascertain its cause. I further insist that without discovering its cause it is child's play to attempt its treatment, for the treatment is first the removal of the cause, whatever that be. If that is impossible, the next best thing is to render that cause inert, as innocuous as possible, by draining that part of the peritoneal cavity in which that gangrenous cause exists. Now, it seems to me, that some of the objections to my paper and my position are trivial. Dr. Reynolds takes me to task for saying that a tube once closed by purulent inflammation cannot carry septic material from the uterine cavity into the abdomen. I did not say that there was an open tube through which material could be shot. I said that it is easier to conceive of a previously damaged tube partaking of the septic inflammation of the endometrium, and then discharging its full contents into the uterus, than it is to conceive of the carriage of that septic material from the uterine cavity into the abdomen through a tube in good condition. Of course, after inflammation the tube is closed, and yet from the septic inflammation of the endometrium there is often a sinus leading directly from the uterine cavity through the uterine substance, through the broad ligament itself, and discharging its foul contents into the abdominal cavity; and it is easier, to my mind, to conceive of a pus sinus through a previously enlarged tube than through the healthy tissue of the uterine muscle and broad ligament. But whether it goes through the tube or through the sinus in the uterine substance and broad ligament it matters not. If septic material enters the abdominal cavity, there results a septic peritonitis whether it is possible for the attending physician to recognize it or not, and if a septic peritonitis obtains, the treatment of it is to discover its cause by a cœliotomy and to render that cause as inert as possible. Now, the treatment of that condition by salts is throwing away valuable time. Dr. Reynolds practically divides these cases into those where you cannot surely make the diagnosis, those that will die any way, and those that will get well by proper treatment of the interiors of the uterus and intestine. I do not propose, to-night, to discuss the treatment of cases where peritonitis does not surely exist; but as for that class of cases in which he objects to operative treatment, because there may be metastatic abscesses elsewhere, I submit that there are no metastatic abscesses elsewhere at the beginning of such cases. A metastatic abscess of the liver, for instance, is not the first sign of septic inflammation. And if such a case arises where there are metastatic abscesses through the body and no septic inflammation of the peritoneum, then I certainly would not pin my faith on a cœliotomy; but in such cases where the peritoneum is also surely infected it is not taking away the last chance, for Dr. Reynolds in that class gives no chance whatever.

Now I think, Mr. President, that it is high time for obstetricians to employ the advantages of modern surgery in the treatment of puerperal septic peritonitis. And although we sometimes hear that puerperal septicæmia does not exist in Boston, it seems that it does; and it seems as if Boston obstetricians should be quick to take advantage of any improvement in the treatment of any form of puerperal septicæmia, and to send it forth into the benighted regions. I now understand Dr. Reynolds's opinion still is, that, in this third case I report, the patient would have got well without operation. I am glad that that opinion is not generally shared. For if it is not the right thing to do a cœliotomy in such cases, if it is not so considered in Boston, it is not an easy matter to do it in the country. It is to the disgrace of surgery and to the disgrace of the domain of obstetrics that there has been so long held to be some peculiar sacredness about the lying-in period which would prevent common-sense being applied at such times. Now I ask you in the first place, if it is not considered generally possible to diagnosticate puerperal septic peritonitis; and in the second place, if that diagnosis having been established, I am not reasonable in asserting that the treatment of the affection consists, first, in the discovery of the cause, second, in removing that cause if it be possible, and third, if that removal be not possible, in draining the peritoneal cavity and so protecting the healthy part of the peritoneum by making that gangrenous cause as innocuous as possible.

Dr. Reynolds: I do not want to be quoted as saying that I cannot diagnose puerperal peritonitis, because I think I can. I said before, very carefully, that I could not diagnose the condition in which the peritonitis has become perfectly hopeless from one which I have seen recover rapidly, not after putting in salts and letting the patient alone, but after removing the cause of that peritonitis, par vaginam, and then using salts. Now the position I take is this: I believe that the great majority of cases of puerperal peritonitis originate from purulent infection of the endometrium and tubes, that in the vast majority of these cases the source of the infection can be removed with the curette, intrauterine disinfection, and subsequent discharge of the pus from the uterus, and that the cause, and source of supply, having been cut off, intestinal drainage is enough to do away with the product and I believe that this will cure the case unless it has advanced so far that the general peritonitis is itself a source of supply and the patient is practically moribund.

As regards the criticism I made in a perfectly friendly way of Dr. Worcester's case, with the reason why it seems to me that that case might well have recovered without cœliotomy if she had been subjected to thorough uterine disinfection [Dr. Worcester: She was]; if he had thoroughly disinfected her and waited long enough to see the result, — I am perfectly willing to admit that it was one of the rare cases where a cœliotomy is necessary.

Dr. Worcester: There was not the slightest débris in the wash-water.

Dr. Reynolds: That there are occasional cases in which the infection spreads through the lymphatics into the peritoneal cavity is, I think, as undoubted, as that there are occasional cases in which the secondary infection appears first as a metastatic abscess in some other organ, by means of what has been known for many years, and is, I think, believed in to-day, as the venous spread of sepsis. I believe that there are some cases in which the metastatic abscesses and general septic infection appear as early as the peritonitis, and that these cases can easily be distinguished, are hopeless, and not cases for cœliotomy. My position is this: taking one hundred cases in which any competent set of men would diagnose septic peritonitis, I would prefer to subject that set of a hundred cases to thorough local disinfection, including the use of the curette down to sound tissue in the uterus, and the subsequent use of salts, to subjecting the same number of cases to cœliotomy. There would be deaths by both methods, but I think that the operative deaths would preponderate. I think the cases in which cœliotomy is necessary are very rare, that it is an operation of last resort and won't save many women. Dr. Worcester speaks of that as an experience of Boston men alone. I would like to inquire of the President whether it is not his remembrance that at the meeting of the American Gynæcological Society in Brooklyn, last autumn, it was the general view that cœliotomy had been done too widely in puerperal peritonitis, and that it had better be restricted rather than encouraged, restricted to cases in which there was tubal trouble that could be removed by excision of the tubes.

Dr. Davenport: As I remember it, it was in the main that, where the peritonitis had become general and had infected the peritoneum above the pelvis that cœliotomy was a hopeless operation, but that where it was still localized it was of value; and if I remember rightly there was an opinion expressed that in many of these cases of puerperal peritonitis the trouble was pre-existent to the labor. They were cases of pus tube, usually on one side, which had existed previous to the labor and had either from mechanical bruising or from extension of the inflammation from the interior of the uterus become active and demanded cœliotomy just as it might have been demanded outside the puerperal state from any cause which started up the inflammation. It seems to me there is practically a unanimity of opinion as to the justifiability of performing cœliotomy in certain cases; just how far that right would extend is a matter in dispute. I think Dr. Worcester would enlarge it and Dr. Reynolds would rather narrow it down. I think Dr. Reynolds has stated that there are cases in which he would advocate and perform cœliotomy, but they are rare; and Dr. Worcester's position is that as soon as he had fairly established a diagnosis of septic puerperal peritonitis he would advise an operation without waiting.

Dr. Strong showed a specimen of

LYMPHANGIECTASIS OF BOTH OVARIES,

removed from a patient about eighteen weeks after confinement.

The case before operation was considered to be one of purulent salpingitis. The history of the patient subsequent to her confinement bore out this diagnosis. Her physical condition also substantiated it. She was bedridden, weak, anæmic, almost pyæmic, with fluctuating temperature. Large fluctuating masses were felt on the right side in the position of the tube, and on the left side behind the uterus, filling up nearly the whole of Douglas's cul-de-sac. It was also evident that there were many adhesions. At the operation, however, these fluctuating masses were found to be ovaries, which I show you to-night. There are spaces in the connective-tissue widely dilated by collections of lymph. These ovaries which now you see — the left about the size of a mandarin, the right about the size of a very large English walnut — were nearly double the size when removed. The stroma was very much thickened; and on section the fluid gushed forth as if many cysts had been cut through; but it is evident, as you see, that these spaces were not distinct cystic enlargement.

The patient's convalescence was uninterrupted; and since the time of the operation she has gained steadily, and is now perfectly well. I submit the report of the specimens, as given by Dr. W. F. Whitney, the pathologist of the hospital.

"The outer surface of specimens of ovaries were dense and fibrous. On section, numerous small cysts were seen, and the corpuscle tissue marked by numerous slit-like openings, from which exuded a clear fluid. Microscopic examination: the outer layer was thickened; the layer containing the follicles was considerably increased in size and dense, due chiefly to increased stroma in the central part, which was filled with markedly elongated openings, without distinct wall or lining, that is, dilated and not interspacious. Diagnosis lymphangiectasis of the ovarian stroma.

Dr. Strong also showed

FOUR SPECIMENS OF UTERI.

Three of them were removed for malignant disease, which had been ingrafted upon, or at least, was coincident with fibro-myomata. These patients had with one exception recovered. The cases were all desperate, and did not afford an opportunity for ordinary vaginal extirpation or for high amputation, owing to the presence of cysts, size of uterus, and senile atrophy of the vagina.

The fourth specimen was from a woman who had had cancer removed from each breast, and who had been twice curetted, with a return of a malignant disease. Microscopic examination of the uterus and of the curetting failed to show anything more than hyperplastic endometritis. The operation was performed solely on the clinical history. It was very unfortunate that the woman was one of the class of bleeders; and although the peritoneum was left perfectly dry, there was oozing everywhere, from which she had not the strength to recover.

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BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, March 6, 1893, Dr. S. G. Webber in the chair.

Dr. F. E. Cheney read a paper on

ACUTE BILATERAL OPHTHALMOPLEGIA EXTERNA AND INTERNA.[1]

Dr. O. F. Wadsworth: I do not think I can add anything to what Dr. Cheney has said. The case is a very interesting one. The explanation given of an inflammatory exudation involving the dura about the sphenoidal fissure is probably the best to explain all the symptoms, the exophthalmos, the œdema of the conjunctiva and lids, and the paralysis of the muscles. I do not remember to have seen such a case where both eyes were involved. I recall a case in which there was an exophthalmos with œdema and paralysis of all the muscles and optic neuritis and also paralysis of the sensitive nerves, apparently from a gumma at the back of the orbit. It was in a syphilitic patient and the affection yielded to specific treatment. I recall also the case of a school-teacher, whom I saw a number of years ago, with a whizzing noise in the head, audible subjectively and objectively, for which he consulted Dr. Green and myself, and which was persistent for a good many years. It was, perhaps, not so marked as this. He returned to me after four or five years when he had had a sudden blurring, apparently due to a hæmorrhage into the back part of the orbit, for there was some exophthalmos and paralysis and extensive ecchymosis of the conjunctiva and lids. The noise had persisted.

Dr. J. J. Minot: I have very little to add. I never have heard, before, a murmur in such a situation. It seems to me that Dr. Cheney's explanation is reasonable, as explaining the symptoms of the eye trouble and also the murmur. Whether the murmur is arterial or venous I cannot say. Such murmurs are not common, and I have found almost no reference to them. They have occasionally been heard in a few cases of aneurism inside the skull, where the symptoms have been very variable and sometimes very slight. They are very commonly heard in children during the early years of life and then they disappear. The cause of them in children is unknown, though several explanations have been offered. They can be conducted from the heart up to the base of the skull, but so far as I know, not beyond that point. This you cannot hear anywhere except on the skull. There are no abnormal sounds, either in the heart or in the peripheral arteries or veins. The patient has a rapid heart and a polyuria. What that has to do with the murmur I do not know. Polyuria has been noticed a number of times in connection with paralysis of the sixth nerve, but a nuclear lesion of the nerve would not explain the murmur. I have ascultated the skull of a number of persons since I saw this patient to see if I could hear anything, I did not, except in one, where I heard the respiratory murmur perfectly all over the skull.

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[1] See page 591 of the Journal.

Dr. B. Joy Jeffries: I never have seen a double case like that and it is very interesting. In listening to the sound, I naturally ask, how much the patient has been affected by it. As I understand, she has become so used to it that it does not trouble her, which to me is a wonder. I also understand that the question of syphilis is positively excluded.

Dr. Fitz: It seems to me that the theory of meningitis would hardly explain the suddenness of the attack and it has occurred to me that the latter might be rather the result of hæmorrhage, a view which would be favored by the improvement which has occurred. An acute meningitis, independent of trauma, caries, tubercular epidemic influences or from some obvious external source, would be so unusual that the theory of a syphilitic origin should demand every evidence in its behalf.

Dr. Wadsworth: I should like to ask if a hæmorrhage which would produce so extensive paralysis of the ocular nerves on both sides and cause no symptoms of intracranial pressure would not be rather rare.

Dr. Fitz: I referred not to intracranial hæmorrhage, but to intrameningeal.

Dr. Wadsworth: In consideration of the formation of the base of the skull would not it be difficult for hæmorrhage to pass over. It did not seem to me it was a suppurative inflammation that caused the trouble.

Dr. Fitz: The only forms of inflammation of the dura which I am familiar with are those which produce a membrane, often vascular, in which the vessels frequently rupture and in which the free surface of the dura is involved, and those where there is a chronic thickening of the membrane or a suppurative inflammation extending from the bone. Hæmorrhagic inflammation of the dura, except in those cases where the blood-vessels rupture and considerable hæmorrhage arises, or where watery fluid accumulates, does not give rise to pressure symptoms.

Dr. Wadsworth: I have never seen a double case just like this. I have seen one or two cases of temporary and sudden attacks of ophthalmoplegia, with a certain amount of exophthalmos, without any other symptoms whatever, in which these symptoms all passed off and there was no reason to suppose anything but an orbital affection. Certainly the position of a single lesion which would produce all the train of disturbances present in Dr. Cheney's case, is best placed at the sphenoidal fissure. In one case which I recall there was no affection of the sight, except so far as loss of accommodation involved change. The interior of the eye was healthy, although there was marked exophthalmos which had come on within two or three days, and almost entire immobility of the eye. In that case there was absolutely no other symptoms to be got at, and the condition subsided within a very few weeks.

Dr. S. G. Webber: It is a very curious and interesting case and except for the symptoms about the eye, the œdema and the murmur, I should think that the lesion might be located further back in the nuclei of the nerves in the pons, but there is no likelihood that a lesion of the nuclei of the nerves would produce such symptoms. Acute ophthalmoplegia may be a purely local lesion and it is accompanied very often with polyuria. The centre in the brain, the irritation of which causes polyuria, being situated near the nucleus of the sixth nerve, sometimes diabetes is caused. But in those cases it is almost always external and not internal ophthalmoplegia. It may pass off in three or four weeks. Part of it may pass off in part, some of the paralysis remaining permanent, or it may led to death; but as I said in those cases I do not remember hearing of any cases where there was the peculiar condition of the globe of the eye. A tumor may produce a sudden paralysis, the tumor growing gradually without symptoms, until, for some reason, the pressure is sufficient to produce the symptoms. I have seen one case of that kind where the paralysis of the external rectus came on suddenly, the paralysis of the internal rectus occurring later. The woman had had a cancer removed from the breast previously and probably the tumor was due to cancer. The fifth nerve was affected in addition to the nerves of the eye and on the side affected there was a diminution of the size of the arteries in the eye as compared with the other side. There was no optic neuritis. Syphilitic lesions are the most common causes of paralysis of these nerves and the paralysis may come on suddenly. I have had a few cases where the final paralysis was sudden, the person having had headache previously and not being in full health. In the case reported to-night, if there is no syphilis, the lesion and its location seems puzzling. If there was hæmorrhage I should think the chances were there would have been a fatal result. I see no reason why the bleeding should cause just this paralysis and then stop. Hæmorrhages at the base of the brain are usually fatal. If the hæmorrhage was from a small vessel the pressure would stop the bleeding before there would be sufficient pressure to produce paralysis. If the vessel was large I should think the patient would have died. The murmur would rather indicate a pressure from a tumor or a limited meningeal thickening as is caused by syphilis.

Dr. M. H. Richardson described a case of

AMPUTATION OF THE FOOT FOR ANKLE-JOINT DISEASE.

This foot, which I amputated a few days ago, in a man of twenty-nine, shows the folly at times of trying to save a limb when the ankle-joint is extensively diseased. The affection of the ankle, which had resulted in such marked and disabling deformity, began at the age of three, after accidentally falling from a high step and striking against a stone. He has been very lame ever since, and has suffered more or less constantly from pain. Although the family history was good, the disease had evidently been an extensive joint-tuberculosis, which had resulted in a very great deformity of the right foot and ankle. Deeply adherent scars indicated the previous inflammation and discharging sinuses by which the astragalus and os calcis had disappeared. The remaining bones were considerably modified, so that most of the weight of the body was borne upon the inner aspect of the foot under the distal extremity of the tibia, where there was a large, thick and tender callus. Walking was possible, though painful, by means of a cane or crutches and a skilfully padded shoe. There was no prospect, by any method of treatment except amputation, of improving the gait and of making it easy to stand or walk. Many kinds of apparatus had been invented, but each had proved clumsy, painful and unsatisfactory. I advised amputation, which was performed in the dry, aseptic method several days ago. The wound healed by first intention, and the patient was discharged in nine days. Mr. Cushing, of the Medical School, has made a beautiful dissection of this specimen. The astragalus and os calcis have disappeared almost entirely. The callus upon which the weight of the body rested was directly under the modified end of the tibia and was extremely tender and painful, even in standing. The peroneus longus and brevis could, with difficulty, be made out, being merged into the tissues about the external malleolus. The tendo-Achillis was inserted into the skin and subcutaneous cicatricial tissue, the os calcis having disappeared entirely. Over the prominent pressure-points large bursæ had developed. The interesting question which this specimen raises is, whether in extensive ankle-joint disease, even in early life, it is worth while always to attempt to save the foot. There is no doubt that a useful limb results in many cases, but in a few the local conditions are such that a satisfactory issue cannot reasonably be expected. After extensive destruction of bone-substance, where the astragalus and os calcis have disappeared, as in this case, conservative treatment should be suspended as soon as it is evident that, at best, there will be great deformity and hopeless disability. Amputation under such circumstances seems the most rational course, not because much useless suffering will be prevented, but the child will become very expert in the use of an artificial limb by the time he comes to maturity.

DERMOID CYSTS OF THE OVARIES.

Dr. W. L. Burrage: I have here dermoid cysts of both ovaries from a case of attempted criminal abortion. The patient thought that she had produced an abortion, but the facts would tend to show that she was not pregnant. At all events, no corpus luteum, and in fact, no ovarian tissue has been found by either Dr. Councilman or Dr. Whitney, who kindly examined the specimens. She is the daughter of a patient on whom Dr. Mixter operated last summer and removed a cyst with twisted pedicle. She is twenty, married four years, and had a child two years ago, never pregnant at any other time so far as she knows. Catamenia very irregular; often skipped a month. She was perfectly well and healthy, except troubled with an irritable stomach and rather large abdomen from the time of her labor up to January 27th, when she got an abortionist to pass a catheter into the uterus. She had then skipped two periods, and had much nausea. It was of a Friday afternoon. That evening she had some pain and profuse flowing, and fainted away. She took out the sponge he had put in the vagina. The following day (Saturday) she called in a doctor, who tried to remove the catheter. He had a good deal of difficulty in getting it out. Sunday, she had two severe hæmorrhages, and was much weakened. She developed symptoms of sepsis almost at once, according to the physician who saw her and by whom she was sent to St. Elizabeth's Hospital. Temperature, 103°. I saw her there last Friday, March 3d, with Dr. Johnson; and we found the woman with every appearance of sepsis, blanched, and with feeble pulse. There was an abundant vaginal discharge, bloody, thick, mucoid, purulent. Examination of the abdomen showed a tumor, size of a musk-melon, to the right of the umbilicus. Over the tumor, percussion was flat, and in the flanks tympanitic. Examination by the vagina was rather unsatisfactory, because she was very sensitive. I operated on Saturday last, and on preparing to curette the uterus I found that I could slide the sound in four and a half inches. On bimanual examination, I thought I felt the fundus of a small uterus below the tumor and to the right. Putting in the sound again, it went five inches, and I felt sure there was perforation of the uterus. I curetted quickly and put in iodoform gauze. A moderate amount of tissue obtained by the curette was unfortunately lost. Then I opened the abdomen and came to this large glistening cyst wall, found it adherent to a large portion of the omentum on the right side and thick adhesions coming down in front on the bladder so that they formed a little pocket over the uterus. My sound on going into this pocket had produced fresh hæmorrhage. The gauze I had put in the uterus was presenting in the tear on the anterior surface of the fundus of the uterus, five-eighths of an inch in length, extending diagonally downward and inward from the right corner. The edges were oozing rather freely. The uterine structure was very soft, and had the feel of septic tissue. The cyst held about six quarts of mucilaginous fluid, and has, as you see, several smaller daughter cysts of cheesy material and hair and also a piece of bone about two inches long. I closed the rent with a continuous suture of No. 1½ catgut, and then brought together the peritoneum over it with a Lembert stitch of the same material. I found the pelvis filled with large blood-clots, some fresh and some old. The tumor had prevented any blood from getting above the pelvis. Then I removed the large tumor on the left side by the ordinary method, and this smaller right ovary, size of a duck's egg, with its cheesy and hairy smaller cysts, washed out the peritoneal cavity thoroughly with hot salt solution, and closed it up. No drainage. The operation took about an hour, and she was in pretty good condition when put to bed. She has been doing very well since then.[2]

The early appearance of the hæmorrhage from the vagina, a few hours after the catheter had been inserted, and the difficulty that the doctor experienced in removing it would lead one to believe that the abortionist pushed the instrument — probably with a stout stilette — through the fundus, that the presence of the tumor and the adhesions prevented extravasation of blood among the intestines, and that most of the hæmorrhage was into the cavity of the uterus.

Professor Virchow has communicated to the International Medical Congress, in reference to its proposed meeting at Rome, his opinion that a cholera epidemic is not likely to break out in Germany this year.

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[2] April 13th. The patient left the hospital in three weeks, after an uninterrupted convalescence.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting at Buffalo, N. Y., May [illegible], and June 1, 1893.

(Continued from No. [illegible], page [illegible].)

FIRST DAY. — AFTERNOON SESSION.

HYPERTROPHIES AND DEGENERATIONS OF CICATRICES AND CICATRICIAL TISSUES,

by **Dr. J. Collins Warren**, of Boston.

The evolution of cicatricial tissue was first traced. Lymphatics are not usually found and nerves are rarely seen in scars. Scars rarely disappear entirely. They usually remain as a fine white line, or, if the scar has stretched, as a band. Scars grow in proportion to the rest of the body. This point is not sufficiently borne in mind when performing operations on children in exposed portions of the body.

The most striking peculiarity of scar tissue is its tendency to contract. During the healing process this acts in a beneficial way. It is also the cause of the most marked deformities. This contraction of cicatricial tissue is not due to any specific contractible quality in the tissue itself but to the absorption of new formed tissue. Scars are not ordinarily painful, but may become the source of pain by adherence to structures which are sensitive.

Among the most common pathological condition observed in scars is that hypertrophic condition known as keloid. There has of late years been a growing feeling that keloid tumors spring from cicatrices more frequently than has been supposed. True keloid is found on the chest, and is an extremely rare form of growth. It seldom disappears. False keloid may develop in almost any part of the body.

Cancer not infrequently forms in cicatrices, usually after the cicatrix has existed several years.

Calcareous degeneration of a cicatrix has been reported.

A common form of complication in the life-history of scars is suppuration, which may be due to re-infection or to the awakening of spores which have long been dormant. A most common form of relapse is due to tuberculosis.

A description of the cicatrix which forms between the Tiersch grafts and the subjacent tissue was given.

Every effort should be made to limit the development of scar tissue. Animal sutures should be used if they are to be buried. Very superficial sutures should be used freely. The checking of the superabundant growth of granulations has been strongly recommended as the contractibility of the cicatrix is largely dependent upon the amount of granulation tissue which becomes organized. For projecting scars, compression has been recommended. This will often relieve the redness as well as the elevation. Unna advises friction with sand in the treatment of depressed scars. Pigmentation of scars from gunpowder may be relieved by scrubbing with a nail-brush under ether. In older cases the particles of powder may be removed by the punch devised by S. J. Mixter for this purpose.

The treatment of true keloid is discouraging on account of the persistence with which it returns. If excision is attempted, the incision should extend one or two centimetres beyond the limits of the disease, and extend to the muscular aponeurosis. Compression is recommended by many writers for the treatment of false keloid. As keloid is a connective-tissue structure, it is possible that an inoculation with the virus of erysipelas might produce absorption. Whether such a powerful remedy would be justifiable is doubtful. Tiersch grafting may be employed with advantage to broad and flat cicatricial keloids. A case was reported in which this method had been employed; and thus far (several months) there had been no return of the tumor.

Dr. George R. Fowler, of Brooklyn, described the pathological anatomy of cicatricial and spontaneous keloid. The fact that keloid more frequently follows wounds in which there has been much suppuration suggests a microbic origin. In regard to epithelioma developing in cicatrices, it was noted that it has a tendency to spread upon the surface, and rarely pass into the depths of the tissues. In the treatment of this condition there should be early and radical extirpation.

Dr. L. McLane Tiffany, of Baltimore, said that in the Southern States keloid was exceedingly common; but he knew of it only as a cicatricial disease. He had never seen a case of so-called non-cicatricial keloid. In the negro the disease is prone to undergo retrogressive changes after the age of forty or forty-five years. The affection rarely occurs before the age of eight or ten years. In the white race it may be confidently expected that keloid will go away or not much progress after the age of twenty-five years. The case of a girl, who at the age of seven years was severely burned on the face, breast and arm, was reported. She was seen by the speaker eighteen months after the accident. At this time the scar was bright scarlet and half an inch in thickness, resembling a heavy plate of cartilage. The advice was to let it alone. Twelve years later there was a white, perfectly mobile scar. The speaker was inclined to think that operative measures in young persons, either white or colored, are unwise.

Dr. M. H. Richardson, of Boston, remarked that in cases of abdominal incision it was important to bring the parts together so as to secure union by first intention. In open wounds that heal by granulation there is a great tendency to hernia.

Dr. J. Collins Warren, in closing the discussion, said that the point which had impressed him, was the absence of contractility in the scar tissue which formerly was believed to exist. It is absorption that produces the pulling. The scar tissue itself yields before pressure. Therefore the importance of accurate coaptation, not only to make the scar small, but to have no scar at all, and have regeneration instead of repair.

SURGERY OF THE GALL-BLADDER,

by **Dr. M. H. Richardson**, Boston.

The paper was based largely upon personal experience. While the field is most brilliant and promising, anatomical and pathological considerations give it distinct limitations. It is seldom possible to cure or even relieve malignant diseases involving the gall-bladder or gall-ducts. With a few exceptions, operations are of questionable value in most cases of chronic obstruction to the bile flow from causes other than stone.

A gall-bladder may be much enlarged, its functions may be entirely destroyed, and it may contain a large number of stones, without causing any symptoms. While it is justifiable to relieve this condition of simple dilatation to avoid possible future complications, interference is not essential in the absence of pain and of local and constitutional disturbances.

Impactions of the common duct result in universal jaundice, which may become a pronounced and fatal cholæmia. The gall-bladder and biliary passages become distended. Perforation frequently occurs, with escape of bile into the peritoneal cavity and death; or a spontaneous cure follows rupture into the intestine, the stone remaining fixed in the canal. At other times the stone makes its way by ulceration into the intestine, and permanent recovery takes place.

Operations on the gall-bladder and biliary passages should not be undertaken until every means at our command to make a diagnosis has been exhausted. Unnecessary explorations should be avoided. In some cases the presence of malignant disease or other fatal organic disease can be shown clearly enough to justify a policy of non-interference. The anatomy of the region of the gall-bladder was carefully discussed, and illustrated by diagrams. The point recommended for exploratory incision by the author is just to the right of the rectus muscle, opposite the tip of the cartilage of the tenth rib. Here the abdominal wall consists chiefly of skin and fascia. An inch and a half opening is sufficient. If subsequent procedure is required, the opening may be continued upwards along the border of the rectus muscle and outwards parallel to the border of the ribs.

Operative Surgery of the Gall-Bladder.— Gall-stones limited to the gall-bladder being the most frequent occasion for surgical interference, cholecystotomy is the most common of the surgical procedures. In the normal condition of the gall-bladder it is a simple operation. The gall-bladder may be sewed into the wound and incised at once, or opening may be deferred a day or two. The so-called ideal operation, where the opening in the gall-bladder is immediately closed, is the preferable one where it is practicable. When the gall-bladder is contracted so that the fundus cannot be brought in contact with the abdominal wound, immediate incision, with drainage or total extirpation, are the alternative. Unless we extirpate contracted gall-bladder, drainage must be resorted to. For drainage, the glass or rubber drainage-tube, with gauze packing for leakage around it, answers admirably.

Cholecystectomy. — Extirpation is desirable in certain cases. This procedure should not be attempted unless the gall-bladder can be easily separated from adjacent structures. Besides lessening danger at the operation, it shortens convalescence; yet even after extirpation, drainage and gauze tamponage is necessary.

Operations upon the Cystic, Hepatic and Common Ducts. — There are few conditions of the hepatic duct which admit of operative manipulation. In health it cannot be catheterized. When dilated, it may be explored through the gall-bladder. Stones impacted in the duct may at times be crushed; at other times incision is required. The cystic duct after apparent obliteration becomes pervious at times as soon as the gall-bladder is opened. This must be explained by subsidence of inflammatory stenosis caused by long-continued irritation of the stones.

Operations upon the hepatic and upon the common duct are indicated when stones become hopelessly impacted in either. The incisions may be closed with suture at times, but oftener this is impracticable. A rubber or glass drainage-tube should then be placed in the duct, with siphonage, and the whole protected with gauze. In no case of operation upon the biliary passages has death followed remotely or immediately as the result of biliary obstruction, and in no case had the author observed septic infection from this cause.

Cholecystenterostomy. — In chronic organic, non-calculous obstruction, we must expect chronic and fatal cholæmia, unless we can provide artificially for the escape of bile, either externally or internally. Anastomosis between the gall-bladder and duodenum is preferable, when possible. Deviation of the bile-flow into the colon seems compatible with health, and is oftener more feasible than the duodenal route. The anastomosis may be made by Senn's plates, or Murphy's buttons, or mechanical devices may be omitted altogether. The essential point is to have the opening large enough to secure permanency. The contraction after anastomosis must be practically complete to arrest the natural flow of the bile.

If the gall-bladder cannot be used for anastomosis, the common duct may be isolated and inserted through a slit into the duodenum.

Operations upon the common duct by way of the duodenum may be practised under very exceptional circumstances.

Obstructions in the hepatic duct above the point of junction with the cystic, admit of no relief, except occasionally by the formation of a fistula, although theoretically the duct above the constriction, if long enough, might be inserted into the gall-bladder.

The prognosis after simple exploration is good, although it must be remembered that there is considerable mortality in advanced organic disease.

After cholecystotomies, extirpations and operations upon the ducts, recovery takes place in a very large proportion of the cases. In fourteen cases, including all methods of gall-stone extraction, the author had had two deaths; one from an avoidable sepsis, and the other from hæmorrhage. In six exploratory operations, there were two deaths, both cases of cancer.

In most of the author's cases there had been a marked and long-continued jaundice. In none had hæmorrhage been an important factor at the operation, and in but one had there been secondary hæmorrhage. He believed that hæmorrhage is a real danger in cholæmia, but that its frequency and importance have been exaggerated.

DR. J. EWING MEARS, of Philadelphia, referred to the occurrence in gall-stone obstruction of symptoms simulating malarial fever, and reported one case in which this was present. In this case, there was impaction of the stone in the common duct. This was pushed forward into the duodenum, and the removal of the obstruction was shown by the escape of intestinal gas through the gall-bladder.

In contracted gall-bladder, where glass and gauze drainage is required, he would be inclined to apply ligature to the duct and allow the gall-bladder to remain in place. In that way we avoid the danger of attempting to remove the contracted bladder. Attaching of the gall-bladder to the intestine is indicated in those cases when cholecystotomy, or cholecystectomy or ligature of the duct cannot be performed.

DR. WM. H. CARMALT, of New Haven, said that in 1886 he had performed the operation spoken of as ideal cholecystotomy. The patient had previously been operated upon by a distinguished foreign surgeon for floating kidney. The speaker operated under the impression that the case was one of movable kidney but found the gall-bladder distended with bile from impaction of a gall-stone in the cystic duct. The stones were removed and the wound in the gall-bladder closed, and the organ returned to the abdominal cavity. The patient made a perfect recovery.

Dr. T. A. McGraw, of Detroit, referred to the great liability of the opening made in anastomoses between the gall-bladder and intestine or between intestine and intestine to contract. This he thought was due to separation of the mucous surfaces with the formation of cicatricial tissue and subsequent contraction. He described a new method which he had devised to overcome this difficulty and exhibited specimens from animals illustrating the results obtained. Instead of making a simple slit in the gall-bladder, flaps are made and turned back and the peritoneal surfaces united. Then these flaps are inserted into the incision in the bowels and the edges of the gall-bladder incision secured to those of the incision in the intestine. There is thus a projecting ring of mucous membrane through the intestinal opening.

Dr. T. F. Prewitt, of St. Louis, reported several cases of affection of the gall-bladder and biliary passages in which he had operated. He was surprised that the extravasation of bile was not followed by more serious consequences than had been detailed. Another striking fact is that when the bile escapes around the tube it is so easily prevented from further extension by the gauze. In one case he also had operated for supposed floating kidney and found a distended gall-bladder. He then closed the lumbar incision and opened the gall-bladder through the anterior abdominal wall. A stone was found impacted in the cystic duct. This could not be readily dislodged; and as the condition of the patient did not warrant prolonged operation, a fistulous opening was made. Subsequently a second operation was done, with the view of getting rid of the stone. It could not be crushed, and needles had no effect upon it. It was finally removed piecemeal with the curette.

Dr. Stephen H. Weeks, of Portland, Me., reported a case of cholecystotomy which he had recently performed. The gall-bladder was found contracted to a very small size. It was incised and a rubber drainage-tube, with gauze packing, introduced. The condition of the patient, which before operation was critical, at once began to improve.

Dr. DeForest Willard, of Philadelphia, exhibited a number of gall-stones and the gall-bladder removed seven weeks ago. The gall-bladder was removed on account of suspected malignancy. Since operation the patient had greatly improved, having gained thirty or forty pounds in weight. There was one stone lodged in the duct, but this was gently forced into the duodenum.

(To be continued.)

An exchange publishes the following bill-head of a doctor in Kansas: "A prompt settlement of this bill is requested. If bills are paid monthly a discount of ten per cent. is allowed. Bills not paid monthly will be passed to my attorney for collection. If you pay your doctor promptly, he will attend you promptly, night or day, rain or shine; while your slow neighbor suffers and waits, as he made the doctor wait, and while he is waiting the angels gather him in."

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SOMATIC CELLS *VS.* REPRODUCTIVE CELLS.

Professor Weismann has evolved a remarkable biological doctrine of reproduction and heredity, which has a physiological interest, and which, despite the fact that it is inherently incomprehensible, has found wide acceptance among biological authorities.

This is not the place to state this theory in its completeness; but it is well known that Weismann denies the hereditary transmission of acquired characters (a denial which physicians hear with incredulity); and he alleges a fundamental distinction of nature between the "somatic (or body) cells" and the "reproductive cells." They are described as respectively mortal and immortal, in the sense that the somatic cells are limited in their powers of multiplication while those of the other class are unlimited. It is contended that this is due to inherent unlikeness of nature.

The venerable philosopher of evolution, Herbert Spencer, who has written profoundly on these questions, and the whole trend of whose theories Weismann's speculation runs athwart, has published in the *Contemporary Review* for May, 1893, an article in which he advances important facts against the teaching of Weismann; to this article we call attention.

Professor Weismann affirms that death is not a primary necessity, but that it has been secondarily acquired as an adaptation.

To this Spencer replies that Weismann has overlooked a universal law of evolution — not organic only, but inorganic and superorganic, which implies the necessity of death. The changes of every aggregate, no matter of what kind, inevitably end in a state of equilibrium: suns and planets die, as well as organisms. The process of integration which constitutes the fundamental trait of all evolution, continues until it has brought about a state which negatives further alterations, molar or molecular — a state of balance among the forces of the aggregate and the forces which oppose them. In so far, therefore, as Weismann's conclusions imply the non-necessity of death, they cannot be sustained.

"There is," he says, "no proof of the alleged contrast between the immortal protozoa and the mortal metazoa; the facts go to show that in the case of the former (which multiply by fission), occasional conjugation is in all cases essential." With regard to the other term of the antithesis — the alleged inherent mortality of the somatic cells — he shows that this proposition is no more defensible than the other, and adduces (among several) the instance of the *Eloidea Canadensis*, introduced (probably with timber) in 1847, and which has since spread over nearly all England. The plant is diœcious, and only the female exists there. Beyond all question, this vast progeny of the first slip or fragment introduced, now sufficient to cover many square miles, is constituted entirely of somatic cells, and this cell-multiplication and consequent plant growth shows no signs of decrease. "Hence, as far as we can judge, these somatic cells are immortal in the sense given to the word by Weismann; and the evidence that they are so is far stronger than the evidence which leads him to assert immortality of the fissiparously-multiplying protozoa."

This endless multiplication of somatic cells has been going on under the eyes of numerous observers for more than forty years.

The mortality of the somatic cells constituting the mass of the human body is, according to Weismann, shown by the decline and final cessation of cell-multiplication in its various organs. Spencer applies the same test to the reproductive organs, and finds "that the multiplication of these last comes to an end long before the multiplication of the others (the bile-cells, the epithelial cells, the gastric cells, etc.)" In a healthy woman, the cells which constitute the various active tissues of the body continue to grow and multiply for many years after germ cells have died out. If similarly measured, then, these cells of the last class prove to be more mortal than those of the first class.

Perhaps this may be regarded as not a fair statement of Professor Weismann's meaning. As described by him, absence of death among the protozoa is implied by that unceasing division and sub-division of which they are said to be capable. Fission continued without end is the definition of immortality he speaks of. Apply this conception to the reproductive cells in a metazoon. The immense majority of them do not multiply without end; with very rare exceptions, they die and disappear without result, and they cease their multiplication while the body as a whole lives. The condition under which these exceptional ones preserve a qualified form of existence is that instead of one becoming two, two become one. A member of a series A and a member of a series B coalesce and so lose their individualities. Each series ends, and there is initiated a new series differing more or less from both. Thus the assertion that the reproductive cells are immortal can be defended only by changing the conception of immortality otherwise implied.

Even apart from these last criticisms, we have clear disproof of the alleged inherent differences between the two classes of cells. Among animals, the multiplication of somatic cells is brought to an end by sundry restraining conditions; but in various plants, when these restraining conditions are absent, the multiplication is unlimited. It may indeed be said that the alleged distinction should be reversed; since the fissiparous multiplication of reproductive cells is necessarily interrupted from time to time by coalescence, while that of the somatic cells may go on for a century without being interrupted.

But the most conclusive disproof of Weismann's doctrine, that the reproductive cells are independent of, and uninfluenced by, the somatic cells, is furnished by certain strange physiological facts, as the following, cited from "Flint's Physiology":

"A peculiar, and so far inexplicable, fact is, that previous pregnancies have an influence upon offspring. This is well known to breeders of animals. If pure-blooded mares or bitches have been once covered by an inferior male, in subsequent fecundations the young are likely to partake of the character of the first male, even if they be afterwards bred with males of unimpeachable pedigree. What the mechanism of the influence of the first conception is, it is impossible to say, but the fact is incontestable. The same influence is observed in the the human subject. A woman may have by a second husband children who resemble a former husband, and this is particularly well marked in certain instances by the color of the hair and eyes. A white woman who has had children by a negro may subsequently bear children to a white man, these children presenting some of the unmistakable peculiarities of the negro race."

Mr. Spencer gives numerous, apparently well-attested instances which bear out this statement of Professor Flint, which, if it may be regarded as substantiated, shows, beyond all question, that during gestation, "traits of constitution inherited from the father, produce effects upon the constitution of the mother" (somatic cells and reproductive cells), and that these communicated effects are transmitted by her to subsequent offspring.

Thus, according to Mr. Spencer, "we are supplied with an absolute disproof of Professor Weismann's doctrine that the reproductive cells are independent of and uninfluenced by the somatic cells; and there disappears absolutely the alleged obstacle to the transmission of acquired characters."

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MEDICAL NOTES.

CHOLERA. — During the first week in June epidemic cholera appeared at Mecca, and increased rapidly. Last year, this hole of pestilence escaped; but it will be remembered that in 1891 faithful Mohammedans died of the disease by the tens of thousands. In France, where since the outbreak at L'Orient and

Quimper in April the reports have been encouraging, until the past week cases have been discovered in Toulon, Cette and Narbonne.

American Surgical Association. — At the recent meeting of the American Surgical Association, the following were elected as the officers for the ensuing year: President, Dr. J. Ewing Mears, of Philadelphia; first Vice-President, Dr. Roswell Park, of Buffalo; second Vice-President, Dr. Lewis S. Pilcher, of Brooklyn; Secretary, Dr. J. R. Weist, of Richmond, Ind.; Treasurer, Dr. John B. Roberts, of Philadelphia; Recorder, Dr. DeForest Willard, of Philadelphia; Member of Council, Dr. J. Collins Warren, of Boston; Chairman of Committee of Arrangements, Dr. L. McLane Tiffany, Baltimore. The following were elected to membership: Drs. H. L. Burrell, of Boston; Perry H. Millard, of St. Paul; Albert B. Miles of New Orleans; Samuel J. Mixter, of Boston; John W. Elliott, of Boston; John Parmenter, of Buffalo; J. McF. Gaston, of Atlanta. To honorary membership, Prof. Carl Gussenbauer, of Prague.

Treatment of Enlarged Prostate. — The following is the verbatim answer to the above question by a female applicant for admission to one of our State medical societies: "The treatment of enlarged prostate is rest in bed, if very large. Then strapping. (In old persons are liable to sudden passage of pure blood from ureter, no cause known, collapse and death within thirty-six hours.) If it cannot be reduced by this means, then suspensory bandage must be worn constantly to take off all tension and liability to acute inflammation."

Sanitary Administration in Connecticut. — The Secretary of the Connecticut State Board of Health sums up some of the advantages and disadvantages of the present sanitary system of the State. The election in every town of a "health officer" or a "health committee," has imposed upon one or more chosen persons, a responsibility for the health of the town which was not felt before, divided as it was among the whole body of selectmen and justices of the peace. The special duties, which thus devolved upon them as the conservators of the public health, have contributed to stimulate in the officers so chosen, a desire to be better informed in the principles of modern sanitation, and to observe more closely the prevailing unsanitary conditions of their respective towns. But seven times in ten the first nuisance to be abated will be on private grounds, tolerated and maintained to the annoyance and danger of a neighbor's family. The Health Officer who is friendly to both, and has profitable business relations with each, is officially required to decide which is right. The matter need not be further pursued, in this supposed case, it will be eventually settled in conformity with those varying influences which control human nature and the right *may* prevail. But the ardor of that health officer has been dampened. His zeal for sanitary reform has been abated, if the nuisance was not. He will hesitate in future about taking the initiative as a reformer in similar cases. Obviously some person less closely connected with the disagreeing parties would not have had so delicate a position. Or he may have become a popular officer. Encouraged by success, he may have abated all local nuisances so far as the limits of his own jurisdiction, his own fellow townsmen may be under the best sanitary care, so far as his authority extends, then he finds that many of the advantages of such conditions are neutralized by the continued toleration of dangerous nuisances just outside his town limits, and the entire neglect of precautionary measures in cases of contagious diseases among the adjoining towns. He will learn, that each little town in a sanitary sense, is an independent empire, and the health officer thereof is the emperor, with no superior; he is the highest in authority. Thus, while each town has unlimited power to abate dangerous nuisances, and prevent the spread of diseases among its own citizens, there is no power whatever which can compel it or other towns to do so if unwilling. So that public hygiene in Connecticut may be compared to a crazy quilt with near 200 patches, having nothing in common but the joining at the edges. And the administration is as variable in efficiency as the patches of the quilt in color.

A New Cancer Cure. — The following is a specimen of the kind of rubbish which is published by the lay press, and from which the public derive much of their curious medical beliefs: "A new way of combating cancer is the discovery of a German physician named Felheisen. Perceiving an affinity between cancer and erysipelas he injected the virus of the latter into dogs which had been previously inoculated with cancer with result of the disappearance of the latter. It is on the principle pursued by Dr. Felheisen in his canine experiments — that the physicians in the great cancer hospitals both of this country and Europe are now proceeding to rob cancer entirely of its sting. As soon as the disease makes its appearance they inject a brood of erysipelas "cultures," which they have raised artificially in a medium of gelatine or beef-tea, into the blood of the patient. The erysipelas cultures fight the cancer microbes in blood, and do not cease until they have exterminated them. The cultures then are expelled from, of themselves leave the system when they have done their work, and the patient is cured." We may, before long, have cancer institutes where people are cured by wholesale with hypodermic injections.

Hardwar Fair. — This fair, which is partly religious and partly mercantile, is held yearly in the north of India, and attracts thousands of natives, crowded in unhealthy surroundings. Last year it was the starting-point of the epidemic of cholera which invaded Europe. This year the fair was of normal size, having been attended by from seventy to eighty thousand pilgrims; but, largely owing to the precautionary measures adopted by the government, no case of cholera occurred.

NEW YORK.

The Pasteur Institute has been removed from West 10th Street to its airy and capacious new quarters facing Central Park at West 97th Street. The building is a model structure, erected expressly for the purposes of the institute. It is six stories in height, and has a frontage of 26 feet on 97th Street and 100 feet on Central Park, West. On the first floor are the parlor, reception-room, operating-room, laboratories and the private offices of the director, Dr. Gibier, and his assistants. The second, third, fourth and fifth floors will be occupied by patients undergoing treatment, and on the sixth floor are the dining-rooms, kitchen, laundry and servants' departments. On the roof there is a superstructure of iron, where animals used in obtaining virus for inoculations will be kept.

The Society for the Relief of the Ruptured and Crippled has received the handsome bequest of $50,000 from the late Mrs. John C. Green.

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Miscellany.

FORD'S THEATRE.

The building in Washington that was formerly Ford's Theatre, but was for several years used by the Medical Department of the Army, collapsed last Friday, while five or six hundred employés were at work there, killing about twenty-five and wounding many more. The building was the one in which President Lincoln was assassinated in 1865. For reasons of sentiment it was not torn down, as it should have been, when it was taken for the Medical Department, but was more or less remodelled. For several years it was used for the Medical Museum, and Library of the Surgeon-General. Not long ago, the museum and medical library were transferred to a special building connected with the National Museum. Then the theatre was made an overflow building for the Record and Pension Bureau of the War Department. An immense mass of military records, which are searched for the evidence of service of every applicant for pension, must have been transferred to it, and the repairs which the building was undergoing when it collapsed were probably required to make it adequate for its latest uses.

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MEAT-EATING AND BAD TEMPER.

Mrs. Ernest Hart, who accompanied her husband in his recent trip around the world, appears to come to the conclusion that meat-eating is bad for the temper. In the *Hospital* she says that in no country is home rendered so unhappy and life made so miserable by the ill-temper of those who are obliged to live together as in England. If we compare domestic life and manners in England with those of other countries where meat does not form such an integral article of diet, a notable improvement will be remarked. In less meat-eating France, urbanity is the rule of the home; in fish and rice eating Japan, harsh words are unknown, and an exquisite politeness to one another prevails even among the children who play together in the streets. In Japan, I never heard rude, angry words spoken by any but Englishmen. I am strongly of opinion that the ill-temper of the English is caused in a great measure by a too abundant meat dietary combined with a sedentary life. The half-oxidized products of albumen circulating in the blood produce both mental and moral disturbances. The healthful thing to do is to lead an active and unselfish life, on a moderate diet, sufficient to maintain strength and not increase weight.

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THE DIAGNOSIS OF LOVE.

Dr. James Finlayson, in an historical review of Herophilus and Erasistratus,[1] quotes a story from Plutarch concerning the latter. Antiochus, son of the King Seleucus, fell in love with his step-mother the young and beautiful Stratonice. His condition was extremely unhappy. He made the greatest efforts to conquer his passion, but they were of no avail. At last he resolved, in his despair, to rid himself of life, by neglecting all care of his person and abstaining from food; for this purpose he made sickness his pretense. Erasistratus, easily discovered that his distemper was love; but it was difficult to conjecture who was the object. In order to find it out, he spent whole days in his chamber; and whenever any beautiful person of either sex entered it, he observed with great attention not only his looks, but every part and motion of the body which corresponds most with the passions of the soul. When others entered he was entirely unaffected, but when Stratonice came in, as she often did, either alone or with Seleucus, he showed all the symptoms described by Sappho, the faltering voice, the burning blush, the tumultuous pulse, and at length, the passion overcoming his spirits, a *deliquium* and mortal paleness.

Erasistratus concluded from these tokens that the prince was in love with Stratonice, and perceived that he intended to carry the secret with him to the grave. He saw the difficulty of breaking the matter to Seleucus; yet depending upon the affection which the king had for his son, he ventured one day to tell him "that the young man's disorder was love, but love for which there was no remedy." The king, quite astonished, said, "How! love for which there was no remedy!" "It is certainly so," answered Erasistratus, "for he is in love with my wife." "What, Erasistratus!" said the king, "would you, who are my friend, refuse to give up your wife to my son when you see us in danger of losing our only hope?" "Nay, would you do such a thing," answered the physician, "though you are his father, if he was in love with Stratonice?" "O my friend," replied Seleucus, "how happy should I be if either God or man could remove his affections thither! I would give up my kingdom, so I could but keep Antiochus." He pronounced these words with so much emotion, and such a profusion of tears, that Erasistratus took him by the hand and said: "Then there is no need of Erasistratus. You, sir, who are a father, a husband, and a king, will be the best physician too for your family." Upon this Seleucus summoned the people to meet in full assembly, and told them it was his will and pleasure that Antiochus should intermarry with Stratonice, and that they should be declared King and Queen of the Upper Provinces.

For the cure of the young prince Erasistratus is reported by Pliny to have received a fee of 100 talents which is calculated as amounting to more than one hundred thousand dollars.

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[1] Glasgow Medical Journal, May.

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THERAPEUTIC NOTES.

Soda Mint Tablets.— Dr. McFarren[1] gives the following formula:

℞ [illegible]
[illegible]
[illegible]
[illegible] M.
[illegible]

Dyspepsia.— Dujardin-Beaumetz recommends the following:[2]

℞ [illegible]
[illegible]
[illegible]
[illegible] [illegible]
M. [illegible]
Sig. [illegible]

The Kelley Cure.— Dr. B. D. Evans gives the following in the *Medical News:*

I. The Tonic, or "Dope."

℞	[illegible]	[illegible]
	Strychnin. nitrat.	gr. i.
	[illegible]	[illegible]
	[illegible]	[illegible]
	Aloin	gr. i.
	Hydrastinin	gr. ii.
	Ext. erythrox Fl.	ʒ i.
	Ext. cinchonæ co. Fl.	ʒ iii.
	[illegible]	[illegible]
	[illegible]	[illegible] M.

II. The Injection, or "Shot."

℞	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible] q. s. to color.	M.

In addition to these two, an injection of a solution of chloride of gold and sodium is used to impress the patient, his attention being called to its rich golden color. Then the hypodermatic injection of apomorphine, which is given either with or as a substitute for the "shot" while the patient is allowed to drink whiskey.

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GEORGE C. SHATTUCK, M.D.

At a meeting of the College of Physicians, of Philadelphia, held June 7th, the following *minute* (prepared by Dr. Alfred Stillé) was unanimously adopted:

"In Dr. Shattuck's earnest devotion to the duties and interests of the profession for which he felt an hereditary attachment and which he illustrated by a long career of faithful teaching and practice, and in the uprightness, unselfishness and simplicity of his life and his gentle and benevolent disposition, he exerted a beneficent influence while he lived, and has left behind him the memory of a character worthy of admiration, and which should serve as an example and encouragement to all who aspire to be held in honor and affectionate remembrance."

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OBITUARY.— ASA MILLET, M.D.

Dr. Asa Millet was born in Leeds, Me., in April, 1813, and died in East Bridgewater, Mass., in March, 1893, after practising medicine for over fifty years in Plymouth County.

He studied at Monmouth and Waterville Academies, and entered Waterville College in 1832. He spent several years in teaching, and then began the study of medicine, for which he was naturally adapted. He graduated from the Medical School of Bowdoin College in [illegible].

He began his active life as a physician in [illegible], and has ever since practised medicine in the Old Colony. In [illegible], he offered his services to Governor Andrew in whatever capacity he saw fit to place him. Having had the misfortune to lose the sight of his right eye at the age of thirteen, he could not regularly enlist as a surgeon; but he was made a contract surgeon under General McClellan in 1861, and did excellent service until sickness compelled him to return home. As a member of the Surgical Aid Corps, however, he went several times to the front, whenever his services were needed.

He played a prominent part in the politics of Plymouth County, and has always been a strong Republican. The only political office which he ever held was that of a member of the Governor's Council during the last part of Governor Andrew's administration.

In [illegible], he was Vice-President of the Massachusetts Medical Society. He belonged to the Society of the Sons of the Revolution, and had been a member of the New England Historic Genealogical Society for a great many years.

Dr. Millet had a most genial temperament; and his companionable and thoroughly democratic nature together with his philanthropic character and many charities, widely but quietly exercised, made him exceptionally popular.

His great heart, his noble character and his eminent attainments in medical science, make his death a loss that will be felt most keenly over a wide extent of Plymouth County.

RECORD OF MORTALITY

For the Week ending Saturday, June 3, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,891,306	[illegible]	[illegible]	18.24	18.36	[illegible]	[illegible]	[illegible]
Chicago	1,250,000							
Philadelphia	1,115,562	388	118	14.04	10.14	[illegible]	[illegible]	[illegible]
Brooklyn	[illegible]	[illegible]	116	13.63	14.50	2.03	[illegible]	[illegible]
St. Louis	[illegible]		—	—				
Boston	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	3.43	[illegible]
Baltimore	[illegible]							
Washington	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.33	1.11
Cincinnati	[illegible]	[illegible]	44	[illegible]	[illegible]		—	[illegible]
Cleveland	[illegible]	90	[illegible]	[illegible]	[illegible]	1.11		[illegible]
Pittsburg	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Milwaukee	[illegible]	84	32	[illegible]	[illegible]	1.19	[illegible]	[illegible]
Nashville	[illegible]	[illegible]	[illegible]	18.50	3.70	11.11		—
Charleston	[illegible]	[illegible]	16	17.08	2.44	[illegible]		—
Portland	[illegible]	4	[illegible]			—	—	—
Fall River	87,411	43	1	6.99	16.31	—	[illegible]	
Worcester	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Lowell	87,191	[illegible]	[illegible]	13.15	13.15	—	[illegible]	[illegible]
Cambridge	77,100	27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	—
Springfield	[illegible]	11			[illegible]		—	—
Lawrence	[illegible]			—	—			—
New Bedford	[illegible]	[illegible]		—	[illegible]	—	—	—
Holyoke	[illegible]					—	—	—
[illegible]	32,140	[illegible]	[illegible]	—	—	—	—	—
Salem	31,495					—	—	
Haverhill	[illegible]	[illegible]	[illegible]	8.33	16.66	—	—	
Chelsea	30,264	[illegible]		—	—	—	—	—
Malden	29,394	3	[illegible]	—	—	—		
Fitchburg	27,146	[illegible]	[illegible]	—	[illegible]			
Newton	26,498			—				
Taunton	26,972	[illegible]		[illegible]	[illegible]			[illegible]
Gloucester	[illegible]	1	1	[illegible]			—	—
Waltham	[illegible]	5	[illegible]	—	—	—	—	—
Quincy	[illegible]	[illegible]	2	—	16.66	—	—	—
Pittsfield	18,802	[illegible]	[illegible]	—	—	—	—	—
Everett	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Northampton	[illegible]	[illegible]	1	—	—	—	—	—
Newburyport	14,073		1	—	—	—	—	—
[illegible]	[illegible]	1	[illegible]	—	—	—	—	—

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers), 405, acute lung diseases 385, consumption 295, diphtheria and croup 115, scarlet fever 17, typhoid fever 44, measles 38, cerebro-spinal meningitis 30, whooping-cough 27, erysipelas 12, malarial fever 10.

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[1] [illegible]

[2] [illegible]

From typhoid fever Philadelphia 11, New York 7, Cincinnati 6, Pittsburgh 4, Boston 3, Brooklyn, Cleveland, Milwaukee and Charleston 2 each, Washington, Fall River, Lowell, Cambridge and Haverhill 1 each. From measles Pittsburgh 14, New York 8, Brooklyn 7, Philadelphia, Washington and Cambridge 2 each, Boston, Cincinnati and Cleveland 1 each. From cerebro-spinal meningitis New York 20, Brooklyn 4, Washington 3, Cleveland 2, Lynn 1. From whooping-cough New York 15, Philadelphia 4, Brooklyn 3, Cincinnati and Nashville 2 each, Boston 1. From erysipelas New York 7, Boston 3, Brooklyn and Washington 1 each. From malarial fever Brooklyn 7, Philadelphia 2, New York 1. From typhus fever New York 4. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending May 27th, the death-rate was 17.5. Deaths reported 3,464; acute diseases of the respiratory organs (London) 268, measles 113, whooping-cough 88, diarrhœa 66, diphtheria 61, scarlet fever 49, fever 25, small-pox (London 16, Oldham 5, Birmingham and Bradford 2 each, West Ham, Salford, Burnley, Blackburn, Halifax and Hull 1 each) 31.

The death-rates ranged from 9.3 in Brighton to 23.3 in Swansea; Birmingham 15.9, Bolton 16.9, Bradford 17.6, Bristol 17.1, Cardiff 16.5, Croydon 12.0, Leeds 18.6, Leicester 19.1, Liverpool 22.7, London 17.7, Manchester 19.4, Newcastle-on-Tyne 22.5, Nottingham 14.4, Oldham 11.5, Sheffield 20.5, Sunderland 19.4.

METEOROLOGICAL RECORD,

For the week ending June 3, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...28	29.81	56	66	46	94	60	77	S.W.	W.	10	8	O.	O.	0.31
M..29	29.86	54	58	50	65	77	71	W.	E.	7	6	O.	C.	
T..30	29.96	60	68	52	69	61	65	S.W.	S.	4	12	C.	C.	
W..31	30.21	59	67	51	72	72	72	S.	S.	13	11	O.	O.	0.01
T..1	30.32	62	72	52	80	75	78	S.W.	S.	6	10	O.	F.	
F..2	30.28	60	69	52	78	82	80	S.	S.	5	11	F.	O.	
S..3	30.24	56	60	53	94	88	91	E.	E.	7	4	R.	O.	0.05
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 4, 1893, TO JUNE 9, 1893.

By direction of the Secretary of War, the order relieving **Major John Brooke**, surgeon, from duty at Fort Leavenworth, Kansas, and assigning him to temporary duty as attending surgeon and examiner of recruits at Philadelphia, Pa., is revoked.

Leave of absence for twenty-one days, to take effect on or about June 15, 1893, is granted **Captain Louis S. Tesson**, assistant surgeon.

The leave of absence on surgeon's certificate of disability granted **Major James P. Kimball**, surgeon, U. S. A., is extended two months.

Captain Jefferson D. Poindexter, assistant surgeon, is relieved from duty at Fort Nebraska, and will report in person to the commanding officer, Fort Bowie, Arizona, for duty at that post.

APPOINTMENT.

Lieut.-Col. George M. Sternberg, deputy surgeon-general, to be surgeon-general, with the rank of Brigadier-General, May 30, 1893.

PROMOTION.

Major John H. Janeway, surgeon, to be deputy surgeon-general with the rank of Lieutenant-Colonel, May 31, 1893.

RETIREMENT.

Brigadier-General Charles Sutherland, surgeon-general, May 29, 1893.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 10, 1893.

S. S. White, passed assistant surgeon, ordered to the U. S. S. "Constellation."

Henry LaMotte, assistant surgeon, from the U. S. S. "Constellation" and to the U. S. S. "Newark."

A. M. Moore, surgeon, from Navy Yard, Mare Island, and placed on waiting orders.

D. O. Lewis, surgeon, from the Naval Hospital, and to the Navy Yard, Mare Island, Cal.

J. E. Riggs, assistant surgeon, ordered to the Naval Hospital, Mare Island, Cal.

A. L. Gihon, medical director, from special duty, New York, and to Washington Hospital.

H. M. Wells, medical director, from Naval Hospital, Washington, and wait orders.

W. A. McClurg, surgeon, from Bureau Medicine and Surgery, and to the U. S. S. "Concord."

G. L. Henneberger, surgeon, ordered to special duty attending officers and their families in New York.

R. C. Persons, surgeon, from U. S. S. "Concord" and granted two months' leave.

J. S. Hope, assistant surgeon, from the U. S. S. "Fern" and to the U. S. S. "Charleston."

SOCIETY NOTICE.

Mississippi Valley Medical Association. — The nineteenth annual meeting will occur in Indianapolis, October 4, 5 and 6, 1893. A general session will be held each morning and the afternoons will be devoted to section work.

Frederick C. Woodburn, *Secretary*, Indianapolis.

RECENT DEATH.

Nathan Brown Edwards, M.D., M.M.S.S., died in North Chelmsford, Mass., June 12th.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Alcoholic Inebriety. By Frederick Peterson, M.D. Reprint. 1893.

Electro-Therapeutics of Neurasthenia. By W. F. Robinson, M.D. Detroit: George S. Davis. 1893.

Annual Report of the Board of Health of the City of Worcester, for the Year Ending November 30, 1892.

The Surgical Anatomy and Surgery of the Ear. By Albert H. Tuttle, M.D. Detroit: George S. Davis. 1892.

Impotence and Sexual Weakness in the Male and Female. By Edward Martin, M.D. Detroit: George S. Davis. 1892.

Reminiscences of the Founders of the Woman's Medical Association. By Thomas Addis Emmet, M.D. Reprint. 1893.

The Literature of Sea-Sickness. By J. A. Irwin, M.A. Cantab.; M.A., M.D. Dub.; M.R.C.S. Eng., etc., New York. Reprint. 1893.

The Cure of Complete Prolapse of the Rectum by Posterior Proctectomy. By John B. Roberts, M.D., Philadelphia, Pa. Reprint. 1893.

Our Dispensaries, Hospitals, Philanthropy, Frauds and the Necessity of Medical Reform. By L. F. Criado, A.B., M.D. Reprint. 1893.

Movable Kidney; with a Report of Twelve Cases Treated by Nephrorrhaphy. By George M. Edebohls, A.M., M.D., New York. Reprint. 1893.

Leçons de Thérapeutique. Par Georges Hayem, Professeur de Thérapeutique, Paris. Les Médications. Quatrième Série. Paris: G. Masson. 1893.

Colotomy. A Clinical Lecture on Diseases of the Rectum, delivered at the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprint. 1893.

A Case of Rupture of an Ovarian Cyst. A Case of Appendicitis Occurring on the Seventh Day following Labor; Rupture into the Bowel; Recovery. By Reuben Peterson, M.D. Reprints. 1893.

Inguinal Hernia in the Male. The Reconstruction of the Pelvic Structures in Woman; The Advantage Derived from the use of the Buried Tendon Suture. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, Mass. Reprints. 1892.

Cremation and its Importance in Cholera. The Present Status of Electrolysis in the Treatment of Urethral Strictures; with Statistics of One Hundred Cases (Third series). By Robert Newman, M.D., New York. Reprints. 1893.

Original Articles.

ICE IN THE TREATMENT OF ACUTE PNEUMONIA: A COLLECTIVE REPORT.

BY THOMAS J. MAYS, M.D.

[illegible]

WHATEVER its nature may be, it is quite certain that no other disease has elicited a greater number of conflicting opinions concerning its treatment than has croupous pneumonia. Forty years ago bleeding and blistering were regarded as its specifics; but these are now, and for the last twenty years have been, scarcely thought of in this connection. In the meantime hot poultices, aconite, veratrum viride, digitalis, quinine, etc., took their places, yet it is not too much to say that they all led to disappointment and came to grief in the retort of clinical experience, and that finally the profession has gravitated to the conviction that the disease is self-limited in duration, and that hence all efforts to control its course are fruitless, if not actually harmful. To be thus compelled to stand before a disease and acknowledge our helplessness and impotency is, to say the least, an unenviable position, but I must confess that until I became familiar with the value of local cold applications in this disease I was in hearty accord with this idea. Since then I may say that I am able to approach a case of pneumonia with a greater degree of assurance — not with the feeling, however, that we possess a specific, but with the confidence that here is an agent with which we are able to impress and circumvent the severity of the pneumonic process. I believe that cold, properly applied, will affect the death-rate of pneumonia as profoundly as it has affected that of typhoid fever, and, although I do not expect a rapid introduction of this measure, on account of a deep-rooted prejudice which exists against the use of cold in almost all internal diseases, I trust that the evidence which is herewith submitted will serve to commend it to the serious attention of the profession.

Under the titles "Can Croupous Pneumonia be Aborted?" and "Ice in the Treatment of Croupous Pneumonia," I contributed two papers to *The Medical News* of September 24, 1892, and January 21, 1893, respectively, in which are related three cases of pneumonia which were treated principally with applications of ice to the chest; and since the appearance of the first paper I instituted a collective investigation on a small scale by sending a number of circulars[1] to various members of the profession, inviting a trial of the ice treatment, and as a result of this inquiry I submit the following abstracts of cases which have been kindly returned to me, and also of those of other cases which I have collected from the literature existing on the subject.

CASE I.[2] M., aged thirty-six years, was attacked with right basic pneumonia March 10, 1892, when the temperature reached 105°, pulse 112, and respiration 26. Ice was applied over the affected area until the 16th, when crisis followed the hypodermatic injection of $\frac{1}{4}$ of a grain of pilocarpine, and the temperature fell to normal. Recovery was retarded by fibrinous pleurisy. Patient was able to sit up on April 11th.

CASE II. F., aged seventy-four years, had pneumonia of the right base, associated with delirium. Ice was applied over the affected area from the 6th to the 10th of March, 1892, when the crisis occurred and the ice treatment was discontinued. The temperature and pulse records are lost, but the improvement was prompt and rapid.

CASE III. M., four years of age, was first seen March 6, 1892, when the child was intensely delirious and quite insensible. Pneumonia of the right base existed. Ice was applied from March 7th to the 13th, when lysis took place. There was no pulse or temperature record kept, but it was "a very severe case, in which the cold acted like a charm."

CASE IV. M., fourteen years old, had pneumonia of both bases, the consolidation extending above the nipple on the right side. Ice was applied around the whole chest from the 22d to the 29th of March, 1892. At the beginning of the application the temperature was 105°, pulse 100, and respiration 28. Crisis occurred on the 28th, when temperature became normal.

CASE V. M., aged two years, had pneumonia, most severely at the left base, and was very delirious. Ice was applied March 12th, when the temperature was 101°, pulse 150, respiration 40. The ice applications were continued until the 14th, when crisis took place, and temperature became normal. "I think this can be taken as an aborted case."

CASE VI. F., aged twenty-three, took a chill January 7, 1892, which was followed by pneumonia, implicating the whole of the right lung. On January 8th, when the temperature was $105\frac{1}{5}$°, the ice was applied, and by next morning the temperature had fallen to 99°, and the next day it was normal. In order to satisfy the patient the ice was continued until the 11th. He also has an organic heart lesion, which aggravated his condition very much.

CASE VII. M., aged thirty-four, had pneumonia of right base. When first seen, January 12th, was insensible, the temperature 103°, and had rusty and bloody expectoration. The ice was applied on this day, and the next morning the temperature had fallen to 100°, but owing to some objection it was taken off, and by evening the temperature had risen to $103\frac{1}{5}$°. The ice was promptly reapplied, and the following day the temperature reached 100°; on the following day crisis occurred and it fell to normal.

CASE VIII. F., aged sixty-five, had pneumonia of the whole of the right lung. Ice was applied to this side March 16th, when the temperature was 103°; next morning it had fallen to 101°. Owing to prejudice, the applications were discontinued until the morning of the 22d, when she was no better, and the temperature had again risen to 103°. The ice was then reapplied. On the evening of this day the temperature was 101°; the morning and evening of the 23d it was 100° and $99\frac{3}{5}$°, and crisis occurred on the 24th, when the temperature became normal.

CASE IX. M., aged forty, pneumonia of the upper half of the left side and right base. The sputum was bloody. On the morning of February 5, 1892, the date of his initial chill, the ice was applied, his temperature was $104\frac{3}{5}$°, and in the evening 102°. On the 6th, the morning record was 100°, the evening 99°. On the 7th, crisis supervened and the temperature became normal. The pain which this person experienced was also quickly relieved by the ice. The disease was "aborted in congestive stage."

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[1] [illegible]

[2] The first [illegible] cases are reported by Dr. W. Fred. [illegible], [illegible], Ontario.

CASE X. F., aged thirty-five, had pleuro-pneumonia of the left base. The initial chill was on February 6th, and ice was applied over the left lung on the morning of the 6th, when the temperature was 101°. On the evening of the same day, it was 100°; on the 7th, morning $99\frac{2}{5}$°, evening 99°. On the 8th, crisis took place, and the temperature record was 98°.

CASE XI. M., aged thirteen, had pneumonia of both bases. Ice was applied around the chest on March 10, 1892, when the temperature was 105°; on the 11th, the record was 103°, and on the 12th, 102°. On the 13th crisis occurred and a thermometric record of 98°. "A very severe case in which the effect of the cold was very marked." (All of Dr. Jackson's cases received liq. ammon. acetat. ℥ij. and spt. æther. nit. ℥j. every hour, well diluted.)

CASE XII. (Reported by Dr. E. W. Blackburn, Stahlstown, Pa.) The patient was a male, a periodical drinker, aged forty-one, and had pneumonia over the whole of the right lung. The initial chill was on November 10, 1892, following a three days' alcoholic debauch, and the man was first seen on the following day, when his temperature registered $103\frac{2}{5}$°. The ice was then applied. On the 12th, temperature was 101°; on the 13th, 99°; on the 14th, lysis occurred, with a normal temperature. This patient also received $\frac{1}{30}$ grain of strychnine every four hours.

CASE XIII. (The four following cases are reported by Dr. J. C. Knipe, Jewish Hospital, Philadelphia.) The patient, a male, aged thirty-seven, an alcoholic, was taken with a chill, which was followed by pneumonia of the left base. On March 11, 1893, two days before admission to the hospital, he was suffering from diarrhœa, lead-poisoning, and while in the hospital had an attack of delirium tremens. His temperature ranged from 102° to 103°; the ice was applied for three days, and death took place on the fifth day in the hospital.

CASE XIV. A male, aged twenty-eight, with pneumonia of left lung, was admitted October 17th, although he had a chill two days previously. He was delirious, and had rusty and bloody expectoration. The ice was applied over the affected area for five days. His temperature on admission was 104°, afterward from 100° to 102°. He died October 22d. Before this attack he had been suffering from chronic pneumonia of both bases.

CASE XV. A male, aged seventeen, had pneumonia of the right base, December 27, 1892. On admission, when the ice was applied, his temperature was 103°, and for the next twelve days, during which the ice was continued, it ranged from 101° to 98°, and disease terminated by lysis at the end of that time.

CASE XVI. A male, aged twenty-one, was taken sick with pneumonia of the right base February 2, 1893. The ice was applied for six days over the affected area. The temperature remained at 104° and $105\frac{3}{5}$° until midnight of the second day of the disease, when it dropped to $99\frac{2}{5}$°. Shortly after this time the patient had another chill and on the third day, in the morning the temperature rose to 105°, and in the evening, after a profuse sweat, it fell to 98°; from this time it fluctuated between 104° and 98°, until the seventh day, when it became normal, and remained so. This patient also received aconite, morphine, and carbonate of ammonia.

CASE XVII. (The next two cases were reported by Dr. John A. Fell, of Doylestown, Pa.) M., aged sixty, had the initial chill, December 20, 1892, and from this time to the afternoon of the 28th, the temperature varied from 102° to $103\frac{1}{2}$°. On the last date the ice was applied over the lower half of the right lung, the seat of the pneumonia, and at noon of January 1st the temperature was normal, when it was removed. He also received $\frac{1}{20}$ grain of strychnine every four hours until January 1st. This patient also had an old standing aortic regurgitation. At first he objected to the use of the ice, but it gave him such marked relief from his distressed breathing that he became much pleased with it. He also received two ounces of fresh beef juice and a glass of milk alternately every two hours.

CASE XVIII. F., aged seventeen, had pneumonia of left lung. For the first three days the tinctures of aconite, belladonna, and veratrum viride were used in large doses, and mustard was applied to the affected side, without any apparent effect. Her temperature was about 103°, and pulse 120. On the fourth day the ice-bags were adjusted, and in less than twenty-four hours the temperature had fallen to 99°, and the patient experienced a sense of comfort which she had not felt before. Strychnine, quinine, and morphine were also used. "Her recovery was rapid and complete after using the ice."

CASE XIX. (Reported by Dr. A. Cooper, Brookline, Mass.) A male, aged thirty-one, had the initial chill on the evening of January 31, 1893, and the expectoration was of a bloody mucous character from this date. Both bases were involved. On the evening of February 1st the temperature was $102\frac{1}{2}$°, the next morning it was $104\frac{1}{4}$°, when the ice was applied. On the evening of this day it was 103°. On the third day it fell to 101°, and was almost normal on the fifth day. The ice was applied for seventy-two hours to the right, and for eighty-six hours to the left side, and the disease subsided by lysis. Dr. Cooper adds: "In six hours after the ice had been applied the temperature dropped from $104\frac{1}{4}$° to 101°. The ice had been on a very short time when pain and dyspnœa ceased. My patient was better on the fifth day than was any case I have had under poultice or hot local treatment on the ninth or twelfth day."

CASE XX. (Reported by Dr. G. H. Franklin, Hightstown, N. J.) F., five years of age, had an initial chill February 17, 1893, followed by pneumonia of the entire right lung. From this date to the 20th the temperature rose from $102\frac{1}{2}$° to 104°, and she received the usual treatment for this disease. On the latter day ice was applied to the front and side of right lung, and was continued for seven days, during which time the temperature gradually returned to nearly a normal point (99°). Previous to the ice treatment large doses of quinine had exerted no influence on the fever. The patient also received $\frac{1}{120}$ grain of strychnine every four hours. This was a case of bronchopneumonia following measles.

CASE XXI. (Reported by Dr. Eugene P. Bernardy, Philadelphia.) M., aged twenty-five, was first seen September 15th, although the chill occurred three days previously. The lower two-thirds of the right lung were involved. Expectoration was copious, rusty, and bloody. The patient was violently delirious; his temperature ranged from 102° to 104°. Ice was applied on the 16th, and was continued to the 19th. On the evening of the last date active delirium set in, and the ice was discontinued. After the delirium was under control ice was again applied for three days longer, when the disease terminated by crisis. The patient also received [illegible] grain of strychnine every two hours.

Case XXII. (Reported by Dr. Charles E. Woodward, West Chester, Pa.) F., aged thirteen, with double pneumonia, had the initial chill March 20, 1893, accompanied by a temperature of 104°. The expectoration was bloody at first, afterward rusty. Crisis took place on the seventh day. Turpentine stupes were applied externally, and strychnine in $\frac{1}{100}$ grain doses every four hours was given internally from the beginning. General sponging with cold water (65°) was used throughout, and ice was applied sparingly, only three times, and fifteen minutes each time. The efficiency of the ice-bag over the cold sponging, was shown in the temperature-record. While the cold sponging reduced the temperature which was about 104° for seven days, the depression caused by it was not so pronounced as that which was caused even by the fleeting local application of ice. It is stated by the reporter that the patient experienced great comfort from the use of the ice-bag.

Case XXIII. (Reported by Dr. E. R. Snyder, Philadelphia.) F., aged three years, had double pneumonia, lower third of the left lung being involved at the beginning, and on the fifth day the lower part of the right lung became implicated. On the sixth day the temperature had risen to 105⅗, and the child became unconscious. The whole chest was now enveloped in ice, and in six hours, when the temperature had fallen to 102⅘°, the ice was taken off. In the next six hours the temperature rose to 104°, when the ice was reapplied, and in one hour the thermometer registered 102½°. After this, temperature gradually dropped to the normal point. The reporter says there is good reason for believing that the ice saved the child's life. Strychnine was given hypodermatically in $\frac{1}{50}$ grain doses, and croton oil was applied externally.

Case XXIV. (Reported by Dr. Walter Webb, Sharon Hill, Pa.) A male, aged sixteen, had pneumonia of the entire left lung and lower portion of the right. The patient was seen first November 2, 1892, when the temperature was 105°, respiration about 60, and pulse 120. The parents objected to the ice when Dr. Webb first suggested it, but because no improvement in the boy's condition was observed, the parents permitted its use on November 6th, when the evening temperature was 105⅕°, and the respiration 64. After this the fever gradually fell until the 14th, when it registered 102° in the evening. The ice was now withdrawn and the temperature rose a degree or more and the boy complained of severe pain and greater difficulty in breathing. The ice was reapplied on the 17th, the temperature fell, and the patient expressed himself as being greatly relieved when the ice was reapplied. It was continued for two weeks, when the fever had disappeared.

The following six cases are my own:

Case XXV. F., twenty-five years of age, with double basic pneumonia, and with pleurisy on the left side, was first seen in the Polyclinic Hospital, November 24, 1891. She had a temperature of 103⅗°, and ice-bags were applied over the affected area. The temperature began to decline immediately, and, excepting a slight rise on December 3d, sank to nearly a normal level on the eleventh day.

Case XXVI. F., thirty-seven years old, was seen first in the Polyclinic Hospital, June 25, 1892, when she was suffering from pneumonia of the lower half of the right lung, and had a temperature of 103°. Ice was applied at once over the affected area, and by the following morning the temperature had descended to 98⅕°, although on the afternoon it rose again to 101⅗°. On the morning of the third day the thermometer registered 98⅕°, and in the evening 100⅘°. After this, with a few variations, the temperature became normal, and remained so.

Case XXVII. M., fifteen years of age, had been having pneumonia of the lower two-thirds of his right lung for about six days before I saw him. On the evening of the second day his temperature was 104⅕°, and cold-sponging was resorted to until the sixth day, when it was depressed to 102⅘° at 2.30 P. M. Ice-bags were now put over his right chest, and at 1 P. M. next day his temperature registered 98⅕°, and at 8 P. M. 100°. Next morning it was reduced to 97°, when the ice-bags were removed until reaction was assured. From this time on his temperature, with a few exceptions, remained near the normal line, and he made a complete recovery.

Case XXVIII. A female, eighteen years of age, was first seen by me June 17, 1892, suffering pneumonia of the whole of the right lung, and having a temperature of 102⅗°. Her whole right chest was surrounded with ice-bags on the third day of her disease, and by next morning her fever had fallen three degrees (to 99⅗), and from thence became gradually normal. Her complete restoration followed at once.

Case XXIX. A male, aged forty-five, an inveterate drinker for twenty years, was admitted into the Polyclinic Hospital, December 15, 1892, on the fifth day of a pneumonia involving the whole of the left lung, and with a temperature 102⅗°. His whole left chest was enveloped in ice, and on the morning of the eighth day the temperature was normal. With the exception of a severe attack of delirium, which occurred on the ninth day, he made an uninterrupted recovery.

Case XXX. M., aged thirty-four, had pneumonia of the whole left lung when first seen in the Polyclinic Hospital, March 26, 1893. His evening temperature was 103⅘°; the ice was applied, and the next morning it had fallen to 100⅖°. It remained near 101° until the 28th, when it rose to 102⅖°. It was now found that the whole lower half of the opposite lung was involved. He had several hemoptyses, his face was intensely flushed, and his breathing extremely difficult. Inhalation of oxygen relieved this distress somewhat. He was delirious, and had a tendency to coma. The ice was continued on both sides, and the temperature, with the exception of several occasions, was kept between 101° and 102°. Resolution soon followed in both lungs. Owing to the gravity of his condition his convalescence was slow, but he made a good recovery. The ice was continued for twenty days. Beside the oxygen inhalations, he received strychnine in large doses, by the mouth and hypodermatically, and was liberally fed and stimulated.

The next eighteen cases are reported by Dr. D. B. Lees in an article published in *The Lancet*, November 2, 1889:

Case XXXI. M., twenty-five years of age, had pleuro-pneumonia of right base. On November 15, 1887, the fifth day of the disease, the temperature was 104⅘°. The affected side was tightly strapped and an ice-bag applied over the strapping. The temperature fell immediately, and was normal next morning, when the ice-bag was removed.

Case XXXII. M., aged twenty-six, with pneumonia of left posterior base, was seen on the seventh day, when temperature was about 104°; ice was applied. During the following night the temperature fell to 99°.

Case XXXIII. M., sixteen years old, with pneumonia of the right base, was seen on the fourth day, when his temperature was 104°. Snow was at once applied, and the temperature fell immediately.

Case XXXIV. A child, three years old, had broncho-pneumonia of the base of the lung. Temperature was 104°, and breathing was very rapid. The ice-bag was applied over the affected lung. Within twenty minutes of its application a distinct change for the better was observed. The breathing became much quicker, the temperature fell at once, and in a few days the patient was quite well.

Case XXXV. M., four years of age, had pneumonia of the left posterior base. The temperature was 104½°, the pulse 140, the respiration 50. Ice-bags were applied over the implicated lung-area, and immediate recovery followed.

Case XXXVI. F., four years old, suffered with pneumonia of lower part of the right lung. When first seen the temperature was 104°, and within a few hours after the ice was applied it fell to 98°. However, it rose again to 101°, and continued at this point for about thirty-six hours, when it fell to 96½°, and remained subnormal.

Case XXXVII. F., thirty-eight years of age, had pneumonia over the left axillary base. The woman was seen first on the fourth day of her illness, when her temperature was 103°. The ice-bag was applied, and by midnight her fever had fallen to 99⅗°, and the ice-bag was removed. The temperature rose at once, and the next morning it was 101½°, and in the evening 104°. No ice was again applied, but the temperature gradually fell, so that on the evening of the next day it reached 99½°.

Case XXXVIII. M., nine years of age, had pleuro-pneumonia of left base, and a temperature of 103°; ice was applied, and in thirty-six hours it had dropped to 99⅖°, and the ice was removed. In eight hours it had risen again to 104°. Reapplication of the ice caused the temperature to sink to 98⅖° in sixteen hours, after which it did not again rise above 100°.

Case XXXIX. M., twenty-six years old, had pneumonia of the left base. The man was seen on the third day, when his temperature was 103°. An ice-bag was applied, and the temperature fell promptly to 97⅗° on the morning of the fourth day. The ice was removed, and the temperature rose directly. When it reached 100° the ice-bag was replaced. The rise, however, continued as far as 102°, from which it fell again to the normal on the fifth day.

Case XL. F., six and a half months old, had broncho-pneumonia of the root of the right lung. Temperature was 105°. Twenty-four hours after the application of the ice-bag the fever fell to 101⅖°. The ice was then removed, and the temperature rose to 103°, but fell again to 100⅖°. A sudden rise to 105⅗° was caused by an implication of the root of the opposite lung. The ice-bag being applied to the new focus of inflammation, the fever fell to 98⅘° in nine hours, and after a few small transitory rises, recovery slowly occurred.

Case XLI. F., fifteen years old, was a case of broncho-pneumonia. There was general bronchitis; dulness over the whole front of the left lung, with a temperature of 104⅕°, on January 24, 1885, when she was first seen. Poultices were applied, and the next day she was worse, the temperature having risen to 105°. Venesection — ten ounces — gave great and immediate relief. The temperature fell one degree, but on the evening of the next day (the third in the hospital) she was worse than ever, her temperature reaching 105⅗°. An ice-bag was now applied over the whole left front of the chest, and on the morning of the next day (the fourth) the thermometer registered 98°. In the afternoon, however, it rose again to 105⅘°. Examination showed that the resonance over the left front was remarkedly improved, but fresh crepitation and bronchial breathing had appeared in the axillary region. The ice-bag was shifted to this region, and again the temperature fell to 98°. It rose once more to 103°, and fell again to 98°. On the fourth day of the ice treatment there was another rise to 104⅕°, which proved to be due to the implication of the opposite apex. A second ice-bag was applied here, and in twenty-four hours the apex was normal, and the temperature had fallen to $96\frac{7}{10}$°. After this, convalescence was uninterrupted.

Case XLII. M., thirteen years of age, had pneumonia of the left base. The boy was first seen on the fourth day of the disease, when the temperature was 105⅘°. Five grains of quinine were given, and the next morning the temperature was only 100⅗°, but in the afternoon it rose to 104⅕°, when an ice-bag was applied over the inflamed lung. The rise continued until 6 p. m., when 105⅖° was reached, and from thence there was a gradual abatement until the seventh day, when the temperature was 99°, and the ice-bag was removed.

Case XLIII. F., twenty years old, was first seen on the seventh day, suffering from pneumonia of the right base, at which time her temperature was 104⅖°, and an ice-bag was applied. There was a fall of three degrees during the next few hours, but next morning it stood again at 104°, and remained between 103° and 104° for three days. On the tenth day it suddenly fell to 98°, and the ice was removed. On the eleventh and twelfth days it rose to 102°. Examination now showed a fresh inflammation at the base of the opposite lung. The ice was applied to this spot, and in three days the physical signs had disappeared, and she was convalescent.

Case XLIV. M., twenty-five years old, was admitted on the fourth day with pneumonia of the right apex, and was seen first on the following day, with a temperature 103⅗°, and in a semi-maniacal condition. An ice-bag was applied, and on the evening of the eighth day his temperature dropped to 99°, and the ice was removed.

Case XLV. F., twenty years old, was seen first with pneumonia of the right apex, on the fifth day, and with a temperature of 104°. By the next morning, the ice had depressed the temperature to 100°, but during the day it rose to 102°. The respiration now rose to 74, and some cyanosis appeared. It was found, now, that the lung in front and behind was dull to the angle of the scapula. On the next day (the seventh) her temperature was only 102½°, but her respiration had risen to 100, and her right lung was involved throughout. Both cheeks were markedly cyanosed, and the expectoration was of a "prune-juice" color. Her whole right chest was enveloped in ice, and she received four ounces of brandy daily, and a mixture of ether and ammonia every four hours. On the eighth day the temperature was 101½°, but the respiration ranged from 88 to 100. On the ninth and tenth days the temperature remained about the same, but an extraordinary improvement occurred in the physical signs. On the latter day the temperature suddenly fell to 97°; the ice was removed, and convalescence supervened. "It must be allowed, I think," the doctor says, "that in this case the ice was of the greatest service. It is hardly too much to say that it saved the patient's life."

Case XLVI. M., seven years of age, suffered from a former empyema, the right lung being entirely collapsed; was seen on the second day, when his temperature was 104°, and respiration 56. The pneumonia was believed to exist in the left lung, and ice-bags were applied here. The temperature fell four degrees before next morning, but gradually rose somewhat during the next forty-eight hours. On the third day his lips and cheeks were livid. This was not surprising, for his right lung was useless. On the fourth day respiration was 60; on the fifth day the temperature was 102°, and respiration 58. On the seventh day the temperature fell to normal, and the ice-bag was removed.

Case XLVII. M., five years old, was admitted on the third day of his illness. The next day his temperature was 104°, and respiration 50. No signs of pneumonia could, however, be discovered until the sixth day, when it was found that the upper part of his right lung was consolidated. The ice-bag was applied until the eighth day, and crisis occurred.

Case XLVIII. M., about forty years old, had pleuro-pneumonia of the right, and pleurisy of the left base; on the second day his temperature was 104°, and respiration 32. The ice-bag was applied. Crisis occurred on the fifth day. This patient, also, had a very feeble heart. Then followed a good recovery.

Case XLIX. (Reported by Mr. Back, *Lancet*, August 29, 1885.) M., thirty-five years of age, was seized with double basic pneumonia, May 31, 1885; temperature was 104°, respiration 48. Hot flaxseed-meal poultices were applied, and 5 ♏ of tincture of aconite, fl.ʒss. of antimonial wine, and 5 ♏ of ipecacuanha wine were ordered every four hours, besides a diet of milk and beef-tea. On June 2d, the patient was much worse, the temperature was 106°, and respiration 60; he was delirious, with profuse diarrhœa, and was passing urine and fæces involuntarily. On the 3d, the diarrhœa had ceased, but the man continued very delirious, and with a temperature of 106°, and respiration 80. The whole chest was sponged with cold water every hour. On the 4th, the temperature was 103°, respiration 40, and the delirium was less. On the 5th, the temperature was 100°, respiration 34; the application of cold was continued. On the 6th, the temperature was 99°, respiration 30. From this time on, the patient gradually convalesced.

Case L. (Reported by Dr. F. Gundrum in *Medical News*, October 12, 1892, p. 473.) F., nineteen years of age, suffering from pneumonia of the whole of left lung, with a temperature of 106°, and respiration 46. On the first day the woman was wrapped, from chin to toes, in woollen blankets, wrung out of cold water (50° F.), and changed every thirty minutes. At 1 A. M., the next morning the temperature was 102°; at 6 A. M., 98°, and respiration 16. She was now thoroughly rubbed, put in warm blankets, hot bottles placed at her feet, and half an ounce of brandy administered. This treatment aborted the disease completely.

The histories of these fifty cases open up many points of interest in the discussion of the influence of ice in the treatment of acute pneumonia, and as pertinent to this subject I will append the following comments:

The resolving power of ice on the exudation. This is a marked feature in its therapeutic action, and must be regarded as one of the strongest factors in its curative influence. This can at least be partly explained on the following basis: The most apparent lesion in croupous pneumonia is an enormous distention of the pulmonary capillaries, partial or complete stasis of the blood in these vessels, and exudation of the fluid constituents of the blood, and diapedesis of white and red blood-cells into the alveoli of the lung. It is well known that cold has the power of contracting the blood-vessels, and from this action one can understand why it should exert a beneficial action on pneumonia, by giving tone to the capillaries, by restoring the normal blood flow, and thus checking the leakage. But there is often reason for believing that it also dissolves the exudate in the pulmonary alveoli. For example, there may be a pneumonic area in which there is absence of respiratory murmur, the presence of a flat percussion note and bronchial breathing — indicating, beyond doubt, that the process has passed beyond the stage of engorgement and into that in which the exudation has filled the alveoli, yet the application of ice will, in a remarkably short time, develop a new group of physical signs, such as crepitation, reappearance of the respiratory murmur, diminution of flatness, etc., indicating that a break-down occurred in the exudation. This has not only been observed by myself, but is dwelt on by Dr. Lees, who says (p. 894): "In many cases I noticed a striking arrest in the development of the physical signs," and that the ice-bag "distinctly tends to repress the inflammatory process in the lung."

Influence on symptoms. No less decided is the influence of the ice on some of the most prominent symptoms of pneumonia. The pain, difficult respiration, cough and expectoration, are remarkably relieved, and the temperature is frequently depressed two and three degrees in the course of half a day. The benefit which is exerted on these symptoms produces a very agreeable effect, and often makes the ice acceptable to those who, at first, protest against its use. This I have noticed in most of my cases and it has also been witnessed by others, as will be seen in the histories of the cases which have been reported to me.

Is the ice injurious? My own rather limited experience with the ice-treatment does not show that it is accompanied or followed by any evil consequences, nor have any of those who reported cases to me observed any such results, although some of them kept the ice in position for two weeks. Dr. Lees says (p. 894), "I have never seen any harm follow from the employment of the ice-bag in pneumonia."

Ages of patients. It is important to note in this collection that the ages of the patients to whom the ice was applied varied from infancy to old age — the youngest being six and a half months old, and the three oldest were sixty, sixty-five and seventy-four years respectively.

The results. It may be said, without claiming too much, that the results which have been obtained from the ice-treatment of pneumonia are good. Out of the fifty cases which I collected, but two were fatal, making a death-rate of four per cent. In estimating this mortality-rate it must be remembered that at least one of the cases (XIII) that died was an exceedingly unpromising one, being a sufferer from chronic lead-poisoning, and also very intemperate; while the pneumonia which caused the death of the other one (XIV) was, in all probability, an acute exacerbation of an old attack. In Dr. Lees's series of eighteen cases (from XXXI to XLVIII) no deaths occurred, nor did any occur in the eleven cases reported by Dr. Jackson. Moreover, the *Lancet*, of August 10, 1892 (p. 279), refers to an article by Dr. Fieandt, published in *Duodecim*, a Finnish medical journal (an original copy of which I am unable to secure), in which there is an account of 106 cases of pneumonia treated with ice applications by that gentleman, and notwithstanding that among these there were ten cases of double pneumonia, and that the epidemic of the disease was rather severe, he had only three deaths, or a death-rate of 2.82 per cent. Adding these cases to those reported in my collection, we have a total of 156 cases of pneumonia treated with cold applications to the chest, with five deaths, or a death-rate of 3.20 per cent. While the number of cases reported here is not very large, it is, nevertheless, evident that the results of the ice-treatment are much superior to any other with which I am familiar. Thus, according to Osler, the mortality-rate of 1,012 cases in the Montreal General Hospital was 20 per cent., while in the Charity Hospital at New Orleans it was 20.01 per cent. Of 1,000 cases of pneumonia treated in the Massachusetts General Hospital, from 1822 to 1889, there was a mortality of 25 per cent. In Dr. Hartshorne's valuable paper on "Pneumonia" it is estimated that the death-rate from this disease in the Pennsylvania Hospital during the years 1884, 1885 and 1886, was a little more than 31 per cent. In comparing the results of the ice treatment, so far as they go, with those which have been obtained from the treatment pursued in the above-mentioned hospitals, we find that they are about eight times better under the former than under the latter method of treatment. It will be of great interest to see whether these satisfactory results can be maintained by future clinical investigation, and if this can be done, even approximately, it is needless to say that a pronounced advance in the therapeutics of acute pneumonia has been made.

A member of the Yale crew was recently taken ill suddenly with abdominal pain, vomiting, and other symptoms referable to the appendix vermiformis. A New York surgeon who had written much regarding that small but important portion of the body, was summoned. As the consultant left the room the student asked his name. "That," said the nurse, "is Dr. X ——." "Good Lord!" said the young man, "then I must have appendicitis." His diagnosis was correct. — *Medical Record.*

INTRA-PERITONEAL HÆMORRHAGE.[1]

BY REGINALD H. FITZ, A.M., M.D.,
Hersey Professor of the Theory and Practice of Physics in Harvard University.

The chief end of the vast majority of medical students is to be taught to practice the various branches of medicine and surgery. As the opportunities for development in these directions are offered, the student finds himself more attracted in the one direction than in the other and his future occupation is the more medical or the more surgical, sometimes against his wishes and despite his control. He is inclined to look upon the treatment of his patient more from the medical or from the surgical point of view as his opportunities for development have been in the one direction or in the other. This inclination is nowhere more strikingly shown than in the treatment of the diseases of the abdominal cavity. The frequent inefficacy of medical treatment, the immediate benefit often afforded by the surgeon, result in making the physician less confident of his resources as they make the surgeon bolder in the employment of his methods. The practice of medicine thus tends, in many directions, to become more and more the practice of surgery. But a prevailing tendency is always liable to become extreme and should be guarded against.

In no respect has the progress of abdominal surgery led to more brilliant results than in the treatment of certain varieties of intra-peritoneal hæmorrhage. After the abdomen has been opened the diagnosis is easily made and an existing or threatening hæmorrhage is readily controlled. The surgeon is thus tempted by the success of his exploration in a doubtful case to forget that a surgical operation is a therapeutic necessity, not a diagnostic procedure. He reasons that because persons have sometimes bled to death when a laparotomy might have saved life, therefore it is necessary to give the patient the chance of having life saved by this operation, although the danger is rather suggested than imminent. He is not inclined to recognize that the benefit of the doubt may lie rather in the saving of life without an operation. The success of a successful operation is so immediate and positive that it is easy to overlook or disregard the large percentage of recoveries under medical treatment from similar symptoms with all but demonstrable similar lesions. But the finding of a blood-clot after the abdomen has been opened is no necessary justification for the search for it. The desire to do something when in doubt must always yield to the duty of doing what is most judicious.

It seems, therefore, not unprofitable to consider the subject of intra-peritoneal hæmorrhage from a general point of view, especially bearing in mind the experience of the past, with the hope that the indications for its medical treatment may be made conspicuous and the existence of limitations for its surgical treatment be emphasized.

In requesting your attention to this subject it is not planned to offer any new evidence, but to call to your mind conclusions, which have been previously presented, in such a form as may suggest that differences of opinion still exist as to the best method of treating the class of disease under consideration. To carry out this plan it is necessary to consider the various causes of intra-peritoneal hæmorrhage, their symptoms and results.

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[1] A part of the Annual Oration delivered before the Medical and Chirurgical Faculty of Maryland, April 27, 1893.

The prevailing idea that intra-peritoneal hæmorrhage is always a disease of women and is the result of ectopic gestation has a certain practical value, but is not true. Mild and fatal cases occur in man, though in far less proportions than in woman. That the hæmorrhage may take place it is essential that blood-vessels rupture. The rupture demands a weakened vascular wall. This weakening is the result of causes which may occur in either sex alike or may be limited to the female sex.

Obvious causes are the wounds which penetrate the abdominal wall or viscera from without, or which crush or tear the subjacent vessels without signs of external lesion.

The hidden causes are those which demand closer attention. Among these, aneurismal dilatation requires consideration. More common in man than in woman, abdominal aneurisms are usually irremediable. But when they affect the secondary branches of the abdominal aorta as the smaller omental or mesenteric arteries, the timely treatment of their rupture may save a life otherwise lost.

Fatal intra-peritoneal hæmorrhage is no rare result of the rupture of blood-vessels in malignant tumors of the liver, pancreas and ovaries.

The greatest practical importance, however, is to be attached to the pelvic sources of hæmorrhage. These are to be found almost exclusively in the genital organs of the female. They are the dilated and weakened vessels in the ovaries and broad ligaments as well as those developed in the course of a tubal or abnormal uterine pregnancy. In this series is to be included the hæmorrhagic pelvic peritonitis, almost invariably limited to women and usually originating from disturbances arising in the genital tract.

Hæmorrhages from scurvy, purpura, hæmophilia, infectious diseases and phosphorus-poisoning are without practical importance in the present consideration.

The effects of a rupture of the blood-vessels are, as Veit has conspicuously shown, essentially dependent upon the escape of blood into the open peritoneal cavity or into a part which has been separated from the rest by adhesions. In the former case the blood is poured out without hindrance, more or less rapidly according to the calibre of the ruptured vessel, the size of the opening, the volume of blood and the strength of the heart. The result is a hæmo-peritoneum. The liquid and clotted blood lies in the lowermost parts of the abdominal cavity beneath and between the intestines. According to the extent of the hæmorrhage the hæmo-peritoneum either proves rapidly fatal or the blood is absorbed, except in occasional instances, without the production of a tumor.

If the hæmorrhage takes place into a part of the peritoneal cavity shut off from the rest by adhesions a hæmatocele follows. The hæmatocele is usually pelvic in its origin and seat, occurs in the female, and forms a tumor. If the bleeding continues, this tumor enlarges, may subsequently rupture and produce a hæmoperitoneum. If the bleeding ceases the frequent result is the absorption of the clot. But the hæmatocele is generally seated in the pelvis, a region in which septic infection of the clot may be easy, and the infected clot then causes a destructive inflammation of the surroundings. Septic peritonitis follows or a discharge of the softened clot takes place into one of the adherent, neighboring hollow organs, oftenest into the rectum, then into the vagina, rarely into the bladder. The discharge into the rectum or vagina, if properly controlled, is usually harmless and beneficial, while that into the bladder is most serious from the extension of the resulting cystitis to the kidney, with the production of a pyelo-nephritis. Perforation may also take place elsewhere into the bowel with permanent fistulæ, through the hæmatocele, between the ileum or cæcum, into the rectum. Absorption without septic infection may take place, however, and the possibility of the occurrence of the above complications is an insufficient justification for a severe operation for their prevention.

Intra-peritoneal hæmorrhages may thus be divided into those which are immediately or remotely dangerous and those which are comparatively harmless. The immediately dangerous are such in virtue of the rapidly progressing anæmia. The remotely dangerous become so in consequence of the complications which may arise in the subsequent history of the extravasated blood.

In the practical consideration of the individual case it first becomes necessary to establish the existence of an intra-peritoneal hæmorrhage, then to determine its cause and finally to decide upon its treatment. That the diagnosis is not always easy, and is sometimes extremely difficult, is obvious to all who have had experience in the matter or who are familiar with the literature of the subject. An exploratory laparotomy has often proven to be the only means by which the diagnosis has been established and has also repeatedly made clear that there was no intra-peritoneal hæmorrhage which had been suspected.

A well person, suddenly seized with rapidly advancing collapse, presenting a pinched, sunken face, an anxious and fearful expression, cold extremities, a clammy skin, deep and sighing respiration, a hollow, husky voice, an almost imperceptible pulse, and without other objective symptoms, is, presumably, suffering from a concealed hæmorrhage. Abdominal or pelvic pain is the only positive localizing symptom, and may not be of extreme severity or of prolonged intensity. Various sources of intra-abdominal hæmorrhage may be excluded — as the stomach, intestines, urinary tract or uterus — by the absence of previous symptoms pointing to disease of these organs, and by the failure of blood to appear in the vomit, stools, urine or vagina. A gastro-intestinal source of so serious a hæmorrhage is usually preceded by long-continued attacks of pain in the region of the stomach or duodenum, or by symptoms of typhoid fever or of fibrous hepatitis. Metrorrhagia sufficient to produce so profound a collapse only occurs with placenta prævia or after child-birth, while renal or vesical hæmorrhage, even when severe, would fail to produce so much immediate disturbance.

The existence of a severe intra-peritoneal hæmorrhage is thus to be established by exclusion. Veit has shown that there are no physical signs sufficient to prove the presence of a large quantity of blood in the free peritoneal cavity. It gives rise to no more dulness than may result from intestinal contents; it offers no more resistance to the palpating finger than may be produced by coils of intestine.

The treatment of so severe an intra-peritoneal hæmorrhage as that above suggested necessarily depends upon its cause. If it is due to an aneurism of the abdominal aorta, or to a cancer of the liver or pancreas, a laparotomy is useless, except, perhaps, to offer in anæsthesia an easy means of dying. Antecedent symptoms are likely to have given evidence of these lesions and, fortunately, death is often so rapid from these causes that time is lacking even for anæsthesia.

On the contrary, immediate laparotomy is indicated for such severe intra-peritoneal hæmorrhage when an aortic aneurism or a malignant abdominal tumor are to be excluded. The causes are then to be found in a small aneurism or in an ectopic gestation.

The former is rare, of greater frequency in man; the latter common and preceded by symptoms which are often sufficiently suggestive. These are the omitted menses, the irregular metrorrhagia, decidual discharge, paroxysmal or peritonitic pain, and possibly, on vaginal examination, a tumor outside of the uterus with slight enlargement of the latter. The tumor often fails when much needed for diagnosis from simultaneous extrusion of the fœtus and escape of blood into the abdominal cavity.

The collapse may be less profound, though still severe, and be independent of hæmorrhage into the peritoneal cavity or into the hollow organs of the abdomen. A ruptured ovarian cyst, or a tumor with a twisted pedicle, may then be concerned. In either case a tumor of sufficient size to be easily recognized will be found. An eventual laparotomy is then unquestionably demanded; an immediate laparotomy may be extremely injudicious.

The cases presenting the greatest difficulty in diagnosis are those where the question of treatment may best be in dispute. Debility and exhaustion are present; unexpected, perhaps, but not extreme. There is moderate pallor and the pulse is but slightly accelerated or weakened. The abdominal or pelvic pain may be as severe and sudden as before, but the constitutional disturbance is less. Such a patient may walk into the consulting-room complaining of little else than pain. In this class of cases there is no considerable hæmorrhage into the free peritoneal cavity, but a circumscribed tumor will be found on pelvic examination. It is the nature of this tumor which demands most careful consideration. It should be determined, if possible, by other means than by an exploratory laparotomy. If this is employed the treatment becomes of necessity abdominal and surgical, whereas in many instances it should be medical, or, if surgical, then vaginal or rectal.

Such cases are almost invariably limited to women. Similar symptoms may occur in man, as in a case recently under my observation in the practice of Dr. Loring, of Newton. They proved to be due to an extensive sub-peritoneal hæmatoma from a ruptured small aneurism of the iliac artery. The pelvic tumor is to be found, at the outset, near the uterus, usually behind or at one side. It is firm, elastic, sensitive, and, when early appreciated, may be as large as an orange. Such a tumor may be a pus-tube, or an ovarian or uterine tumor, but these lack the sudden development of anæmic symptoms. It may be a retroflexed, pregnant uterus, which is to be eliminated by finding a dilated bladder and a history of urinary retention. The tumor may be due to retained menses or to pregnancy in a rudimentary horn. The tumor then forms a part of the uterus, the os being dilated and crescentic. By way of exclusion, then, the tumor is likely to prove a hæmatoma of the broad ligament.

The same causes, namely, ruptured vessels in the ovaries, tubes and broad ligaments are concerned in the origin both of the hæmatoma and the hæmatocele. In addition, the latter may be caused by an antecedent attack of pelvic peritonitis which is likely to be inferred from the previous history of the patient. The usual cause of each is to be found in an ectopic gestation, the important features in the recognition of which have already been stated. The effect upon the fœtus is likely to be the same in either case. The quantity of blood poured out is usually sufficient to destroy the fœtus if it lies between the folds of the broad ligament; and the same result is likely to follow the rupture of the sack in which the fœtus is contained. In either case the hæmorrhage usually takes place outside the fœtal membranes. Compression by the extravasated blood is the probable event in case of the hæmatoma; extrusion of the fœtus, with or without its membranes, is the probable event where the rupture of the maternal enveloping membrane takes place into the peritoneal cavity.

Unfortunately the distinction between the two is not always, perhaps not often, to be determined by physical examination. Yet the best treatment of the hæmatoma is almost universally recognized to be expectant, that is, medical, while that of the hæmatocele is often in dispute. The important practical point of distinction between intra-peritoneal hæmorrhage with and without a tumor is that delay is possible and desirable in the latter case; dangerous, perhaps fatal, in the former.

The diagnosis of the hæmorrhagic nature of the tumor often becomes confirmed in the course of twenty-four hours by the subsequent symptoms. It is likely to become larger and eventually may even be of the size of a child's head. It fills the pelvis, perhaps projects above it, and presses upon the bladder, rectum or pelvic nerves. Frequent micturition, painful stools, pains or paræsthesiæ in the legs are likely to ensue. The vaginal wall becomes depressed behind or in front. The uterus is elevated, near the symphysis or in the hollow of the sacrum, according to the retro- or antero-uterine seat of the tumor. Symptoms of a mild localized peritonitis now become apparent. There is chilliness and slight fever, the latter lasting but a few days, hypogastric and vaginal tenderness, which may remain for some time longer. The tumor tends to become smaller, denser and in the course of time, may be represented merely by a diffuse induration. The larger the hæmatocele the more prolonged the period of absorption and the greater the liability of the patient to discomfort from the associated adhesions, obliterated tubes, dislocated ovaries and displaced uterus. Dysmenorrhœa, sterility and chronic invalidism are then not unlikely results.

In other cases it becomes increased in size, with recurrence of the acute symptoms. The more frequent the recurrence the graver the condition, the greater the danger of perforation. This may be expected to take place into the rectum when the latter becomes irritable as shown by frequent mucous discharges and tenesmus. Rectal examinations may then reveal a soft spot in the elsewhere hard wall of the tumor indicating the point where the discharge is to take place. In like manner a pointing of the hæmatocele into the vagina may be shown by a yielding, bulging mass on digital examination of this cavity. The evacuation is followed by temporary relief, which may become permanent with the disappearance of the tumor. On the other hand, as before stated, if infection from the rectum or vagina takes place, leading to putrefaction of the clot and gangrene of the wall, symptoms of peritonitis are likely to appear. But the infection of the cavity of the tumor may be rendered harmless after its occurrence or be prevented from taking place without the need of a laparotomy.

In brief, the recognition of a pelvic tumor and the more accurate determination of its nature in connection with the symptoms of intra-peritoneal hæmorrhage is of the greatest importance. Small and large hæmorrhages into the free peritoneal cavity may occur with or without the presence of a tumor. Small hæmorrhages are readily absorbed; large hæmorrhages, without surgical interference, prove fatal in the course of a few hours or days and require immediate laparotomy whether a tumor is present or not.

If the symptoms are less urgent and a large tumor is present, especially if there is no history suggestive of pregnancy and there is the previous knowledge of a tumor, the laparotomy may be postponed until the patient recovers from the shock due, probably, to the twisting of the pedicle of a uterine or ovarian tumor or to the rupture of a cyst.

If the symptoms are still less urgent and a small tumor is present the case will bear watching. The condition is likely to be a hæmatocele or a hæmatoma. In either event there is no imminent or impending danger unless the hæmorrhage persists, the tumor greatly enlarges or ruptures and a hæmo-peritoneum results, in which case there can be no question of an immediate laparotomy.

Frequently the extravasated blood is likely to be absorbed without serious disturbance. The patient should therefore be treated by ice to the abdomen, rectal or vaginal enemata of cold water and by opiates for the relief of pain. Absolute rest, the use of the catheter and saline laxatives complete the requirements of treatment.

If, as stated by Gusserow, the hæmatocele is so large as to be mechanically disturbing or absorption ceases, or the circumstances of the patient do not permit slow absorption, or prolonged rest afterwards, or if the contents become infected as indicated by symptoms of septicæmia, the tumor should be opened, emptied and drained without delay. Whether the incision should be made through the abdominal, vaginal or rectal wall must be determined in the individual case, with a general tendency in favor of vaginal drainage.

The great success which has followed the vaginal incision, the tumor being opened and the clots removed, has been repeated so many times by so many operators that it is unquestioned. This too, without waiting for any of the possibilities which make the operation demanded. It has often been done in the early history of the tumor, to save time in healing or to obviate possible repeated or continual hæmorrhage. Healing may be even more rapid than after abdominal incision, days only elapsing between the operation and the recovery of the patient. The comparative merits of the various methods of treatment can only be determined after the lapse of time. The older statistics with reference to treatment by purely medical methods or by puncture, even by incision, are no absolute standard of what may be done now, with a better understanding of the etiology of the condition, a surer knowledge of the complications which may arise and a more complete appreciation of their timely prevention. The recommended early abdominal incision is not yet sufficiently proven to be without serious after-effects in the production of hernia, or in the formation of abscesses which may lead to intestinal obstruction or may act in favor of producing a subsequent intra-peritoneal hæmorrhage, from the same course, namely, ectopic gestation. That this is no fanciful assumption has been recently illustrated in the practice of my friend, Dr. F. B. Harrington, of Boston, who has twice operated upon the same woman for intra-peritoneal hæmorrhage from ectopic gestation within a period of two or three years.

The comparative results of other treatment than laparotomy as shown by Zweifel a few years ago, are as follows:

Of 144 cases treated expectantly, 16.6 per cent. were fatal; 66 cases treated by puncture, 15.1 per cent. were fatal; 30 cases treated by vaginal incision, 10 per cent. were fatal.

The medical treatment of intra-peritoneal hæmorrhage, when feasible, permits the patient to recover without operation and renders possible an easy operation when necessary, and one not demanding especial skill.

Laparotomy for intra-peritoneal hæmorrhage is unnecessary in a large number of cases and when undertaken substitutes a severe for a simple operation, and one requiring considerable technical skill, therefore not generally applicable.

In bringing these remarks to a conclusion, I must apologize for my short-comings in presenting to you rather a medical essay than an address or oration. The last term would have been so discouraging that I should have declined the attempt had I known it was to appear under this term. Professor Welch, in extending me your invitation, allowed me the usual license of selecting my subject. I trust I may have interested you in the practical side of the question, even if I have presented it under the false colors of a dignified title.

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Therapeutic Department.

CHLORALOSE.

BY F. GORDON MORRILL, M.D.,
Visiting Physician to the Boston Children's Hospital.

In a monograph recently published in Paris, Dr. A. Goldenberg has described the physiological and therapeutic action of "Chloralose," together with sixty-four clinical observations taken from hospital records and notes of private cases. This drug, which seems destined to replace in a great measure other hypnotics, consists of a combination of anhydrous chloral and glucose, and was first discovered in 1889 by Helter.[1] It crystallizes in fine needles, which are but slightly soluble (five grammes in a litre of warm water), and extremely bitter to the taste. It is usually prescribed in cachets or "perles," but in cases when this method of administration is not practicable, it can be given in liquid form:

℞ [illegible] . . . 0.30
W[illegible]
Syrup [illegible] . . . [illegible]

If given in this form, the water must be heated, and the potion should be freshly prepared each night.

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[1] Berichte [illegible]

It is an extremely active drug, and does admirable work in cases of simple insomnia. Neither heart-disease nor any digestive trouble are considered counter-indications to its use. It produces refreshing sleep, and is far more certain in its effects than sulphonal, paraldehyde, urethane, etc., while it is apparently free from the very objectionable characteristics of morphia and chloral. There is no "habit" formed, and, so far as known, no increase of dose is required when it is necessary to give the drug for several successive nights. In short, it is believed to be entirely safe when given in proper quantity, and far surer than other hypnotics in cases where no pain is present.

The medium dose for an adult is twenty centigrammes, although it has been given in an aggregate dose as large as two and a quarter grammes in a single night without accident. The usual mode of administration is to give a cachet of twenty centigrammes an hour before the expected sleep, and repeat once during the night in case the result is insufficient. The only case in which disagreeable symptoms (headache, trembling, trouble of vision, over-somnolence) have been observed were those of hysteria, alcoholism, or organic nervous affections; and in such instances a continuation of the drug in modified dose has given good results.

The first samples of this new remedy which have reached America were received May 22d, and thus far I have had opportunities to judge its effects in three instances only — in each of which, however, it has fully justified the reputation it has acquired in Paris during the past spring.

Case I. May 31, 1893. A. B., an extremely nervous woman, forty years old, seen the day after an eruption of measles had appeared. Always a poor sleeper, and at the present time unusually excited by the fact of her illness, which interferes in many ways with her comfort and produces a number of complications in family affairs. Twenty centigrammes of chloralose were given at 9 P. M., and the dose repeated an hour later, with the result of a calm and refreshing sleep of nine hours' duration. Since then a single cachet of twenty centigrammes has produced an average of nine hours' sleep without the slightest disagreeable after-effects.

Case II. June 7th. P. R., age seven. A case of organic congenital nervous trouble, into the details of which it is useless to enter. Restless nights have always been a source of great discomfort to the child and his attendants. Bromide and suphonal (ten grains and three grains each, respectively) produce only slight effects. Ten centigrammes of chloralose were given without any beneficial results. On June 8th, twenty centigrammes produced a quiet sleep of eleven hours' duration. Dose reduced to fifteen centigrammes.

Case III. June 8th. L. C., age fifty-eight, a neurasthenic woman, in whose case sulphonal does only moderately good work. A single dose of twenty centigrammes of chloralose produced eleven hours of refreshing sleep. On June 9th, the dose was reduced to fifteen centigrammes, which proved sufficient to give perfectly good nights with sleep averaging between nine and ten hours.

The drug was first brought into prominence by MM. Hauriot and Ch. Richet, in January last. These gentlemen presented the results of their researches before the Socété de Biologie of Paris, and gave details of a series of most interesting experiments on animals. Clinical research shortly followed, and so far as can now be judged, we have come into possession of a very valuable addition to our list of hypnotics. The drug will not be obtainable here for a fortnight at least, as I am informed by a patient that he has purchased what was said to be the last of the extremely limited supply which has thus far reached America.

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Medical Progress.

RECENT PROGRESS IN MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

FAMILY CARE OF THE INSANE.

Bothe[1] makes a careful and critical study of the value of the family or boarding-out system, based solely upon its trial at Dalldorf (Germany) for two years, 1890–92. Four hundred and twenty-four patients (210 men and 214 women) were cared for in 548 private dwellings. The largest number boarded out at any time was 203, or six per cent. of all asylum cases in that department. The selection of cases, whether and why they were sent home or among strangers, are fully considered, and statistics given as to suicides, escapes, deaths, etc. His conclusions are as follows:

(1) Family care is to be regarded not as a makeshift but as a necessary valuable supplement to a public asylum as one of the other equivalent forms of care.

(2) It cannot be introduced universally but it can perhaps be applied to a larger number of public asylums than at present, always as an adjunct to them.

(3) When extensively established it will relieve the asylums.

(4) It is essential for the success of family care to bear in mind that the supervision of the patients and their boarding-places must be in charge of a physician.

(5) The financial factor of a saving in the cost of support cannot be regarded as material, since the cost is only a little less than in the asylum. Beware of exaggerated hopes in this direction.

(6) When wisely introduced under not too unfavorable external conditions, the advantages of its establishment outweigh the defects so much that we are not justified in attacking its continuance on account of these defects.

In France, also, a similar provision is being adopted in the experimental establishment at Dun-sur-auron of a public colony of lunatics of the harmless class, 100 in number, chiefly senile dements. This step is the outcome of a desire long felt and often urged by various alienists that a trial of this method of care be made by the State. The matter was debated at the International Congress of Public Charities and Mental Medicine held in Paris in 1889, whereby the project was given further impetus. The satisfactory results obtained in Belgium and Scotland from caring for such insane in families has also helped to inspire the undertaking in France.

PRIMARY MENTAL CONFUSION.

Chaslin[2] makes an exhaustive study on this subject. There is a form of mental disorder usually acute which is neither mania nor melancholia. It is properly due to rapid and sudden exhaustion of the central nervous system often following, according to the latest writers, infection or auto-intoxication. It is distinct from *degeneration.*

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[1] Allg. Zeitsch. für Psychiatr., xlix, p. 650, 1893.

[2] Annales Med. Psychol., September and October, 1892.

This form is intermediate between the psychoses and insanities from pronounced and deep [structural] lesions. It often assumes the character of a genuine disease in the physical symptoms, malnutrition and fever which accompany it. On the mental side its essential characteristics are confusion of ideas consequent upon weakening and inco-ordination of the mechanism of the association of ideas of perception and personal apperception.

It may or may not be accompanied by hallucinations. Motor agitation, depression or stupor may be also associated. The emotional tone is often not marked at times; on the contrary it may present sudden changes.

The course of the disease may be remittent or paroxysmal; but it is, as a rule, an irregular mingling of states of agitation, calm, stupidity and stupor of extremely variable duration, and interrupted by intervals of comparative lucidity.

It bears a striking analogy to the insanities of chronic toxic insanity. It seems to merit the name of mental confusion under which it has been described in France, adding "primitive" in order to distinguish it from forms in which there is also confusion, but secondary and of a nature which is not thoroughly settled.

THE TREATMENT OF HÆMATOMA AURIS.[3]

For the insane ear, Williams (Henry Smith) has discovered, so far as he can ascertain, a plan of treatment by contractile collodion, which is destined to vastly diminish disfigurement from this cause, and to make deformed ears a rare sight in asylums. This does not apply to the fully formed hæmatoma, for which there is not much to be done, beyond allowing it to subside without rupture.

He justly contends that a hæmatoma should almost never be allowed to become fully developed.

To the fresh cases alone then, pressure is applied by the contractile properties of the collodion.

His results have been remarkable. Case after case, in three different asylums, were treated so successfully, that it was difficult or impossible, to detect the difference between the hæmatomatous ear and its fellow. He naturally regards hæmatoma as a preventable condition, and an ear so deformed, as a reproach to the physician under whose care it is acquired.

His rules of practice are as follows:

(1) Use contractile collodion of the best quality.

(2) Apply the collodion usually on the inner surface of the ear only. Exceptionally it may be necessary to apply it to the outer surface also, but this should be done carefully, as there is some danger of producing sloughing from over-pressure.

(3) Apply at intervals of fifteen minutes till a coating of sufficient thickness to markedly contract the ear has been applied. Re-apply as often as the coating tends to peel off, — three or four times a day if necessary.

(4) If the patient picks at the coating, restrain him with a camisole. This is only exceptionally necessary, but in rare instances it is absolutely essential. Those who abjure mechanical restraint must choose in these exceptional cases between two weeks' violation of their prejudices and a life-time of deformity for the patient.

[The only case coming under our notice since the above paper appeared yielded marvellously well to this treatment. — Rep.]

THE VALUE OF HYPNOTISM IN CHRONIC ALCOHOLISM.

Tuckey[4] states that up to January, 1892, he has treated thirty-two cases of chronic alcoholism by hypnotic suggestion, of whom twenty-one were males and eleven females. Of these he considers five as cured, as they have had no relapse, in one or two years; six have had no relapse, but have not been under treatment long enough to be pronounced cured.

Two have relapsed, but are still under treatment and considered curable.

Five cases have been benefited, as they drink less frequently. Nine have relapsed after a few months of treatment. Four have been unaffected by treatment, and in one case the result is not known.

SODIC-GOLD CHLORIDE IN GENERAL PARALYSIS.

Drs. Boubila Hadjes and Cousa[5] claim that the use of sodic-gold chloride (in beginning doses of two milligrammes, increased in equal proportions daily for fifteen days until a maximum dose of one centigramme is reached) has decided advantages. No untoward effects, like the auric fever, have been observed. The blood corpuscles and weight increase, but dynamometric tests are valueless. The drug acts most in increasing frequency and number of remissions in the early stage, and in retarding the end in the period of decline. They are inclined to refer this property of sodic-gold chloride to its alterative action.

A VARIATION IN TYPE IN GENERAL PARALYSIS.

Bullen's[6] views on this point are, that although in every particular the type of general paralysis cannot be said to have universally changed, yet it is probable that in some feature or another alteration is to be noted very generally, and that in some localities prominent changes are apparent in the whole form, and that in the following details we may especially look for evidence of variation:

(1) Less pure and sthenic type of mania, with more infrequency of occurrence.

(2) Greater frequency of primary demented cases, and an earlier onset of dementia in cases where emotional manifestations are primary.

(3) Possible increased ratio of melancholic to maniacal symptoms.

(4) Modification in the ages of patients attacked, in the duration of the disorder, and in its distribution as to sex.

(5) Variation in the relative frequency in occurrence of convulsive and apoplectiform seizures; in a less sthenic character of the former, and in diminished frequency and fatal significance of them.

(6) A possible concurrent change in the meningoencaphalic adhesions (post-mortem).

SULPHONALISM.[7]

The presence of hæmatoporphyrine in the urine appears to indicate a certain degree of disorganization of the red globules of the blood, and is usually connected with some disorder of the liver or other hæmatopoietic organ. It is a *red coloring matter* experimentally obtained by the action of concentrated sulphuric acid on the hæmin of the blood, and its clinical importance here is that its presence seems to be one of the results of the continued administration of certain drugs, sulphonal in particular.

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[3] American Journal Insanity, July, 1892.

[4] Report of Second Annual Meeting [illegible] Medical Association [illegible] American Journal Insanity, [illegible]

[5] Annales Med.-Psych., [illegible] April 1892, [illegible] and [illegible]

[6] Journal Mental Science, April, 1893.

[7] Abstract in American Journal Insanity, April, [illegible]

Two or three recent papers by Salkowsky and Hammarsten have called attention to this fact, which seems to have been noticed as early as 1889 by Stockvis, and in 1890 by Rankin and Pardington. The discoverer of this substance, Neucki, from experiments on rabbits, concluded that it was non-toxic, but Salkowsky believes the contrary as regards the human species.

In any case it indicates a considerable general disorganization of the hæmaglobin of the blood.

He estimated the quantity eliminated daily in the urine of which he examined samples, as .87 grammes, which would necessitate the disorganization of 18.5 grammes of hæmoglobin or one thirty-second of the whole average quantity contained in the blood.

In Hammarsten's cases it appeared that the red urine followed the long continued use of the drug, in one after 106 grammes had been taken in daily doses of one or two grammes. It regained its normal color nine days after cessation of the treatment. In another, 84 grammes had been taken at the same daily rate, and the urine was of the color of red wine.

It was normal after fifteen days intermission of the treatment and again red on its renewal after the administration of six daily doses.

It would seem, therefore, that we have here a contra-indication to the long-continued usage of sulphonal, that it disorganizes the blood, and certainly, in this light, a means of recognizing its over use.

PROLONGED FEEDING BY STOMACH-TUBE.

Yellowlees[8] records the following case: A lady, aged forty-four, was admitted in January, 1876, laboring under melancholia, with delusions of dread and suspicion, especially that her food was poisoned. In September of the same year her refusal of food became so obstinate and her resistance so determined that it was necessary to resort to the stomach-tube. Every attempt to feed her otherwise failed. She could not be made to swallow even a teaspoonful of water, but allowed it to pass into the air passages rather than yield; and she was fed with the tube three times daily till May, 1885, *a period of eight years and eight months.*

During all this time she was very miserable, and kept continually repeating the doleful refrain, "you're going to kill me; you're going to kill me. I know you are going to kill me." The spell was broken almost by accident. Entering the ward when she was just about to be fed, Dr. Yellowlees made another attempt with the spoon. In the struggle her chair was tilted backward. In terror of falling she forgot for a moment to resist, and suddenly swallowed the spoonful of beef-tea I had put in her mouth. She seemed surprised and shocked, but the advantage once gained was followed up. By very slow degrees she was made to swallow all the beef-tea which had been prepared for the tube, and was then told that, having taken it once, she must take it always. Many a tedious struggle it cost the nurses, but at length they triumphantly reported that she had used the spoon with her own hand. From this point recovery though slow and gradual was uninterrupted. She refused to leave the infirmary ward and the nurses to whom she owed so much, became useful, cheerful, intelligent, and full of interest in others, and was discharged recovered in February, 1891, after a residence of over fifteen years. She is still quite well, and the recovery seems not only complete, but permanent.

TRIONAL AND TETRONAL AS HYPNOTICS AND SEDATIVES FOR THE INSANE.

Mabon's[9] conclusions from a careful series of investigations with these drugs are as follows:

These new remedies both have a marked hypnotic and sedative action, but trional appears to be the more serviceable as a hypnotic for the insane.

On the other hand, small doses of tetronal appear to give the best results as a sedative. As a rule, the hypnosis which is produced is calm and quieting and resembles very closely natural sleep.

In a few instances unpleasant after-effects are noticed, but in no case do they continue long nor are they at any time alarming. They do not depress the heart's action.

In the majority of cases fifteen grains (one gramme) of trional given in hot milk at bedtime will produce sleep of from six to nine hours' duration which is not accompanied by dreams.

The time it takes to produce this effect, is, in favorable cases, from fifteen to forty-five minutes, although it may be prolonged to over two hours.

With tetronal it is found that generally fifteen grains (one gramme) are required to obtain the same results, and as this drug is twice as expensive as trional the latter is to be preferred, as a rule.

Both of these drugs have the effect with some patients of producing sleep for two nights after a single administration.

Their sedative action appears to be most satisfactory, and with few exceptions does not produce a drowsy or stupid condition.

The dose of trional as a hypnotic is from ten to thirty grains (grammes .66 to 2), but it is advisable to begin with fifteen grains (one gramme).

As a sedative ten or fifteen grains (gramme .66 to 1) at least are required, but in some patients even forty-five grains (three grammes) will not produce any effect. The dose of tetronal is from five to thirty grains as a hypnotic, but in the majority of cases fifteen grains will be required to produce a satisfactory sleep.

As a sedative five or ten grains (gramme .33 to .66) given once or twice a day will generally prove to be of benefit.

THE INFLUENCE OF DISEASES OF THE EAR UPON THE DEVELOPMENT AND COURSE OF INSANITY.

The following is an extract by Ireland[10] from a *résumé* of Dr. Bjeljakow, who has studied the subject in a hospital of St. Petersburg. He has confined his observations to cases where there was distinct inflammation of the middle ear.

Out of 135 post-mortem examinations which he made during four years, 17.12 per cent. suffered from internal otitis. Of these, one of the patients had melancholia, one paranoia hallucinatoria acuta, eight paranoia hallucinatoria chronica, two secondary dementia, three epileptic insanity, four general paralysis, one acute delirium, one senile dementia and three hebephrenia.

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[8] Report for 1891 of Glasgow Royal Asylum; also American Journal Insanity, October, 1892.

[9] American Journal Insanity, April, 1893.

[10] Journal Mental Science, April, 1893.

The author, at the end of his paper, gives the following conclusions:

(1) An inflammatory process of the internal ear is frequently the cause of mental derangement, especially of insanity accompanied by hallucinations.

If the local inflammatory process takes an unfavorable course the insanity often passes into secondary dementia, which, otherwise, this form of insanity is not so liable to do.

One-sided hallucinations of hearing are very frequently the result of a heightened excitability of the cortical centres, the result of the transmission of the irritation from the auditory nerves.

(3) Hallucinations of hearing on both sides, which support the hypothesis of the independent function of each hemisphere, may be caused through disease of the auditory apparatus.

(4) Irritation of the organ of hearing frequently does not stop at exciting hallucinations of hearing, but as a result of the influence of this sense upon the others, it also excites other hallucinations, especially those of taste, smell and general sensibility.

The character of the delusions of the senses is tinged by the personality of the patient.

(5) In many of these patients, who suffered from ear disease, there was found a hyperæsthesia of hearing which, as a sequel to noises or musical sounds in the ear, becomes changed into a diseased sensation.

At the same time the sensibility to hearing outward sounds is not increased, but, for the most part, diminished.

(6) The overflow of saliva, which often accompanies suppuration of the middle ear, is caused by irritation of the chord and the nerves of the tympanic plexus.

The hypochondriac depression and pain about the præcardium, which from time to time trouble these patients, may be explained through irritation of the nerve vagi of the auricular branch and the propagation of this irritation to the auditory brain centres.

(7) The connection of disease of the ear with insanity accompanied by hallucinations is only observed in cases where mental activity and apprehension are not yet much diminished.

(8) Epilepsy seems sometimes to depend upon disease of the labyrinth.

The irritation, coming from inflammation of the middle ear, may assume the form of a false general paralysis.

(9) Hallucinations of hearing, though rare in general paralysis, may, when they appear, be the result of otitis on one side. In this case the hallucination is generally confined to the same side of the brain.

ELECTRO THERAPEUTICS AND SUGGESTION THERAPEUTICS.[11]

Moebius has thrown a bomb into the camp of the German electro therapeutists, in the shape of five theses in which he denies very broadly that electricity has any curative qualities *per se.* He claims that in eighty per cent. of all cases in which its action seems beneficial, this is due to its psychical not its physical influence.

Eulenberg has undertaken to answer Moebius' objections. In regard to the first point, that it has not been proven that electricity has a curative action on organic paralysis, and that paralyses which improve under electricity would do so without it, Eulenberg points out that the recovery would be slower and not so complete, and asks whether the results obtained in paralyzed animals are due to suggestion.

Moebius's second and third theses are: that many functional troubles are relieved by electricity and also by suggestion, *ergo:* electricity acts by influencing the mind only.

Eulenberg points out that these troubles are also relieved by morphine, atropine, bromides or arsenic, and asks whether these, too, act psychically, as well as massage and hydro-therapy.

The fifth thesis declares that the extreme variation in action of electricity, both galvanic and faradic, can only be explained by assuming that it acts by influencing the mind of the patient. Eulenberg points out that we are dealing with vital processes and not with dead material, and that we cannot predict the action of such well-known drugs as morphine and chloral in all cases. While combating Moebius's heresy in regard to the action of electricity, Eulenberg admits that Moebius has done a good work in pointing out the uses and benefits of psychotherapy, and calls attention to the facts that electricity as administered by the non-expert physician, is liable to be the failure that Moebius has described, and that general knowledge of its therapeutic application has not kept pace with the distribution and improvement of the electric armamentarium.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

The sessions of the Sections in Medicine and in Surgery were held on Tuesday, June 13th.[1] During both days the Bacteriological Department of the Harvard Medical School gave an exhibit of cultures of various bacteria, together with demonstrations by the microscope, at the Medical School. There was an exhibit of surgical appliances, etc., at Mechanic Building. The Disinfecting Station of the Boston Board of Health on Swett Street, near Chester Park, was open to Fellows of the Society.

The One Hundred and Twelfth Annual Meeting was held in Boston June 14, 1893, the President, Dr. James C. White, in the chair.

Dr. Z. B. Adams, of Framingham, was elected Vice-President; the other officers were re-elected.

The Secretary reported that during the year 134 members had been admitted and that 34 had died.

Papers were read as follows:

A CONSIDERATION OF ERYSIPELAS OCCURRING DURING THE PUERPERIUM,[2]

by Dr. C. W. Galloupe, of Boston.

DIPHTHERIA AND OTHER MEMBRANOUS AFFECTIONS OF THE THROAT,

by Dr. F. H. Williams, of Boston.

Discussion by Dr. W. T. Councilman, of Boston.

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[11] Review of Insanity and Nervous Diseases, June, 1893.

[1] The proceedings will be published later.

[2] To be published later.

THE ANNUAL ORATION [3]

was delivered by DR. J. T. G. NICHOLS, of Cambridge.

THE ANNUAL DINNER

was served at one o'clock, there being about eight hundred and fifty members present.

At the close of the dinner the Anniversary Chairman, DR. GEORGE W. GAY, of Boston, spoke as follows:

It is my privilege, as well as my pleasure, to bid you welcome to the one hundred and twelfth anniversary of this venerable Association. We have the proud satisfaction of being one of the oldest as well as one of the most vigorous medical societies in this country; and it is fit, that once a year, at least, its members should come together, not only to exchange ideas and opinions upon purely professional topics, but that by personal contact we may broaden our sentiments, enlarge our sympathies, and be stimulated to still greater efforts in the future.

This Columbian Year is an especially interesting one for all true Americans. It is a year in which this country will be placed before the world, as she has never been placed before, and shown to be one of the leading nations on the earth. The greatest Exposition the world ever saw, now being held in the Queen City of the West, can but show that our country occupies a foremost rank in her agricultures, her manufactures, her mineral resources, her railroads, her homes, her schools, her churches, her libraries, her hospitals, her charitable and reformatory institutions — in almost everything, in fact, which goes to make a great, a prosperous, and a happy people.

That the profession of medicine and surgery has kept pace with the progress and development so evident in the other arts and sciences, cannot be gainsaid. As an illustration, suppose that Christopher Columbus should honor our city with his presence upon this anniversary, and while strolling about our narrow and tortuous streets, seeking for some familiar landmark, or noting the wonderful changes of four hundred years, he should come in contact with one of those marvels of modern civilization, an electric-car, and should receive a compound fracture of the leg requiring amputation.

Had this operation been necessary during the great navigator's first visit to these shores, no anæsthetics would have been administered, but he would have been held by main force, and would have suffered untold agony during its performance. The stump would very likely have been plunged into boiling oil to control the hæmorrhage, and then would have been wrapped in all sorts of useless, and worse than useless nostrums and appliances, in accordance with some tradition which had come down from remote ages. The convalescence, if he were so fortunate as to have one, would have been long, tedious, and full of suffering and danger; and he would have been a cripple for the remainder of his life.

How different would be our distinguished friend's experience at the present day under a similar misfortune! His treatment would be the same as is given to the laborers who are injured in our streets every day. He would be carefully placed in an ambulance by those especially trained for the work, and taken quickly to one of our large hospitals, than which there are none better in the world, and in which is to be found every device known to science or suggested by experience, for the care of the sick and wounded. He would then inhale that Boston-born nepenthe, one of God's best gifts to man, and while wrapped in its gentle embrace, and dreaming of home and friends among the vine-clad hills of sunny Spain, the painless operation would be performed. The limb would be removed, the hæmorrhage would be checked with a bit of delicate embroidery silk, the wound dressed for the only time in soft muslin; and the Great Captain would wake and find himself in that bed so graphically described by Hood, as "a Heaven upon earth to the weary head." If need be, the anæsthesia would be prolonged by the juice of the divine poppy; and his convalescence would be short, safe and not unpleasant. He would be well in a fortnight: and with the aid of an artificial limb, the distinguished navigator would again take his place among his fellow-men, and be enabled to prosecute those wonderful discoveries which have so justly stamped him as a benefactor of the human race.

This is an illustration of the progress made in only one department of our profession. Equally important advances have been made in other directions, until it may be said without fear of contradiction, that human life was never so well preserved, and that human ills and injuries were never so well cared for, as they are at the present time, and nowhere better than in our own country.

Yet, notwithstanding all that has been done by the profession, our work is by no means finished. There still remain to be solved great problems of preventive medicine, while the field of research in bacteriology is almost boundless in extent, far beyond the comprehension of even the most sanguine of the present day.

It is to be hoped that occasions like this may give us new courage and fresh incentives to do more and better work in the future, so that on looking back from each mile-stone on our way, we can see that real progress has been made in our efforts to benefit mankind.

Dr. Gay then offered the first regular sentiment, as follows:

The Commonwealth of Massachusetts: Ever mindful of the prosperity and well-being of her citizens, she deserves our fealty and our respect.

LIEUTENANT-GOVERNOR WOLCOTT said that he testified to the respect and confidence in which the Society is held in the State. In common with the other two learned professions, medicine has made great advances, is still making them, and shows every prospect of increasing its usefulness in the future. Two customs of the medical profession impressed him especially; one, the unselfishness with which members, who by superior genius or hard work had discovered some new and useful instrument or method of treatment, unhesitatingly offered it to the world; the second, the fact, which was so common that the community takes it as a matter of course, namely, that every poor man who is injured, receives the same treatment, from the same men, as those whose means are unlimited.

The Clergyman and the Physician: Co-workers for humanity, may their relations in the future be even more cordial and intimate than in the past.

REV. CHARLES G. AMES compared the two professions, and pointed out in a good and amusing way a few of the similarities and differences between them.

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[3] This oration will be published later.

Harvard University: May she ever continue to give her graduates in medicine a sound, practical education in all that pertains to the care and cure of the sick and wounded.

President C. W. Eliot said that he supposed that the members wished to hear about medical education. In spite of the doubt of the effect of a compulsory four years' course upon the number of students, he was glad to report that in the first year of the lengthened course more students had entered the school than ever before. Another step in advance may now be discussed. He believed that the cause of medical education would be advanced by requiring a degree in arts or sciences for admission to the medical school. It had been objected that bright and worthy young men would by this be kept out of the profession. He agreed that natural advantages might be of more value than long training in making a valuable physician; but he asked that the future physician might have both, and believed that when once established the necessity of more preparation would not deter proper men from entering.

To the Members of our Profession, living and dead, who served their country in the War of the Rebellion with the most arduous, faithful, and self-sacrificing devotion to duty, we tender our most respectful consideration.

The innate modesty of the army surgeons precludes a response to this sentiment from them; but I have the great pleasure of presenting a gentleman whose record as a soldier is even more brilliant than as a physician, upon whom Congress bestowed a medal for "conspicuous gallantry in action," and who, by his courage and energy at a critical moment at Gettysburg saved East Cemetery Hill, and probably our right flank, which alone entitles him to the respect and esteem of every lover of his country — Captain, or as you best know him, Dr. Edward N. Whittier.

Dr. Edward N. Whittier described eloquently the different opinions which the combatant part of the army held of the military surgeon in the time of war. Also the self-sacrifice and devotion of many surgeons, far exceeding what they were called upon to do by any army regulations.

The Medical Profession of Massachusetts extends its most cordial greetings to their Fellows of the Empire State, who are represented upon this occasion by one, whom we all delight to see and to hear, Prof. Wm. H. Draper, of New York.

Prof. Wm. H. Draper, although he had the misfortune to live in New York, and never to have enjoyed the benefits of a Harvard degree, felt that he belonged here biologically, as his ancestors came from Roxbury, which has now absorbed Boston. He was endeavoring to repair these losses as much as possible by sending several sons to Harvard, in spite of the fact that he is a trustee of Columbia.

The Doctor and the Lawyer: While one is looking after our body, the other is watching our estate. May both be equally successful in their efforts to serve the people.

Mr. Alfred Hemenway, in responding for the law, told several stories, showing that in all probability, neither profession is absolutely perfect, or else that they are sometimes misjudged.

American Medicine: May it take the position among the nations to which its proficiency entitles it.

Prof. Wm. Osler eulogized the Massachusetts Medical Society, and mentioned ten of the most important advances in American medicine begun or largely introduced by its members.

Medical Expert Testimony, more than all others, should be given without fear, and without favor, independent of both parties, and unbiased.

Mr. H. W. Chaplin said that a jury was often called on to decide questions in medicine which could not be decided by the most eminent medical authorities. Also, the present system of offering expert testimony made it impossible for them to judge of the relative importance of testimony offered by opposing experts. The medical profession could do something to remedy this unsatisfactory state of things by declining to act as experts except after proper deliberation.

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AMERICAN SURGICAL ASSOCIATION.

Annual Meeting at Buffalo, N. Y., May 30, 31, and June 1, 1893.

(Continued from No. 24, page 605.)

SECOND DAY. — MORNING SESSION.

The session was held at the Buffalo General Hospital, where a number of interesting cases were exhibited to the Association.

AFTERNOON SESSION.

The first paper, by **Dr. C. B. Nancrede**, of Ann Arbor, was on

SURGICAL TREATMENT ON CERVICAL, THORACIC AND ABDOMINAL ANEURISM.

Dr. Nancrede's conclusions were as follows:

Cervical Aneurism.

(1) All methods should be supplemented by recumbency and diet.

(2) Proximal compression, when feasible, should always be tried, and, where the arterial coats are seriously diseased, should supersede ligation.

(3) Needling should supplement pressure when the case is progressing rapidly. Possibly it is advisable in all cases suitable for compression, and is certainly to be employed where this method fails in cases with highly atheromatous vessels.

(4) Proximal ligation, having been rendered much safer of late by the use of aseptic precautions, less absorbent ligatures, and the avoidance of all injury to the arterial walls by employing the stay-knot, is permissible when the arterial walls are relatively sound, until experience decides whether or not needling is superior in its results.

(5) Since recurrence after proximal ligation almost certainly results from non-deposition of white thrombi and their maintenance in contact with the aneurismal wall from lack of proper changes of its lining, needling is clearly indicated.

(6) Where the location prevents proximal arrest of the blood-current, needling is the best operation; possibly, distal compression — rarely feasible — might aid in the deposition of thrombi.

(7) For the reasons already given, although occasionally successful, the indications for the permanent introduction of such foreign bodies as wire, horse-hair, etc., into aneurismal sacs are so much better met by needling that such procedures had better not be adopted.

(8) The modern revival of the older method of extirpation of aneurisms, should not be attempted for spontaneous cervical aneurisms.

Thoracic Aneurism.

(1) All methods should be aided by the employment of rest in bed, and proper diet.

(2) The permanent introduction of foreign substances should not be employed.

(3) Needling should be tried, aided by distal compression when feasible during the use of the needles; if this fails, distal ligation should be resorted to.

(4) Distal interruption of the blood current by simultaneous ligation of the carotid and subclavian arteries may be tried.

(5) Needling is indicated when complete or partial failure follows distal ligation.

Abdominal Aneurism.

(1) All methods should include recumbency and diet.

(2) Needling, when this can be done without injury to the hollow viscera, is the most promising plan.

(3) Proximal or distal compression may be tried with or without needling, but to be effectual must be done under anæsthetics.

(4) The permanent introduction of foreign bodies into the sac is inadvisable. (See 7, Cervical Aneurism.)

Dr. W. W. Keen, of Philadelphia, agreed as to the importance of rest in the recumbent position and restricted diet. He had not as yet employed needling in any case. The method is still on trial. The introduction of foreign substances into the sac does not seem to be altogether logical, nor have been the results satisfactory.

Dr. P. S. Conner, of Cincinnati, said that he was disposed to look upon operative procedures in aneurism with more favor than he did a few years ago, for these methods have lessened the risks and by ligature of the artery you secure for a time such quietude as cannot be secured in any other way.

Dr. T. S. Prewitt, of St. Louis, fully agreed with the previous speakers as to the importance of absolute rest and restricted diet.

Dr. Jos. Ransohoff, of Cincinnati, in one case of aneurism at the root of the neck, had transfixed the sac by two needles, which were allowed to remain ten or twelve hours. This was followed by indescribable hardening in the sac. In this case, rest could not be maintained. Two weeks after the needle operation was done he left the hospital, and died some time later from pressure of the aneurism upon the trachea.

SURGERY OF THE RECTUM,

by Dr. A. G. Gerster, of New York.

The paper was based in part upon the cases treated at Mt. Sinai Hospital, New York, during the four years ending January 1, 1893. During this period, 557 patients with rectal disease were admitted; 280 of these were classed under the head of hæmorrhoids. Next in frequency were fistula.

Hæmorrhoids. — In recently developed and moderate cases depletion of the portal circulation by salines, etc., is often sufficient. In the way of operation, decided preference was given to the clamp and cautery, which was always chosen in the absence of special indication in favor of any other method. After thorough stretching of the sphincter and proper preparation of the gut by adequate laxation, this process has given invariably satisfactory results. Whitehead's or Lange's operation was reserved for the more aggravated cases, characterized by prolapse of the anal or rectal mucous membrane. The result of this operation, if the essential points of the technique are faithfully carried out, are more brilliant and rapid than those of any other known method.

Fistula in Ano and Ischio-Rectal Abscess. — One hundred and eighteen cases of fistula had been operated upon. The average time needed for cure was eighteen days, and varied from five to sixty-five days. Shortening of the time required for healing was accomplished by a careful excision of the pyogenic membrane, membranæ of the fistula, and immediate catgut suture of the wound in tiers.

Among the 49 cases of ischio-rectal abscess there were some dreadful forms of destructive phlegmon of the ischio-rectal connective-tissue. Over one-third occurred in diabetic subjects. The treatment consisted in converting the irregular burrows into a simple and shallow, often very extensive, wound. This was followed by immediate improvement, and a marked diminution in the amount of sugar in the urine.

Ulcers of the Rectum and Fissure in Ano. — The cases of ulcers were treated by excision and suture, with satisfactory results.

Cicatricial Strictures of the Rectum. — Extensive and mostly intractable ulcerative proctitis was observed six times, all in women. In four cases, linear proctotomy and gradual dilatation gave moderate alleviation. In two cases, inguinal colotomy was done. In one of these cases excision of rectum was later resorted to, with a fatal termination due to collapse from acute anæmia.

Prolapse of the Anus. — Eleven cases were treated, mostly children of tender age. The linear application of the actual cautery was generally followed by a cure.

Rectal Polypus was treated in seven cases, mostly children, by ligature and ablation. An eighth case, one of multiple adenoma of the rectum, was also treated. The masses were burnt off, or tied off by ligature. Four weeks later, coccyx and portion of sacrum removed. Rectum was laid open, and a number of adenoma, high up, were removed. The wound was left open, and at subsequent periods other tumors were removed as they formed.

Rectal Carcinoma. — Seventeen cases of this were observed. Five cases declined operation, and in three no operative treatment was considered advisable. In the remaining nine cases, inguinal colotomy was done five times, with one death. Kraske's excision of the rectum was performed three times, with one death, and once the old-fashioned perineal extirpation was successfully resorted to. Cicatricial or neoplastic stenosis of the rectum was always considered an ample indication for the performance of colotomy. Colotomy was done as follows: After thorough purgation, a longitudinal incision was made two inches to the inward of the left anterior superior spine, beginning two inches above Poupart's ligament. After division of the peritoneum, it was attached to the skin by a few silk sutures. The colon was sought for and withdrawn sufficiently to bring the mesentery of the middle of the coil to the surface, then a long shawl-pin is passed through skin and peritoneum on one side, then through the mesentery behind the gut, and finally through the peritoneum and skin on the other side. A circular continuous suture is run around the incision. Forty-eight hours later, the gut is opened by a transverse incision, reaching nearly down to the mesentery.

Dr. L. S. Pilcher, of Brooklyn, said that in dealing with hæmorrhoids he had usually employed ligation and removal, but in the more severe cases had used excision by the Whitehead-Lange method. The results had been so satisfactory that he had not employed the clamp and cautery. Among the disadvantages of the method of excision are the length of time required and the tendency to free bleeding.

In fistula, good results had been obtained in a number of cases by dissecting out the entire tract and applying sutures. This is not applicable to all cases.

Dr. H. H. Mudd, of St. Louis, said that some time ago he had given up the use of the ligature on account of the pain caused by it, and had substituted the use of the clamp and cautery for a period of two years. He had two severe hæmorrhages while using this method, and did not consider it as safe as the ligature. He now uses the ligature in a modified way. He cuts through the portion of tumor on the skin surface and then applies the ligature to the upper portion of the mass.

The cases of cancer of the rectum that he had seen had usually been at a late period. He had done two extirpations by the perineal method with success. He had attempted removal after excision of the coccyx and sacrum without success. In one case he had excised the upper portion of the rectum through the abdomen, and made an end-to-end anastomosis with success.

Dr. T. S. Prewitt, of St. Louis, held that where inguinal colotomy is done in cases in which there is no hope of restoring the natural passage, it is better to divide the bowel entirely, and thus prevent the passage of fæcal matter into the distal portion of the intestine. He objected to the closure and dropping of the distal end, for there may be a collection of secretions in the bowel which it is desirable to wash out, and this can be done conveniently if the opening is allowed to remain.

Dr. Roswell Park, of Buffalo, exhibited

ANATOMICAL SPECIMENS ILLUSTRATING A METHOD OF PREPARATION.

Preparations of joints were shown, made thirteen years ago, in which the joints were still movable although they had been exposed to the air.

Dr. Park also made a

REPORT OF AN ATTEMPTED BLOODLESS OPERATION FOR MALIGNANT POLYPUS SPRINGING FROM THE BASE OF THE SKULL.

The case was one of rapidly-growing malignant tumor completely filling the pharynx, in which operation was attempted at the patient's request. In order to lessen danger from hæmorrhage, he adopted the method suggested by Senn, of isolating the trachea and passing a rubber tourniquet around the balance of the neck; while there was no arterial hæmorrhage there was excessive venous bleeding. The jaw was resected, and the malignant material removed. During the operation respiration ceased, and efforts at restoration were required for forty-five minutes before the operation could be completed. The patient left the table in apparently good condition, but died the next morning from shock, there having been no bleeding.

THIRD DAY. — MORNING SESSION.

The first paper was entitled

THE PRESENT POSITION OF THE SURGERY OF THE PROSTATE,

by **Dr. J. William White**, Philadelphia.

In regard to the nature of the prostatic enlargement it was held that the prostate gland was a part of the sexual apparatus and not chiefly an accessory organ of micturition, and that the growth or growths which make up the enlargement are analogous to the fibro-myomata so frequently found in the uterus.

The changes in the bladder are due to the mechanical obstruction, the circulating disturbance produced by pressure on the prostatic veins, and to septic infection.

The symptoms of prostatic enlargement were discussed at length. In regard to treatment. Purely expectant treatment is proper only where the enlargement has produced no symptoms and catheterization is easy and shows no residual urine. Ergot is the only drug that offers any prospect of usefulness, but it is far from demonstrated that it has any distinct effect. Palliative treatment, consisting in the systematic use of steel sounds for dilatation and the employment of the catheter, is of great value in a large number of cases.

The following operative measures were discussed:

(1) Overstretching of the prostatic urethra. This is *not* likely to be followed by good results in cases where the median lobe and the vesical neck are chiefly involved. In lateral hypertrophy, where the urethra is simply narrowed, it may be of use.

(2) Perineal prostatotomy should be regarded as that of choice in cases in which with marked diminution of the expulsive force, and with cystitis there are evidences of widespread degenerative disease or of distinct renal disease, toxæmia and general feebleness.

(3) Perineal prostatectomy. Where the growth can be reached by the finger, and is of small size or pedunculated, perineal prostatotomy can always be converted into a prostatectomy.

(4) Supra-pubic prostatectomy is the operation to be preferred in those cases in which palliative treatment having failed there are unmistakable indications that the local conditions are growing worse, the general health remaining unaffected.

In conclusion, the speaker said that some time ago the thought occurred to him that possibly, if the analogy between uterine fibro-myomato and prostatic growth was a real one, castration might have the same effect upon the latter that oöphorectomy does upon the former. At that time he had not read of the alleged prostatic hypertrophy in eunuchs, geldings, etc. He instituted a series of experiments on dogs to determine the effect of castration on the size of the prostrate. It was found that the average weight of the prostate in dogs was 30.3 grammes. The dogs were killed at varying intervals after the operation, the longest period being 72 days, and in all there was a marked diminution in the weight of the prostate. The gland varying in weight from 2.5 grammes to 5.5 grammes, according to the weight of the animal and the period at which it was killed.

The author did not wish to be understood as advocating the measures which these studies would indicate. He simply presented the subject as a line of thought which had occupied his mind at odd times, in order to have the criticism of the Association. As regards the employment of castration as a therapeutic measure in prostatic hypertrophy, the final answer must be left with the patient. If the time comes when we can promise equivalent results to those obtained by oöphorectomy in uterine fibroids, there will probably be no lack of cases willing to submit to the operation.

THE IMPORTANCE TO THE SURGEON OF THE BACILLUS COLI COMMUNIS,

by Dr. Roswell Park, of Buffalo.

The literature relating to the colon bacillus was thoroughly reviewed, and evidence presented showing that this organism which is constantly present in the intestinal canal, is not always a harmless inhabitant but became at times an active invader, and does not confine itself to the intestinal mucosa, where it may set up most active desquamative lesions, but may pass this barrier and penetrate into the general circulation, and exercise pernicious activity in numerous other organs, and toxic effects upon the system at large.

Herniary cholera, so-called, is due to intoxication from the products furnished by the organism in a virulent condition.

From the intestinal canal the colon bacillus may ascend along the biliary passages, determining lesions in the gall-bladder or liver. It is known to be one of the frequent factors in peritonitis of intestinal origin. In the kidneys, as well as in the bladder, the colon bacillus may exert pathogenic and pyrogenic properties. The organism may be introduced from without, as upon a catheter, or may be transferred from their normal habitat by some traumatism of the natural channels. The endocardium, the meninges, the pleura, articular serous membrane and the lungs are at times not exempt from the manifestations of its activity. It is probable that there is a form of post-operative septicæmia due in no direct way to the operator or operation, but is, in fact, what it has often been called, an entero-sepsis, and due to the migration from the intestinal canal, of the colon bacillus. Constant attention to the intestinal canal should, therefore, be the watchword of the surgeon, both before and after operation.

The author reported six cases from his own practice in which the colon bacillus was found; and in some instances it was the only organism present. The cases were as follows: (1) Cancer of intestine, with abscess; (2) recurrent peri-appendical abscess; (3) acute abscess of the liver; (4) gangrenous appendicitis; (5) acute appendicitis, with perforation and obstruction of the bowels; (6) cholecystitis suppuration.

Dr. James M. Barton, of Philadelphia, presented a paper entitled

WHEN SHALL WE REMOVE THE VERMIFORM APPENDIX?

Surgeons still differ on this subject, but they are probably removing the appendix less frequently than formerly. The author had been less fortunate in those cases where he had removed the appendix, so that now in those cases where there is a circumscribed abscess with no general peritonitis and no symptoms of intestinal obstruction, he does not search for or remove the appendix. In nine cases of abscess of the vermiform appendix operated on last year, and when the appendix was not removed, all recovered. In this class of cases portions of the appendix have already sloughed away and the opening into the bowel is firmly closed, and there is little danger of fæcal matter making its exit through the appendix.

The two most fatal complications after operation are septic peritonitis and obstruction of the bowels. There is, of course, less danger of peritonitis if the adhesions are not broken down. Where there is obstruction, if the obstructing portion of bowel can be identified, it should be liberated. If it cannot be, after the abscess cavity has been disinfected, all adhesions should be separated. In this case the appendix should be removed. If there is no obstruction and the adhesions are separated, they may unite in such a way as to cause obstruction.

The following conclusions were presented:

(1) An unruptured appendix, distended and discolored, should be removed.

(2) When rupture of the appendix into the general peritoneal cavity has occurred, the appendix should be removed and the abdomen flushed.

(3) When a localized abscess that has existed for some days or weeks has ruptured into the general peritoneal cavity, the appendix should be removed and the abdomen flushed.

(4) When adhesions to the abdominal wall have formed, open the abscess and drain, being careful not to break the adhesions that separate the abscess cavity from the general peritoneal cavity. The appendix should not be searched for, nor removed.

(5) When symptoms of obstruction are present, empty the abscess (with the general peritoneal cavity well protected with gauze) disinfect the abscess cavity, then examine for the adhesion causing the obstruction, and if able to identify it, separate those adhesions only. If it cannot be identified, then separate all adhesions and remove the appendix.

(6) When abscess has formed and there is no general peritonitis or symptoms of obstruction, open the abdomen, protect the general peritoneal cavity with gauze, then open the abscess and drain. Do not search for, nor remove the appendix.

The following papers were read by title: "Cystic Growth within the Internal Condyle of the Femur," by Dr. Thomas G. Morton and Dr. William Hunt; "Gunshot Wounds of the Intestines: Report of Thirteen Cases," by Dr. Albert D. Miles, New Orleans; "Dislocation and Injuries of the Semi-Lunar Cartilages," by Dr. S. J. Mixter, Boston; "Report of Cases of Anthrax," by Dr. H. L. Burrell, of Boston; "Lymphangitis accompanied with Blood-Poisoning and followed by Multiple Abscess," by Dr. J. McFadden Gaston, New Orleans; "Clinical and Medico-Legal Observation in Certain Forms of Spinal Injury," by Dr. Perry H. Millard, St. Paul; "A Series of Operations on the Elbow," by Dr. J. S. Wight, Brookline.

The Association then adjourned, to meet in Washington the first Tuesday of May, 1894.

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THE AMERICAN MEDICAL ASSOCIATION AND THE CODE.

THE question of a revision of the Code, which had been referred to a committee to report at the recent meeting in Milwaukee, has been laid over for another year, at the request of a majority of the committee. But in the mean time it makes certain suggestions, among them the omission, as unnecessary, of all sections of the Code that describe the obligations of patients to their physicians, and of the public to the physicians.

The Code is designed for physicians, not for patients or the public, and such sections are regarded as superfluous.

The committee sees no reason why mechanical appliances used in medicine and surgery should not be patented as much as medical books are now copyrighted.

Concerning consultations the committee recommends the more accurate definition of the term "consultation," finding good reason to believe that serious estrangement has arisen between physicians because of the different ideas they attached to this term. The Code of Ethics says, that in a "consultation" the responsibility must be equally divided between the medical attendants — they must equally share the credit as well as the blame of failure. With this statement before it, it is clear to the majority of the committee that there can be no consultation when one physician meets another for the purpose of obtaining from him an account of the case, or pertinent facts of family history, or a record of the past management of the case, in order that he may more intelligently assume the entire responsibility of its future conduct. Thus, the existing Code of Ethics of the American Medical Association defines a consultation substantially as a meeting of doctors to discuss a case, to the end that they may equally share in its further management. By the same authority, a consultation is not a meeting of physicians with a case, in which one gets all the facts possible from the other or others, as a preliminary to his assuming entire responsibility in its future conduct.

From these data it is clear that usually the specialist does not consult with the general practitioner. He simply obtains all the facts the general practitioner possesses, preparatory to assuming full control of the case.

There are many other occasions for the meeting of medical men in connection with cases of sickness, that are in no sense consultations according to the existing Code. Hence the committee thinks that, in the interest of scientific accuracy, there should be a discrimination made in the matter of consultations, as present conditions differ widely from those of forty or more years ago.

Having premised this much, the committee recommends the alteration of Article IV, Section 1, page 11, Code of Ethics, to read as follows: "A thorough medical education furnishes the only presumptive evidence of professional abilities and requirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as the good of the patient is the sole object in view, and this is often dependent upon personal confidence, no intelligent practitioner who has a license to practise from some medical board of known and acknowledged legal authority to issue such license, and who is in good moral and professional standing in the place in which he resides, should be refused consultation when it is requested by the patient."

Another suggestion made was, that it would be wise to re-write the Code in phraseology so plain as to make it a practical common-sense document for daily guidance in the performance of our various duties, and an aid in meeting responsibilities incident to our professional life.

The committee found that in but few medical colleges has this document been taught, and never as a portion of the required curriculum. It is believed that professional success of the best sort depends as well upon a practical knowledge of medical manners and medical ethics as upon anatomy, pathology, therapeutics or surgery. To be master of the rules of conduct by which our neighboring doctors can be made our friends and kept such, so that the people may see that the medical men who serve them form a band of brothers devoted to the service of suffering humanity, is to possess a most desirable professional resource.

The committee finds the Code of Ethics contains the essentials for the successful conduct of a medical career, as these have been learned by the actual experience of the best members of the medical profession, from the earliest dawn of history to the day on which it was written; and it sincerely trusts that the present discussion will lead to a more intelligent appreciation of these truths by all physicians, and especially that hereafter it will be made a text-book in every medical college, and an accurate knowledge of its contents be made a condition of receiving the degree of Doctor of Medicine.

The committee deprecates all efforts to abolish, belittle, distort, ridicule or otherwise to lessen its hold upon the profession. It is a heritage, representing at once the best characteristics of our profession during all its history, and a scientific document that points out the line of greatest prosperity in the future.

It would seem far better, that in the spirit of scientific students, we patiently inquire whether in any respect the changes incident to the last half-century warrant any modifications of statement of any portion of this document, in the interest of good to all and ill to none, for the increased prosperity of medical art and science and a more united professional power over those whom we serve.

The minority report was presented by Dr. Henry Didama, of Syracuse, N. Y., and recommended leaving the Code as it now is. Mr. Ernest Hart, editor of the *British Medical Journal*, in an address (to which we shall have occasion to refer again) before the American Medical Editors' Association, delivered during this same Milwaukee meeting, expresses views which are evidently strongly in sympathy with Dr. Didama's minority report.

Mr. Hart regards medical ethics as particular cases of general ethics, constituting the bulwarks and outer fortifications of the central fortress. The Golden Rule is enclosed within the general medical ethics, but the golden rule in its concise simplicity is not in itself sufficient. An opinion which Mr. Hart elaborates in the following sentences:

> "Society has found it necessary to formulate a vast number of accepted laws of conduct which are none the less necessary for daily use because they may all be found inscribed in the ten commandments; the gospel rules of conduct for life and the whole code of modern legislation for the regulation of social relations are not superfluous because they may be traced to the simple Mosaic tablets and to the sermon on the Mount. In the complex relations of medical life, questions daily arise involving principles upon which every man might, after due thought, decide for himself — the application of principle which every man might work out if his intellect were always keen, his judgment well balanced, his interests calmly self-judged and easily put aside when they conflict with the general interest. So perfect a being might be content to be a law to himself, but for perfection it has been found in every walk in life that it is well to have in hand, stored in the memory or laid down for reference, decisions and rules already settled by the wisdom, the experience and the judgment of the wisest and best of our predecessors and our contemporaries. That is the code of medical ethics and we wise men will not despise it. Let me say in one brief sentence that many of us in Great Britain think it one of the highest and greatest claims to sympathy and respect of the American Medical Association as a representative body that it has framed and promulgated such a code, and that it has made great sacrifices to uphold it. The voice of the profession has been and is in the end the surest judge of right, and on all such questions of general conduct and universal rights it is the rank and file of the profession with whom lies the duty, the power and the privilege of decision; even in the face of opposition from those whom we delight to honor as the leaders of the profession."

In regard to the question of consultation with those professing the dogmas of the schools of sectarian medicine Mr. Hart is even more outspoken. He says:[1]

> "Some ingenuity has been exerted in endeavoring to show or to suggest that the rule that prevails everywhere, and unquestioned throughout Great Britain, forbidding such consultations, is a selfish rule and contrary to the public welfare. If it were so, it would be self-condemned, for we are probably all of us here well agreed that the fundamental principle of medical ethics is that all rules laid down as part of the code are, and must be, as much for the welfare of the whole community as for the good guidance and advantage of the medical profession as a class.
>
> "The arguments that are sometimes used to indicate that the refusal of a practitioner of good standing to consult professionally with a homeopathic practitioner is contrary to the public good and a mark of illiberality and intolerance amongst regular practitioners, are a false, fabricated, specious, and worthless plea. On what is the demand for such a consultation based? The only correct and forcible basis is that it should be for the benefit of the patient. It is sometimes said that, at any rate, the regular practitioner can and ought to give his assistance in determining the diagnosis of the case. But the answer to that is plain as noon-day. We are not here, nor do we enter the sanctuary of the sick-room to solve conundrums. The medical mission is to heal the sick. The physician fulfils his function of the *ιατρὸζ*, only when his diagnosis is to be followed by an effective treatment. Now, we all of us have the conviction that the treatment, so-called, instituted by homeopaths as such, is absolutely ineffective, and does not and cannot, if faithfully carried out in accordance with what is known as the homeopathic doctrine and method, be of any avail whatever.
>
> "Of course, it is said that very often the so-called homeopathic treatment is not carried out by homeopaths. In that case the nomenclature is itself a fraud, and we are not called upon to soil our hands by taking part in any such imposture. But we treat homeopathy and are willing to regard it as an honest delusion. The physician, however, can take no part in such delusion. If he were to accept the position of a mere solver of riddles, he would lose all that makes medicine dignified and that ennobles its functions. He would be doing worse than this in entering into a consultation with a homeopath. We are entitled to assume that the homeopathic practitioner himself believes that his treatment of infinitesimals may be of some benefit to the patient. At any rate, we may feel sure that the patient entertains that delusion, and by entering into consultation over the sick-bed, the physician would ratify by his presence that understanding. The public could not understand that fine-drawn, artificial, and unholy distinction which would allow a conscientious practitioner to stand by the bedside of a man smitten with disease, trembling, perhaps, on the threshold of death, and on the paltry pretence of assisting to clear up the diagnostic difficulties of the case, to examine the patient and leave him to the tender mercies of one who, in his heart, he believes, and who, with all his intelligence, he is convinced is a person carrying out a system of medicine, so-called, which is absolutely incapable of affording to the patient such chances of life as the advancing inroads of disease may leave. Consultation with a homeopath, regarded from this point of view (and I know of no other from which it can fairly and worthily be regarded), is worse than a sham, worse than an imposture.

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[1] Reported in Medical News, June 17th.

It is a crime. On this head of conduct there is, I have said, no division of opinion throughout Great Britain, and any physician who should break that now well-established rule would be regarded as putting himself beyond the pale of ordinary professional intercourse with his brethren; and men would refuse, and before now have refused, to consult with any practitioner who thus misinterprets the true ethics of consultation.

"No ingenuity, no special pleading can set aside, so far as I have ever been able to understand the matter, the prevailing ethical rule that underlies the decision of this particular case; and it affords, I think, a very good example of the importance of not leaving every man to draw his own conclusions and to work out his own deductions from the few central principles, but of having at hand decisions made deliberately and in general consultation on thorny points, which it requires some firmness of purpose and an immovable moral determination rightly to solve, without being misled by side issues. . . . It is one of the great titles of the American Medical Association to honor, one of its great titles to the respect and the esteem of the profession that on this matter of consultation with homeopaths it has chosen the straight and narrow path — that it has declined to be drawn off by the blandishments of those who offer a crown of liberality which looks flowery enough, but which is quickly shown, when it is handled, to be a crown of crackling thorns — one which, however decorated with the blossom of public applause, pierces the very substance of professional honor and duty. It is the liberality of a Gallio which we are invited to accept as our ensign."

We shall shortly publish an address lately delivered before one of the Massachusetts District Societies, taking a different view of this question of consultation, and one more in accordance with the apparent tendency of the majority report of the committee previously quoted. Our readers may see that however well threshed straw has been, it may still be submitted to more good threshing.

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MEDICAL AID ASSOCIATIONS IN ENGLAND.

These associations have for a long time flourished in England; and much has been said for and against them, in connection with the question of introducing them into the United States. The General Medical Council of the United Kingdom have recently made a report through a committee. This committee, although not unanimous, have found much more to condemn than to praise in these institutions. The principal objections are that the amount of work to be done is greater than can be accomplished satisfactorily, and that the excessive number of cases in many of the associations overworks the physicians to such an extent that good work is impossible. The associations make considerable profit out of the subscriptions of the members; and whereas these profits are earned entirely by the medical officers, they go very largely into the pockets of lay stockholders. In most of the associations there is a large number of persons who are perfectly well able to pay ordinary medical charges, and no sufficient reason exists for their receiving medical advice and treatment at low rates. A system of advertising or canvassing for patients is largely practised by some associations, or by the charitable societies connected with them; and in general the effect of these associations is probably bad in the case of the public, and certainly bad in that of the profession. The committee takes up the different questions systematically in its report, and recommends remedies.

As the General Council is the body which decides what is and what is not proper in professional conduct for a physician, in this connection the committee recommended that the Council record its opinion that a medical practitioner is acting in a reprehensible manner if he holds an appointment in one of these associations, the duties of which are so onerous that he cannot do justice to the cases, or if he gives certificates which are not justifiable upon medical grounds, or if he accepts employment in an association which canvasses for new members. Although the Council rejected the recommendation for the reason that the abuses did not seem sufficient to warrant official action on its part, it nevertheless voted to call the attention of the medical public to such abuses as existed, and to the unofficial opinion of the Council on the subject.

◆

MEDICAL NOTES.

Gymnastic Treatment of the Feeble-Minded. — Dr. Gulick contributes an article on this subject to *Physical Education* for June and teaches how, through the connection of exercise of muscle, it is possible to exercise and thus develop those parts of the brain that have to do with muscular contraction, and that, thus, as well as in other ways described, the brain can be stimulated to develop.

An Aid to Surgical Research. — It is said that Professor Gayet of Lyons has devised a method by which interesting cases may be followed up and the post-mortem conditions ascertained; for instance, having operated on a man for aneurism of the internal carotid, he paid the patient a certain sum for allowing the following to be tattooed on his arm: "Cured by operation of aneurism of the carotid. Please make an autopsy."

A Fever Enunciator. — The Paris correspondent of the *Lancet* describes an electrical system, recently invented, to be used in a hospital ward in much the same way as an automatic fire-alarm system in a mill. Each patient is to have in his axilla an apparatus connected with an electric enunciator, which rings an alarm if the temperature rises above a certain point.

American Medical Diplomas. — The British General Medical Council have recently resolved that the recognition of the certificates of the degrees of Doctor of Dental Medicine of Harvard University and of the degree of Doctor of Dental Surgery of the University of Michigan be suspended until further notice, and that the registrar be instructed to refuse registration of such certificates. Since 1879 these degrees have been recognized in Great Britain and registration allowed under them. The reason for suspending this privilege now, is said to be, that injustice is done to other American medical schools with equal educational standards, and to the British bodies by placing them on a level with the diplomas of the two recognized American schools which require but three years' preparation, and over which the Council have no power of visitation and inspection.

THE LUXURY OF EXPERT SURGERY. — The demand for the services of the best known and consequently expensive surgeons of London, says the *Medical Press*, has never before fallen to such a low ebb. Whatever the reason may be, it appears to be affecting consulting physicians as well. Men who have in former years made large incomes and incurred corresponding expenses, are looking forward with doubt as to what the future will bring, especially as there now seems to be a highly satisfactory standard of the public health.

THE BALTIMORE MEDICAL WOMAN. — The New York *Medical Journal* takes the following from the *Sun*, not as a just picture, but rather as an amusing letter. "The *Sun* lately published an account of the rather heartless treatment accorded by passers-by to a lady doctor of Brooklyn who had slipped on the street and received a disabling injury of her knee. Taking the affair as a text, a Baltimore girl has since written to the editor of the *Sun* as follows: '*Sir* — I know why the woman doctor you told about on Sunday had such a bad time. She is a woman doctor — that explains it. I never saw one yet who was not peculiar looking, and did not get herself up more as a doctor than a woman. They wear a sort of dress-reform costume, short skirts, no corsets, a mannish hat. Somehow or other they do not look one bit attractive or womanly. I am a good-hearted young woman, stop and give a beggar five or ten cents, help old people across streets, and all of that; and yet I would really have to make an effort to do any Good-Samaritan act to a woman doctor. Why, my brother-in-law, who is a doctor, told me he had never yet heard one of them talk about measles. It is always some horrible unmentionable disease they must harp on. You see, all that tells on a woman's appearance, even when she isn't unfortunate enough to fall down and break her knee. Under those circumstances, dear me! she must look a pretty sorry sort of object. I have always longed to be rich for two reasons: One is that I might have horses so that they need not wear check-reins, and the other is that some one would come to me for a subscription for a woman's medical college, so I could refuse.'"

NEW ENGLAND.

HARVARD MEDICAL SCHOOL ASSOCIATION. — At the dinner of the Association to be held the day before Commencement, the following gentlemen have consented to speak: Dr. J. M. DaCosta, of Philadelphia, Dr. Abram Jacobi, of New York, Prof. W. S. Chaplin, of St. Louis, and Mr. Ernest Hart, of London. A full announcement of this meeting will be found on page 636 of the JOURNAL.

FIRST NEW ENGLAND CONFERENCE OF CHARITIES AND CORRECTION. — In October, 1892, a Conference of Associated Charities and kindred societies in New England was held in Lynn, Mass., at the invitation of the local society. The attendance was so large that it was voted to meet yearly, and to enlarge the scope of the Conference, taking the name of the New England Conference of Charities and Correction. The Executive Committee then appointed has arranged for a Conference to be held in Newton, Mass., beginning Tuesday afternoon, October 24th, and closing Thursday, October 26th.

YALE MEDICAL DEPARTMENT. — The annual address in medicine will this year be given by Dr. Henry P. Walcott, of Cambridge. The date is Tuesday, June 27th, at noon.

NEW YORK.

COLUMBIA COLLEGE. — At the one hundred and thirty-ninth commencement of Columbia College, held at the Carnegie Music Hall on June 14th, the degree of M.D. was conferred by President Low on 104 graduates of the medical department of the College of Physicians and Surgeons of New York.

THE HEALTH OF THE CITY continues to be very good. During the week ending June 17th, the number of deaths reported was 792, which, while an increase of 22 over the preceding week, is 69 below the average for the corresponding week during the past five years, and represents an annual death-rate of 21.88 per thousand of the estimated population. While there was an increase of seventeen in the number of deaths from phthisis, and 10 in those from diphtheria, there was a decrease of 27 in the deaths from pneumonia, 7 in those from measles, and 7 in those from cerebro spinal meningitis.

MONTEFIORE HOSPITAL. — Ground has just been broken for the new Montefiore Hospital, adjacent to the Montefiore Home for Chronic Invalids, and designed to enlarge the field of work of that admirable institution. The Montefiore Home is a beautiful building delightfully situated on the Western Boulevard, near the Hudson River, at 138th Street; and in its wards very excellent results have been accomplished in the treatment of various forms of chronic disease. The new Hospital, which will be four stories high, with basement and mansard roof, is to be built of bluestone, with terra-cotta trimmings, and its construction will follow the general architectural plan of the Home. It is designed to make it absolutely fire-proof, and its equipment will not only include the latest and best general hospital improvements, but in the matter especially of hydrotherapy, in which department Dr. Simon Baruch, the physician-in-chief, has won such distinction, it is expected that its facilities will be more complete than in any other existing institution. The entire building is to be devoted to hospital uses except a portion of the first story, which will be occupied by a synagogue, the Montefiore Home and Hospital being supported entirely by the contributions of Hebrews. The growth of this institution has been remarkable. A two-story frame building at 84th Street and Avenue A, devoted to the care of those affected with incurable diseases, constituted its humble original quarters. For some time only Hebrews were admitted; but when the spacious Home on the Boulevard was opened, in 1886, it was made unsectarian. The new building will cost $175,000, and it is estimated that it will require, at least, $60,000 additional to fit up its appointments.

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Miscellany.

INOCULATION OF MEASLES.

Dr. Hugh Thompson, of Glasgow, describes nine cases in which he had inoculated children with fresh serum taken from blisters on patients suffering from measles.[1] He believes that four were rendered immune, and that in two the experiment failed. At the point of insertion of the serum slight measly-looking patches appeared in from one to two days and lasted for two or three days, accompanied with slight catarrhal symptoms. The serum is taken from small blisters, no larger than a measly patch, and used immediately and inserted by superficial scarifications.

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THERAPEUTIC NOTES.

Bicarbonate of Soda and Digestion. — Linossier and Lemoine in a communication to the French Academy of Medicine, conclude that bicarbonate of soda, in all doses, excites gastric secretion. According to their observations, the dose which produces the most powerful effect is one of five grammes given an hour before a meal. The action is prolonged beyond the day of administration, an increased secretion being kept up. It is essentially to be used in cases of insufficient gastric secretion, and ought to be given some time before a meal. In cases of excess of acidity it only acts as a palliative, and there is a risk of its aggravating the condition. They suppose that the administration of hydrochloric acid is of more service in diminishing the excess of secretion just in the same way that alcohol retards alcoholic fermentation, or lactic acid lactic fermentation.

Artificial Respiration. — Laborde has experimented with a method which he considers a substitute for artificial respiration in cases of asphyxia due to drowning, or from any other cause.[2] He calls it traction of the tongue. The tip of the tongue is seized and pulled upon rhythmically, imitating the rhythm of respiration. It has been tried with success in cases of drowning and of sewer-gas poisoning, also in the laboratory upon animals. His explanation is that it acts reflexly upon the superior laryngeal nerve, or some other nerve in that vicinity. He has found it also very useful in cases of simple syncope.

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[1] British Medical Journal, April [illegible].
[2] British Medical Journal.

METEOROLOGICAL RECORD,

For the week ending June 10, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	Weather.* 8.00 A.M.	Weather.* 8.00 P.M.	Rainfall in inches.
S...4	30.04	[illegible]	[illegible]	[illegible]	85	88	[illegible]	S.E.	S.W.	[illegible]	11	C.	F.	
M...5	29.88	[illegible]	91	[illegible]	78	[illegible]	71	S.W.	S.	[illegible]	[illegible]	C.	F.	
T...6	[illegible]	82	90	[illegible]	73	[illegible]	78	S.W.	W.	10	14	[illegible]	R.	
W...7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67	W.	W.	[illegible]	[illegible]	O.	O.	
T...8	30.25	[illegible]	74	[illegible]	[illegible]	[illegible]	56	N.W.	S.	[illegible]	[illegible]	C.	O.	
F...9	30.16	66	75	[illegible]	[illegible]	[illegible]	66	S.W.	S.E.	4	8	O.	O.	
S..10	29.98	[illegible]	82	[illegible]	77	77	[illegible]	N.E.	S.W.	[illegible]	11	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 10, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	[illegible] fever.
New York	[illegible]	770	[illegible]	[illegible]	[illegible]	3.38	5.33	[illegible]
Chicago	1,438,000	463	[illegible]	18.70	17.82	1.76	5.50	[illegible]
Philadelphia	1,115,562	[illegible]	[illegible]	[illegible]	[illegible]	4.32	4.08	[illegible]
Brooklyn	[illegible]	[illegible]	124	11.31	13.92	2.32	2.90	[illegible]
St. Louis	477,873	—	—	—		—	—	—
Boston	487,397	214	67	[illegible]	[illegible]	1.41	3.29	1.41
Baltimore	461,139	—		—	—			—
Washington	308,431	117	40	16.15	10.20	3.40	3.40	[illegible]
Cincinnati	[illegible]	115	[illegible]	[illegible]	[illegible]	4.35	2.61	[illegible]
Cleveland	290,000	94	[illegible]	[illegible]	[illegible]	2.12	3.18	3.18
Pittsburg	263,709	125	[illegible]	[illegible]	[illegible]	[illegible]	2.40	8.00
Milwaukee	250,000	62	25	16.10	17.71	4.83	3.22	[illegible]
Nashville	[illegible]	35	20	[illegible]	[illegible]	17.16		
Charleston	[illegible]	[illegible]	12	[illegible]	[illegible]	6.90	—	3.45
Portland	40,000	[illegible]	4	5.00	10.00	—	5.00	—
Worcester	96,217	[illegible]	[illegible]	[illegible]	[illegible]	3.13		—
Fall River	87,411	[illegible]	12	9.39	21.91	[illegible]	3.13	—
Lowell	87,191	[illegible]	16	8.16	18.36	[illegible]	2.04	—
Cambridge	77,100	[illegible]	11	[illegible]	[illegible]	—		—
Lynn	62,654	18	[illegible]	22.22	16.66	—	11.11	—
Springfield	[illegible]	14	[illegible]	28.56	—	[illegible]		—
Lawrence	[illegible]	—	—	—	—			—
New Bedford	[illegible]	16	5	18.75	6.25	6.25	—	[illegible]
Holyoke	[illegible]	[illegible]	[illegible]	16.66	16.66	5.55	[illegible]	—
Salem	[illegible]	[illegible]	—	25.00	[illegible]	—		—
[illegible]	32,140	3	[illegible]	33.33	—		33.33	—
Haverhill	31,396	[illegible]	5	8.33	8.33	—	—	—
Chelsea	30,264	[illegible]	2	6.66	13.33	—	—	[illegible]
Malden	29,394	[illegible]	[illegible]		14.28	—	—	—
Fitchburg	[illegible]	[illegible]	[illegible]	12.50	[illegible]	12.50		—
Newton	[illegible]	—	—	—	—	—	—	—
Taunton	26,972	7	[illegible]	—	—	—	—	—
Gloucester	26,688	4	1	—		—	—	—
Waltham	22,058	[illegible]	1	—	—	—		—
Quincy	19,642	[illegible]	[illegible]	[illegible]	16.66			—
Pittsfield	18,802	[illegible]	0	—	—		—	—
Everett	16,585	[illegible]	1	16.66		16.66	—	—
Northampton	16,331	—	—	—	—	—	—	—
Newburyport	[illegible]	[illegible]	[illegible]	20.00	[illegible]	[illegible]	—	—
Amesbury	10,920	[illegible]	0	—	—	—	—	—

Deaths reported 3,121: under five years of age 1,1[illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers), 501, acute lung diseases 428, consumption 356, diphtheria and croup 122, diarrhœal diseases 107, typhoid fever 65, cerebro-spinal meningitis 56, scarlet fever 49, measles 43, whooping-cough 31, erysipelas 13, malarial fever 9, typhus fever 5, small-pox 1.

From cerebro-spinal meningitis New York 22, Chicago 19, Washington 6, Brooklyn 3, Cleveland 2, Philadelphia, Worcester, Salem and Quincy 1 each. From scarlet fever New York 15, Boston 6, Philadelphia, Brooklyn and Pittsburgh 5 each, Chicago 4, Milwaukee 3, Cambridge 2, Cleveland, Washington, Springfield and Haverhill 1 each. From measles Pittsburgh 13, New York 12, Chicago 5, Cincinnati 4, Brooklyn and Cambridge

2 each, Philadelphia, Boston, Washington, Worcester and Holyoke 1 each. From whooping-cough New York 10, Chicago 5, Philadelphia 4, Brooklyn and Pittsburgh 3 each, Worcester and Lynn 2 each, Cleveland and Nashville 1 each. From erysipelas New York 5, Chicago and Brooklyn 3 each, Philadelphia and Salem 1 each. From malarial fever New York 4, Brooklyn 3, Cleveland 2. From typhus fever New York 5. From small-pox New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 10, 1893, TO JUNE 16, 1893.

The extension of leave of absence on account of sickness granted **CAPTAIN MARLBOROUGH C. WYETH**, assistant surgeon, U. S. A., is further extended two months on account of sickness.

Leave of absence for one month, from July 1, 1893, is granted **CAPTAIN GEORGE T. BEALL**, medical storekeeper, U. S. A.

FIRST-LIEUT. GEORGE D. DESHON, assistant surgeon, U. S. A., will proceed to Chicago, Ill., and report in person to **CAPTAIN LOUIS A. LAGARDE**, assistant surgeon, in charge of the Medical Section of the War Department Exhibit, World's Columbian Exposition, for such duty as may be required of him in connection with said exhibit.

Leave of absence for fifteen days, to take effect about July 1, 1893, is granted **FIRST-LIEUT. PAUL F. STRAUB**, assistant surgeon, U. S. A.

The leave of absence for seven days granted **CAPTAIN EDWARD EVERTS**, assistant surgeon, U. S. A., is extended twenty-three days.

Leave of absence for two months, to take effect on or about July 1, 1893, is granted **COLONEL CHARLES T. ALEXANDER**, assistant surgeon-general, U. S. A.

Leave of absence for one month, to take effect about the 1st proximo, is granted **MAJOR WASHINGTON MATTHEWS**, surgeon, with permission to apply for an extension of one month.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING JUNE 10, 1893.

BAILHACHE, P. H., surgeon. Granted leave of absence for four days. May 22, 1893.

PURVIANCE, GEORGE, surgeon. Detailed as chairman, Board of Examiners. May 8, 1893.

HUTTON, W. H. H., surgeon. Granted leave of absence for ten days. June 1, 1893.

HAMILTON, J. B., surgeon. Granted leave of absence for four days. June 1, 1893. Granted leave of absence for seven days. June 7, 1893.

GASSAWAY, J. M., surgeon. Detailed as member, Board of Examiners. May 8, 1893.

STONER, G. W., surgeon. To represent the Service, at meeting of American Medical Association. June 2, 1893.

IRWIN, FAIRFAX, surgeon. To proceed to Marseilles, France, for duty. May 16, 1893.

CARTER, H. R., surgeon. Detailed as recorder, Board of Examiners. May 8, 1893. To report in Washington, D. C., for special temporary duty. May 20, 1893. To proceed to Delaware Breakwater Quarantine for temporary duty. May 31, 1893. To proceed to Baltimore, Md., for temporary duty. June 2, 1893.

CARRINGTON, P. M., passed assistant surgeon. To proceed to Bremen, Germany, for duty in office of United States Consul. May 16, 1893.

KINYOUN, J. J., passed assistant surgeon. To proceed to Chicago, Ill., for special duty. May 8, 1893.

GOODWIN, H. T., passed assistant surgeon. To proceed to Detroit, Mich., for temporary duty. May 27, 1893.

STONER, J. B., passed assistant surgeon. Granted leave of absence for twenty days. June 5, 1893.

GEDDINGS, H. D., passed assistant surgeon. To proceed to Reedy Island, Delaware, for special temporary duty. June 7, 1893.

CONDICT, A. W., assistant surgeon. Granted leave of absence for thirty days. June 5, 1893.

NORMAN, SEATON, assistant surgeon. Granted leave of absence for six days. May 12, 1893.

HARVARD MEDICAL SCHOOL ASSOCIATION.

The annual meeting of the Harvard Medical School Association will be held at the Harvard Medical School, Boston, at 12 o'clock on Tuesday, June 27, 1893. At this meeting will be considered the motion to amend Article I of the Constitution, changing the name of the Association to the Harvard Medical Alumni Association.

The annual dinner will be given at the Hotel Vendome, Boston, at 1 o'clock on the same day (Tuesday). Among the invited guests who will speak are Dr. J. M. DaCosta, Professor Emeritus in the Jefferson Medical College of Philadelphia; Dr. Abram Jacobi, Professor of the Diseases of Children in the Bellevue Hospital Medical College, New York; Mr. Ernest Hart, Editor of the *British Medical Journal*, and Prof. W. S. Chaplin, Chancellor of Washington University, St. Louis. Dinner tickets will be for sale from 11 to 1 at the Harvard Medical School, and from 12.30 to 1 at the Vendome. The dinner tickets are $2.00 each.

ROBERT W. LOVETT, *Secretary*.

APPOINTMENTS.

The following appointments have been made in the Harvard Medical School: **JOHN COLLINS WARREN**, M.D., Professor of Surgery; **THOMAS MORGAN ROTCH**, M.D., Professor of the Diseases of Children; **JAMES JACKSON PUTNAM**, M.D., Professor of the Diseases of the Nervous System; **AMOS LAWRENCE MASON**, M.D., Associate Professor of Clinical Medicine.

RECENT DEATHS.

CYRUS F. CARTER, M.D., M.M.S.S., died June 14th, aged thirty-one years. Dr. Carter graduated from the Harvard Medical School in 1887, and at the time of his death was assistant physician to the department of nervous diseases at the Massachusetts General Hospital.

GEORGE FRANKLIN WOODBURY, M.D. (Harv. 1882), M.M.S.S., of Worcester, died June 18th, aged forty-two years.

MARCUS BECK, M.D., F.R.C.S., Professor of Surgery to the University College Hospital, London, died May 25th, aged fifty years.

ARNOLD PALTAUF, M.D., Professor of Legal Medicine in the University of Prag, died May 29th.

BOOKS AND PAMPHLETS RECEIVED.

Cholecystotomy. By Edwin Ricketts, M.D., Cincinnati.

On Snake Poison, its Action and its Antidote. By A. Mueller, M.D. Sydney, N. S. W.: L. Bruck. 1893.

The Sixty-ninth Annual Report of the Officers of the Retreat for the Insane, at Hartford, Conn., April, 1893.

A Case of Malignant Syphilis Resulting in Death. By A. E. Roussel, M.D., of Philadelphia. Reprint. 1893.

Acromegaly; with the Clinical Report of a Case. By Archibald Church, M.D., and William Hessert, M.D. Reprint. 1893.

Appendicitis and Perityphlitis. By Charles Talamon, M.D. Translated by E. P. Hurd, M.D. Detroit: George S. Davis. 1893.

Neuritis and Myelitis and the Forms of Paralysis and Pseudo-Paralysis Following Labor. By Charles K. Mills, M.D. Reprint. 1893.

Remarks on the Presentation of Diplomas to the Graduating Class of Barnes Medical College. By C. H. Hughes, M.D., St. Louis. Reprint. 1893.

The Clinical Value of Repeated Careful Correction of Manifest Refractive Error in Plastic Iritis. By Charles A. Oliver, M.D., Philadelphia, Pa. Reprint. 1892.

A Treatise on Ruptures. By Jonathan F. C. H. MacReady, F.R.C.S., Surgeon to the Great Northern Central Hospital, etc. Philadelphia: P. Blakiston, Son & Co. 1893.

Traitement Chirurgical des Affections Inflammatoires and Neoplasiques de L' Uterus et de ses Annexes. Deux Procedes Inedits D'Hysterectomie, etc. Par E. Doyens. 1893.

Forensic Medicine and Toxicology. By J. Dixon Mann, M.D., F.R.C.P., Professor of Medical Jurisprudence in Owens College, Manchester, etc. Philadelphia: P. Blakiston, Son & Co. 1893.

Milk, its Adulteration and Relation to Infectious Diseases, with Remarks on Food Adulteration in General. By Winslow Anderson, A.M., M.D., M.R.C.P., London, etc. Reprint. 1893.

Lessons in Physical Diagnosis. By Alfred L. Loomis, M.D., LL.D., Professor of the Practice of Medicine and Pathology in the University of the City of New York. Tenth edition. New York: William Wood & Co. 1893.

Laparotomy and Removal of Cystic Tumor (Cysto-adenoma) of Peritoneum; Formation of Artificial Anus; Subsequent Laparotomy and Resection of Colon; Closure of Artificial Anus; Recovery. By W. Page McIntosh, M.D. Reprint. 1893.

Lecture.

LECTURES ON THERAPEUTICS.

IV. Opium.[1]

BY H. C. WOOD, M.D., PHILADELPHIA,
Professor of Therapeutics, University of Pennsylvania.

When opium is taken in small dose, it produces simply a sense in most persons of *bien être*, a slight, quiet exhilaration, a feeling like that expressed by Tennyson in his famous poem, "The Lotus Eater." This period of quiet exhilarated calm will be followed, if the dose have been large enough, by and by by sleep, sleep not separable in its characteristics and its accompaniments from normal sleep. When toxic doses of the drug are taken, the first stage of exhilaration is usually very short, perhaps not present at all. And then comes sleep — sleep that is deep, but not comatose; sleep out of which the patient can be aroused to fall back again immediately into quiet slumber; sleep that is accompanied by some slowing of the respirations, which become full and deep, by slowing of the pulse, which grows somewhat in force and strength as it decreases in rapidity, by quiet general muscular relaxation; sleep that is accompanied by warm skin and especially by contracted pupils. The hours go by; and if the subject be left to himself, the sleep ever deepens, the respirations become more slow, the pulse gradually changes in character, and instead of being slow and full, grows rapid and feeble, muscular relaxation becomes more extreme, the pupils get smaller and smaller until they are very pin-points, and at last by inseparable degrees the patient slides into the full-formed third stage of opium-poisoning in which collapse and coma struggle, as it were, together, or rather, work side by side to one end. The respirations now become so distant that perhaps they are only three or four times a minute, the pulse is rapid and feeble, the surface cool and covered with sweat, and at last life goes out so silently that you scarcely know when the respirations have ceased. This is the general course of opium-poisoning in the man.

Now let us look for a moment at the effects which opium produces in the lower animals. Passing by the invertebrates to frogs, we find when we give opium or morphia to a frog that the batrachian passes into a condition of tetanic excitement, violent convulsions, excessive sensitiveness of the reflex system. Three kinds of convulsions, indeed, have been marked by different investigators as occurring in frogs — certainly a convulsion which is spinal, probably a convulsion which is cerebral, and, according to some writers, a convulsion which is peripheral; above all the dominating symptoms in the frog are those which are produced by excitement of the spinal cord. Now that is so far away from what is seen in opium-poisoning in man that we have in this drug opium the one example which has been continually held up by those who deny the validity of physiological therapeutics as proving that drugs do not act upon the lower animals as they do upon man; but, gentlemen, man is an animal, and certainly nature in all things, unless, indeed, it be in the history of drug forces, works by law. Certainly when there seem to be differences of action in drugs on different species of animals, such differences of action cannot be haphazard, but must be under the control of law. I want to dwell a little upon this point, because in opium I think we see an illustration of one of the great laws of physiological interpretation which first came to me many years ago. Passing up from the frog we get the bird, strangely unaffected by opium. At one time it was said you could not kill a pigeon with opium. That is not true. You may give a pigeon opium by the mouth, and it does not die, probably because absorption does not take place more rapidly than elimination, and so the drug does not accumulate; but if you give the opiate hypodermically, you kill the pigeon with symptoms somewhat similar to those seen in other animals. It is a difference in degree here rather than an absolute difference in kind. Give morphia to the mouse, and you see the little animal drawing himself up into a heap, walking stiffly about the table with slow painful steps, everywhere rigid, everywhere in spasm; but by and by there comes a period of sleep. Give twenty grains of morphia to the horse, and you will note a period of violent excitement — an excitement which is evidently spinal, with muscular startings and perhaps with muscular convulsions, with (in the stallion) erections of the penis and emissions of semen and every sign of spinal excitement; but by and by coma comes, and the animal dies in sleep, as the man dies in sleep. Rising up the scale of animate life to the dog, we find that the symptoms produced by this drug very similar to those caused in man — sleep quiet, and sleep out of which the dog can be roused as the man can be roused; but we note this difference, that in the dog evidences of spinal excitement are all the time present, the reflexes are overexcitable — when the animal rouses he rouses in a start, in a condition of excitement. Finally, passing to man, we get the symptoms which I sketched to you in the opening of this lecture.

Now, what do we see? We see a gradation in the production of symptoms, from the frog in which the spinal symptoms produced by morphia are predominant, up to the man in which the cerebral symptoms produced by morphia are predominant. More and more, as we rise in the scale of life, do we find the cerebral symptoms appearing. What does this mean? Simply, that as any portion of the nervous system becomes differentiated and raised to a higher line of functional activity, it becomes more sensitive to the action of drugs. In the frog the spinal cord is all life, and the brain scarcely exists. In the mouse the brain has begun to appear. In the horse the brain has grown a little more in development. In the dog you have a comparatively high development of the brain. In the man you have the brain expanded and unfolded until it entirely overshadows the spinal cord. Under these circumstances the spinal cord in the frog is the more sensitive to the action of the drug, and the spinal symptoms come on. In the man the cerebral system is more developed, and the cerebral symptoms come on. There is law and order here as everywhere in the kingdom of nature.

I do not propose to go into any careful study of the physiological action of this drug, because there are other matters connected with opium that seem to me more important. I want to view it partly from its toxicological point of view. Especially do I feel like emphasizing this on account of some recent trials in which certain things have been said and done which seem to me entirely contrary to the teaching of science.

Let us first get this thought, that in opium-poisoning we have two poisons in the blood, not one. Let me tell you an instance in my personal experience to illustrate this. Some years ago I happened to be riding in the lower part of our city, when somebody called from the sidewalk and said, "Ain't you a doctor?" I said, "Yes." "Then come with me," said the person. I went up stairs, and found a girl in a violent menstrual cramp. I prescribed one-half a grain of morphia, ordering one-fourth of the prescription to be given every hour until relief, and left. Some five or six hours afterwards, while sitting in my office, I received this note: "Come at once to No. —— Market Street. The medicine you gave that girl has killed her." I thought to myself, if that is the circumstance I better take the advice of Horace Greeley and go West rather than East. Nevertheless, facing the music, I went down, and entering a large room in the top of a factory, saw a bed around which were about fifty people. As I came into the room, I heard a man say, "It is all over; the girl is dead." I rushed into the group, caught the girl around the waist, threw her over my shoulder, carried her into another room and began artificial respiration. She was dead to all appearances. She had ceased breathing, but by and by under the influence of artificial respiration the color began to return to the cheeks, and in a little while semiconsciousness came on and she vomited. What had happened? Simply there had been an accumulation of carbonic acid in the blood during the long period of partial respiration under the influence of morphia, and artificial respiration had removed this carbonic acid and then the emetics which had been given had been enabled to assert themselves. After the affair was practically over the apothecary confessed he had put eight grains of morphia instead of half a grain in the prescription and the girl had emptied the bottle.

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[1] Delivered before the Harvard Medical School Association, May 11, 1893.

I mention this case to enforce upon you the lesson that in combating opium-poisoning we have in the advanced stages two poisons to deal with: first, the poison itself that has been taken into the stomach; and, second, the poison carbonic acid which has accumulated. And now when you have an accumulation of carbonic acid as the result of uræmic paralysis of the respiratory centre, or have an accumulation of carbonic acid as the result of paralysis of the lung or paralysis of the lower brain, don't you see you have present in that person one of the great causes of the symptoms of advanced opium-poisoning? As so I say here, as I have said before, and as has been said by others, that it is not possible to diagnose with certainty from the symptoms the existence of opium-poisoning. When the pupils are small, when we can find no other cause for the occurrence of the symptoms, we may surmise opium-poisoning, make a working or therapeutic diagnosis of opium-poisoning: but we have no right to swear away a life by saying we know a certain case was opium-poisoning because it had certain symptoms. If we are only careful enough to go no further than to say the symptoms are consonant with opium-poisoning but may come from something else, we shall not find it necessary to take back our opinion by such a statement as that of the doctor in the Harris case, who said he had seen thirty thousand cases of uræmia and four thousand cases of opium-poisoning. God save the mark!

Years ago I had a lesson taught me which might have cost a human life if an autopsy had not been made. In the hospital was a woman of bad character under the care of another woman of bad character. The sick woman suddenly developed the symptoms of opium-poisoning. I was told by the chief nurse that the woman in charge had given opium, by mistake it was thought. I worked over that woman five hours, thinking that her case was opium-poisoning, and she died. The autopsy showed that the woman died from advanced kidney disease and uræmic poisoning. There was no opium-poisoning in the case; but I was not able to distinguish the symptoms from those of opium-poisoning. As showing the difficulty underlying these cases, I remember about the same time I saw two cases. One I diagnosed to be clot in the brain, and one certainly to be uræmia; and the autopsy showed that the case I diagnosed as clot in the brain was uræmic congestion with serous exudation, and the case I diagnosed as uræmia was clot in the brain. There was hemiplegia in the uræmic case, no paralysis in the case with clot. The symptoms of various paralyses of the respiratory centre are similar, and you cannot make the diagnosis with positiveness from the symptoms.

Now, gentlemen, in regard to the treatment of this condition of narcosis. The treatment is doubly interesting to us because the treatment is not simply the treatment of opium-poisoning, but the treatment of the narcotic state, whatever produced by. Of course, in the case of any poisoning the first thing we do is to evacuate the stomach, and we remember always that mustard is an emetic to be found in every house. I shall not dwell longer upon the methods of evacuating the stomach, and shall only call attention to the curious fact, that because the alkaloid apomorphia happens to have morphia in its name, the profession have been afraid of it in morphia-poisoning. Apomorphia has no physiological relations to morphia at all; and whilst we do not or ought not to rely upon it as an emetic in cases of narcotic poisoning, it is an extremely serviceable substance as an adjuvant to other emetics, because we can give it hypodermically and because it acts so certainly and so promptly.

When I was a young man, we were told always to keep the patient suffering from the narcotic state awake. We were not told why. And we all thought, at least I thought, and I think the others did, that the sleep was something that killed people. Now, gentlemen, men die from want of sleep, but never from excess of sleep. Rip Van Winkle awoke from his many years of slumber as fresh a man as when he laid himself down in the green wood of the New York hills. Sleep does not kill a man. It is nature's restorer, not destroyer; but during the period of sleep all nerve centres grow less sensitive and the respiratory centre which in the waking movement is benumbed almost into absolute quiet by the drug opium grows more numb under the sedative influence of sleep, and therefore respiration falls more during sleep. More than this, we keep the man awake in order that by his voluntary efforts he may supply the failing automatic impulse of respiration. I have seen a man with opium-poisoning seated upon a chair taking his inspirations and expirations fifteen times a minute by word of command, precisely as the soldier in the drill moves his arm by word of command. We keep our patient awake, therefore, largely that we may make him voluntarily respire. How shall we keep the patient awake? We walk patients, pour cold water upon them, flagellate them with wet towels, and some of us beat them with clubs. I have seen the whole body of a woman almost as black as a man's coat from the beating she had received to keep her awake in narcotic poisoning. I want to call your attention to an instrument of torture that leaves no traces behind it and makes no structural lesion. I refer to the dry electric brush. If you have a powerful battery, you can produce as much nervous irritation and pain as you can by beating the patient, and this without alteration of structure. I do not believe that electricity is of any value in the treatment of the narcotic state save only for the purpose of arousing the patient.

Passing next to the consideration of drugs in the treatment of narcosis, I first want to say a word in regard to oxygen. This gas, oxygen, has been more quacked with than any other substance or agency, unless it be electricity. In experiments which I have made upon the lower animals I found to my absolute astonishment that I could not perceive any difference in the blood-pressure or otherwise whether they inhaled pure oxygen or inhaled atmospheric gas. I was very much surprised at the result; but it is in accord with the fact that I have never seen any good results from the use of oxygen in disease save only under certain conditions. I do not believe that oxygen has any power as a general stimulant. I do not believe in the normal man any more oxygen is carried by the blood because more is in the lungs than normal. When you get plenty of fresh air you fill the red blood corpuscles to their normal extent, and because there is a surplus of air you cannot have more oxygen carried by them. Pouring water into a full bucket simply makes a slop.

When, however, you have obstruction of the circulation, as in advanced pneumonia, and the blood cannot get as much oxygen as it is capable of carrying, then I believe by increasing the percentage of oxygen breathed in the air you do good. But to have an effect, you have got to keep up the use of oxygen. The supposition that the taking of a few inhalations a few times a day is going to achieve good is about as reasonable as the supposition held by the profession that little doses of hydrocyanic acid at long intervals will do good. Oxygen is a useful agent, probably, in the treatment of opium-poisoning if it be used continuously and if the patient can be got to breathe it in.

Now we come to the drugs that are used as stimulants to the respiration. And here again, a year or two ago, I suddenly woke up to a new idea; and I felt as Horace Greeley did once. The story is told of Horace Greeley that there was a very egregious mistake in one of his editorials; thinking it was the fault of a proof-reader he went to him, but was shown that he himself had written it: said Horace, "Will somebody please kick me down stairs?" Now, all through the years we have been studying drugs as respiratory stimulants by estimating or counting the effect they have on the number of the respirations per minute. It is just as sensible as the studying of cardiac stimulants would be by counting the rate of the pulse. It is not the number of times the man breathes in the minute that dominates the amount of air that is breathed, but it is the size of the respiratory movements taken along with the number: it is entirely possible that a substance may hurry the respirations and decrease the excursion of the respiratory movements. Therefore I made a research in measuring the amount of air taken in and thrown out of the lungs of the dog under the influence of various agencies. I found in the first place that there is no known agent which compares with heat as a stimulant to the respiratory centres, at least in the dog. I do not believe that the respiratory centre of the man is as sensitive to heat as is the respiratory centre of the dog, because, as you know, the dog having practically no sweat glands depends upon his respiration for the cooling of his body; nevertheless, undoubtedly heat is a stimulant to the respiratory centre of man, and we learn this first lesson always in cases of narcotic poisoning as in cases of syncopal states, to keep up the animal heat. Then I started to examine three drugs, namely, atropine, strychnine and cocaine. I found that each of these drugs has a very distinct and powerful influence in increasing the amount of air taken in and out of the lung. I found that atropine was in many instances, or commonly, the most active of these drugs; but I found, also, that it was not the most certain in its action of these drugs. In some experiments which I made with opium-poisoning in the animal, and in chloral-poisoning, the atropine seemed powerless to increase the amount of air taken in and out. Strychnine I found to be less active in the normal animal than atropine, but more certain in its action. Cocaine I found to almost outclass strychnine in the power and certainty of its action. Each of these alkaloids is capable of stimulating the respiratory centre in the narcotic state. Undoubtedly, strychnine and cocaine are the most universally successful in their action. I came, also, in the course of my experiments upon another fact, namely, that after you have got the full influence of one of these drugs it was possible to still further stimulate the respiratory centre by a second respiratory stimulant. Thus, I took a chloralized dog, and gave cocaine until convulsions were appearing; the respirations were increased a certain amount. I then gave strychnine, and to my surprise there was a very marked further increase in the respiration. We learn, therefore, from these experiments a very important deduction; namely, that in desperate cases we ought not rely upon any one respiratory stimulant, but use a second respiratory stimulant; and we can do this also in obedience to a law which I have been accustomed to teach my students in the university as one of the fundamental laws in regard to the combination of remedies; namely, the so-called law of crossed action. Take a drug like atropine which, we will say, acts upon the brain, heart and respiratory centre. As schematic of this action I draw a line on the board. At this point we will represent the respiratory centre by a red dot. I now take another drug like cocaine, which has comparatively little action upon the brain and heart, and draw a line that will represent its action. These two lines of action cross and reinforce themselves at the red dot, that is, at the respiratory centre. In such a way we get the greatest influence on the respiratory centre with the least influence on other portions of the system. This rule, if I have time to speak to you later, is a very important rule in the use of narcotics in the treatment of disease. The value of cocaine as a respiratory stimulant, does not rest solely upon laboratory results. The first time I used it was in the case of a man dying from pneumonia following erysipelas. We had done everything, used oxygen and strychnine, and it occurred to me to try cocaine. To all appearances, cocaine coming to the aid of strychnine, saved that man's life. It was the crossed action of the two rather than the simple action of either. Possibly, some of you may know I brought forward the value of strychnine in the treatment of narcosis from ether-poisoning before the Berlin Congress, and shortly after that one of our female physicians in Philadelphia (Miss Clara Dercum), having read the address essayed the use of strychnine in opium-poisoning after the failure of atropine, and obtained the most beneficial results. After all, gentlemen, however, the one great treatment of the narcotic state, the treatment which has been almost neglected, is artificial respiration — not artificial respiration, however, as it is ordinarily practised. Of the ordinary methods of artificial respiration, I believe Sylvester's is the best; but when I made experiments upon animals poisoned with chloroform, to my astonishment I found it almost impossible to kill the animal with these anæsthetics if I used artificial respiration. I have taken a dog, stopped heart and respiration with ether, used artificial respiration, restored the dog to life, killed him again with ether, restored him to life, and done it half a dozen times in half an hour. What is the difference in the artificial respiration as we do it in the laboratory and in the sick-room or the hospital? In the hospital, we simply compress a man and let what air can get into him. In the laboratory, we blow a dog up, and, of course, the air is expelled by the elasticity of the chest. Forced artificial respiration, like that of the laboratory, is the thing for the treatment of narcosis. I found out that Dr. Fell, of Albany, had preceded me; he, acting on purely clinical or theoretical grounds, had introduced forced respiration in the treatment of morphia-poisoning with the greatest success. All his cases, I believe, have recovered; and in one twenty grains of morphia had been taken, and the woman was kept alive many hours after there was complete paralysis of the respiratory centre. Just so long as you can keep the heart beating by means of forced respiration, there is hope, because though the respiratory centre be absolutely paralyzed, movement of blood and elimination goes on, and by and by the man whom you are keeping alive will free himself from the excess of opium. Fell's apparatus, which I have here, had a bellows with which he pumped air into a reservoir, a valve by means of which he could control the going in and out of the air. He then passed the air over a lamp in order to heat it. He connected this reservoir of the hot air with the trachea of the patient, always performing tracheotomy. In this way he had no trouble. Now, it occurred to me that tracheotomy, probably, was not necessary, and that so much machinery was probably, also, unnecessary; and so I devised an apparatus consisting simply of a repetition of that designed in the physiological laboratory, using, however, a face-mask and not performing tracheotomy. I have never used this on the living man, but in the corpse you have no trouble in blowing up the lungs by this simple apparatus. Then, again, I tried intubation. Here is a modified intubation tube. This, connected with the ordinary bellows, enables you to blow up the lung of the man without performing tracheotomy. There is one thing which ought never to be forgotten, namely, to put into the rubber tube between the bellows and the mask or intubation tube a little metal tube having a small orifice in it, so that if you make with the bellows too much pressure on the lungs you will not tear them, but the excess of air will find its way out through the tube, whilst during respiration the patient breathes out through the opening. This whole apparatus, costing but a few dollars, ought to be in every hospital and, so far as I know, is in none.

The remaining portion of my hour I want to take up with a discussion of certain points in regard to the practical use of opium. Opium is, as we know, *par excellence* the sleep-making substance, the best of all somnifacients. It has, however, certain drawbacks to its use. I shall only point out what you all know, that when there is pain, opium is after all the one narcotic upon which you can rely, because in some way which is entirely inexplicable to us at present it relieves pain. We have been using opium through these many centuries for the relief of pain in innumerable instances and yet cannot formulate any reason or explanation of the way in which it relieves pain. It does not stop pain by putting the patient to sleep, for often it relieves the pain without producing sleep. Very commonly, however, when the patient is not suffering from violent pain you can avoid the disagreeable effects of opium by combining it with chloral; and the mixture of chloral and morphia or opium makes the best narcotic combination that we have. Under the law of crossed action we get the double influence of these two drugs upon the cerebrum, with a minimum of influence from the small dose of chloral upon the heart and a minimum of influence of opium upon the stomach and intestines. Where we want simply to overcome sleeplessness from restlessness and nervousness, I think sulphonal is the best of all narcotics we have, the safest at the time, and least dangerous so far as engendering the habit is concerned, and also the one which, when taken consecutively for a great length of time, seems to leave little or no influence upon the general system. A very important use of opium is for the purpose of allaying irritation; and here I want to put in a word for what some of you, especially the gynæcologist, may consider to be out-of-date therapeutics, namely, the value of opium in the treatment of peritonitis. I believe myself that salines are very valuable in peritonitis; but I am an absolute believer also in the value of opium. I can remember in the course of my practice six violent cases of peritonitis without obvious cause, severe, general, heroic peritonitis, in which I used the opium treatment with success, and I have never yet seen a case die. Of course, I am not speaking of surgical, septic or perforation peritonitis. Probably the opium acts in these cases by benumbing the nervous system so as to prevent the symptoms we know as those of shock, the symptoms of reflex centric irritation and reflex centric paralysis. Opium, also, is especially valuable when we have to deal with inflammation of the intestinal tract of a paralyzing nature. I am sure that inflammation or irritation of the intestines may be so severe as to paralyze the muscular coat and produce symptoms of complete obstruction without there being any other organic change. Under these circumstances opium acts not as a constipating agent, but as a relaxant. I saw some years ago a case which illustrates the point I have in mind. I was sent for, to see a woman in the middle of the night. She had been one of the unfortunate victims of the deluded or deluding gentlemen I spoke of at a previous lecture. She had eaten pork and cabbage and corn for breakfast, cabbage and pork and corn for dinner, and corn and cabbage and pork for supper. In the night she was seized with a horrible abdominal pain which she relieved somewhat by pressing into the belly with the top of a chair — evidence that the pain was at that time due to irritation and spasm. She was treated with globules for twenty-four hours, and had a frightful peritonitis when I saw her. I covered her abdomen with leeches, and before the leeches were off she began to have diarrhœa. First came corn and cabbage and pork, and then pork and cabbage and corn, and then corn and pork and cabbage, until at last that which in life had been so ruthlessly divided in the separate meals, lay side by side in peaceful rest. The history of that case was simply excessive irritation, spasm, inflammation of the mucous coat passing to the muscular coat, involving the whole intestinal wall and finally giving rise to a general peritonitis. Opium given in the beginning to the point of narcosis would have saved that woman the attack of peritonitis, provided, of course, it were combined with castor oil or some other mild laxative to act upon peristalsis after irritation had been subdued. I gave that woman as high as seventy-five grains of opium in a day during the peritonitis, and she got well after many months' illness.

Let me, in passing, say a word about the method of administration of opium when used in these heroic doses, — I was taught this lesson by dear experience. I gave a patient opium for peritonitis, leaving word to stop the remedy so soon as any symptoms of opium narcosis developed, but was sent for to find the patient suddenly overwhelmed in a fatal narcosis. Then I found the opium had come from a drug store which had descended from father to son, and that not only the drug store but the opium pills had descended: these hardened bullets had accumulated in the stomach and softened into one mass, then rapid absorption, then fatal poisoning. Therefore, whenever you use opium freely, see to it that you give the drug in liquid form and in chief part hypodermically, so that no opium can remain in the alimentary canal to be absorbed after the administration of the drug has been suspended.

The use of opium for the ordinary purposes of therapeusis is so well known to you that I hardly think it worth while to occupy your time with speaking of it. It does, however, seem worth while to say a few words in regard to the use of opium among children. I had the most bitter lesson of my life on this point. I gave my own child, who was then about eighteen months old, a grain and a half of Dover's powder. The result was a narcosis in which the boy lay for eight hours in such a condition that no one knew whether he would live five minutes longer. The lesson I want to draw is that in children preparations should be used concerning which there can be no doubt as to the amount of opium given. Dover's powder is a mechanical mixture of opium with other ingredients, and if the druggist make a mistake or be careless and the powder be not thoroughly mixed, the child may get double the amount of opium that you are expecting.

The symptoms which are produced by opium in children differ from those of the adult. Usually collapse is developed very early in children; and the very curious statement is made in Althouse's work on nervous diseases, that in children and in adults of the lower races of men morphia very commonly produces convulsions. If this be correct, you see how closely it tallies with the explanation I gave in the beginning of the lecture as to the explanation of the action of opium upon different animals. In many persons opium produces great nausea and depression; especially is this so in cases of nervous women. Undoubtedly morphia is better here than opium; but the watery preparations of opium and the deodorized tincture are better than morphia. A clinical discovery made many years ago by Professor DaCosta I have found to be invaluable, namely, that bromide of potassium will in nine cases out of ten put aside the depressing effects of opium. I do not know why this is; but I know that if you will give bromide of potassium sixty grains to every grain or grain and a quarter of opium, you will save very much to your patients.

Finally, a word in regard to the opium habit and its treatment. When a mother uses opium the child in the womb has the opium habit at the time of birth. It has been commonly noted that when children are born in women who are opium-eaters the child seems at first perhaps perfectly well, but in the course of a few hours goes into collapse and dies. Now, I believe that the collapse in these cases develops because the child has not had its usual stimulus of opium and that the child should be given directly after birth doses of opium that are entirely beyond those which one would think of giving to children under other circumstances.

In the treatment of the opium habit one point always must be remembered, namely, that whilst alcohol influences the moral nature in certain directions, opium makes a man or woman a liar. The lying faculty is enormously stimulated by this drug opium; and therefore there is no use in taking charge of an opium-eater unless you have him under circumstances in which you know that lying will not avail him. You must have the person under absolute surveillance and care.

You can withdraw the opium very gradually, or rapidly, or at once. My own experience is against very slow withdrawal of the opium. It is a misery long drawn out; and the chances are that the will and nerve of the patient will give way in the weeks necessary. On the other hand, the sudden immediate withdrawal of opium is attended with danger of collapse. I have never seen a case of opium habit in which I could not withdraw the opium in ten days to two weeks without the production of symptoms that were at all dangerous, and I have seen cases in which people took opium in enormous amounts. I will mention one case, to show the method I think should be employed. A woman took three pints of paregoric a day. Of course, I had both the opium and the alcoholic habit to deal with. I simply had the druggist mix five or six gallons of paregoric without opium. The taste was exactly that of paregoric, and every time the woman took two or three ounces, some of the paregoric without opium was put in the place of that withdrawn from the demijohn containing paregoric. By and by the opium habit was overcome; and it became then an easy matter to get rid of the habit of alcohol. The treatment of the symptoms in these cases must be as they arise. Cocaine certainly seems in many cases to have a very marked beneficial effect upon the stomach. Solution of gold, much lauded, I have not tried enough to give a positive opinion concerning; but I have seen it apparently do some good in the alcoholic habit. I have never tried it in the opium habit.

A HOSPITAL ship is about to start for the coast of Labrador. Dr. Grenfell is in charge of the medical arrangements.

Original Article.

INSANITY FOLLOWING SURGICAL OPERATIONS.[1]

BY G. G. SEARS, M.D.

OF the cases which form the subject of this paper I am indebted for the second to Dr. George Haven, for the third to Dr. A. T. Cabot, and for the fourth to Dr. Cabot and to Dr. J. B. Wheeler, of Burlington, who kindly supplied some of the details.

CASE I. Mrs. G., twenty-nine years old. Family history good. She was of a markedly neurotic temperament, and her menstrual periods were always attended by considerable nervous upset. Recently she had been greatly worried by domestic troubles. On March 4, 1891, during a catamenial period she had a chill which was followed by sharp pain in the lower abdomen with tenderness on pressure in the right iliac fossa. A tumor giving an indistinct feeling of fluctuation gradually developed, and was operated upon by Dr. F. B. Harrington, on the ninth day of her illness, eight ounces or more of fetid pus being evacuated.

The later history of the wound is uneventful, healing gradually taking place during the next seven weeks. On removing her to the bed after the operation, it was noticed that her face appeared flushed and her lips were covered with a fine froth, and in view of later events, Dr. Harrington's remark that if he had then seen her for the first time, he would have supposed her to be recovering from an epileptic fit may or may not have significance. She recovered very badly from ether, considerable shock following the operation, but, though it was noticed that she was very irritable and expressed a great aversion to her husband, her progress seemed in every way satisfactory up to the sixth day when she had a distressing interview with him on business matters. Late in the afternoon, to quote the nurse's account, "she suddenly put both hands to her head complaining of a sharp pain across the temples, her eyes rolled up and for a few seconds she became rigid, foamed at the mouth and was covered by a profuse sweat." When seen a few minutes later her expression was one of great anxiety, and she was dripping with perspiration. The pulse was full, and 84 instead of 108, its usual rate, the pain had somewhat subsided and rapidly disappeared, apparently as a result of the suggestion that it would soon go and had no significance.

For the next six days her condition remained the same as before this attack, but on the afternoon of the seventh she complained once more of severe headache, became delirious and was with difficulty kept in bed, as she insisted on "going home." During the next two weeks she seemed to doze most of the time and when roused was extremely irritable. During her most lucid intervals she was much confused, had little idea of either time or place, and was unable to concentrate her attention on any subject. In talking, she had great difficulty in selecting the right words and occasionally misapplied them, while for a short time her vocabulary consisted almost entirely of the phrase "take of it." Yet she seemed conscious that she was not making herself intelligible and at times grew very impatient at her inability to do so. "I know it but I can't remember it," was a frequent expression after an ineffectual attempt to make herself understood. She always remembered the names of her husband and child, though the ability to recall other proper names was very late in returning. For a few days she complained of deafness and said she was unable to hear a watch more than six inches from her ear. Another convulsion occurred about a week after the development of the mental symptoms and seemed to increase her confusion. Recovery was gradual, but was complete at the end of about five weeks. The kidneys and heart were normal.

CASE II. Mrs. X., age thirty. Family history good. With the exception of attacks of excruciating pain for two years, due to tubercular salpingitis, her previous history was uneventful. About four months ago both tubes were removed. For the first six days after the operation she was very nervous and had hallucinations of vision, saying that she saw people in her room. At the end of a week her husband made his first visit to her, but she refused to speak to him, and said she cared nothing for him or her child, whom she had previously idolized. She showed an especial aversion to people of whom she had been most fond and complained that she was starved and abused by the nurse. No confidence could be placed in her statements, as most of them were either utterly untrue or else greatly exaggerated. About six weeks later she became imbued with the idea that she was soon to die and took every occasion to impress it upon her husband and friends. She is now considerably better, but still takes a most melancholy view of life and remains untrustworthy.

CASE III. S. C., a physician, sixty years old. Family history of insanity. For a year or two it had been noticed that his disposition had changed, and from a warm-hearted, generous man he had become crotchetty, selfish and exacting. For a year he had had attacks of hematuria, amounting on two occasions to a considerable hæmorrhage, due to the presence of a tumor of the bladder, which was removed by operation in January, 1892. Soon after the operation he began to have delusions of sight and hearing, imagined that a variety of surgical accidents were about to happen to him, and said that he felt pus coursing up and down his legs. Later, he had delusions of being pursued by enemies, and thought that he had committed some terrible sin. He finally refused food, and was removed to an asylum.

CASE IV. Miss B., age thirty-four. There was no taint of insanity in her family history; and she was herself described as a woman of a strong, well-balanced mind. She was, however, very nervous about everything connected with the operation, fearing she could not bear the pain. In November, 1888, a suppurating ovarian cyst was removed with considerable difficulty as it was wedged behind the uterus and very adherent. She recovered well from the operation, but on her return to her home was subjected to a series of most depressing events, and two or three months later developed a severe form of melancholia necessitating her removal to an asylum. At the end of nine months she had fully recovered. The length of time which elapsed between the operation and the appearance of the melancholia, and the many trials through which she passed previous to its development makes it doubtful if the operation can be looked upon as more than an indirect cause.

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[1] Read before the Boston Society for Medical Improvement, March 15, 1893.

In looking through the literature of the subject I have been able to collect 185 instances of insanity following surgical operations. This list does not include cases of operation on the head where objection could be made that the symptoms were of inflammatory origin, nor those in which it developed so late that it was difficult to connect the two events. I have also excluded those in which the immediately antecedent condition of the patient showed so marked a deviation from mental health that the operation served only to fan an already smouldering fire into a blaze, as in Case III, which is reported as an instance of the danger which patients with mental instability may run, if they are subjected to surgical operations. Although the symptoms have varied greatly in different cases, the form of insanity is still very definite in its general type, and differs in no essential details from that which occasionally follows acute disease and to which, as suggested by Wood, the name of acute confusional insanity has lately been very generally applied. Of these 185 cases, 60 followed gynæcological operations, among which were 34 ovariotomies and 9 hysterectomies. . The other 17 covered the whole field of gynæcology and included one in which the simple introduction of a speculum was followed by mental disturbance. Ten cases followed amputation of the breast, while 62 resulted from operation on the eye, of which all but a very few were for cataract. Forty-five cases belonged to the domain of general surgery, including operations on the limbs (13 cases), on the rectum (four cases), for the radical cure of hernia (four cases), for appendicitis, psoas abscess, removal of kidney, suprapubic cystotomy, resection of sternum, resection of lower jaw, hydrocele, sarcocele, hydatid of the liver, etc. Eight cases could be included under minor surgery, of which the extraction of teeth was responsible for four, the administration of chloroform without operation, two, and catheterization one. The application of leeches was the immediate precursor of an outbreak in one case; but as the patient was a syphilitic, shut up in a dark room for an attack of iritis, it is probable that the leeches had but little influence.

For comparison with these figures it may be mentioned that Le Dentu [2] found 38 gynæcological operations out of a series of 68 which he collected, while of 186 cases collected by Kiernan,[3] 65 were gynæcological and 35 for cataract.

The preponderance of these two classes, gynæcological and ophthalmic, is very striking, and results from several causes, among which chance must be reckoned, as I have happened to find reports, in both, of comparatively long series of collected cases, which, when the total figures are so small, might easily lead to a seeming disproportion which has no real existence. Other causes which have been assigned for the prominence of the gynæcological cases are the intimate connection between a woman's reproductive organs and her mind, her greater susceptibility to mental disturbance, an assumption to which I shall refer later, and the fussy character of many operations on the female genitals, which necessitates prolonged anæthesia and thus increases the danger of shock and exhaustion. Nevertheless, the reports of long series of such operations which I have seen show only a small percentage where this complication has occurred, but, unfortunately, with the exception of the cataract extractions mentioned below, I have no statistics of other operations at my command which can be used in comparison. Dr. John Homans tells me that in a thousand laparotomies, of which about 700 were for ovariotomy or hysterectomy, he had seen insanity result but twice; while six cases occurred among 228 cases recorded by Werth.[4] Tait,[5] in 960 laparotomies for various reasons (it is probably safe to assume that a majority were of the character under discussion), met with seven cases of melancholia. Comparing these figures with a series of 186 cataract operations given by Schnabel,[6] in which 12 resulted in insanity, it will be seen that in the latter the percentage is considerably higher, but of more importance than these meagre figures is the quite general belief of those who have investigated the subject from the standpoint of the oculist, that it is more common in this class of cases. The probability of this assumption is theoretically strengthened by the introduction of an element in them from which other operations are free, namely, the necessary bandaging of the eyes, thus keeping the patients in darkness for several days, and leading to the production of a dreamy state in which the imagination is allowed full play. Another important factor is their advanced age, while the effects of the mental strain induced by the thought of an operation whose success is so important to their future happiness, is also to be considered. As this opinion has been almost exclusively drawn from Continental sources, and seems to have been based chiefly on hospital statistics, it would be interesting to know if the experience of American oculists, operating on patients comparatively well fed and well housed, is corroborative. It is probable that cases are fewer, but that they are fairly numerous is shown by the fact that out of 128 cataract operations done at the Massachusetts Charitable Eye and Ear Infirmary[7] last year, there were four well-marked instances, besides one in which the patient is described as restless, behaving badly, and tearing off the bandage at night. Several others were sufficiently restless or unruly to have it specially mentioned in the brief record given of the case, but we are left in doubt whether this was due to mental or moral unsoundness.

The influence of sex is difficult to estimate. It has been assumed that women are more susceptible than men and on the face of the returns, this would seem to be proved, as out of 167 cases in which the sex is given, 102 were women and 65 men, yet if the 60 gynæcological operations be subtracted, the figures are reversed by a small margin. Further doubt is cast on woman's greater susceptibility by the fact that out of 41 cases following operations on the eye, 16 only were women, while of 18 consecutive cases of post-operative insanity observed by Leidy,[8] 10 were men.

It seems to be now generally accepted that the underlying condition is one of exhausted or perverted cerebral nutrition and the causes which lead to its development are those which induce this result. Prominent among them is age with its attendent degeneration of the blood-vessels. Out of 80 cases in which this is mentioned 54 (67 per cent.) were over 40, 26 under it, the youngest patient was 10, the oldest over 80.

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[2] Médecine Moderne, [illegible], page [illegible].

[3] Medical Standard, September, [illegible].

[4] Centrblt. f. Syn., 1888, p. 387.

[5] Medical News, September [illegible], [illegible].

[6] Quoted by Kiernan.

[7] Report for [illegible].

[8] Quoted by Baldy, Trans. [illegible] Soc., [illegible], from an unpublished paper.

Among other causes to which credit has been given are shock, the fear and worry due to anticipation of an operation, the sudden relief after it is over, peripheral nerve irritation, sepsis, anæmia and general malnutrition, the result of privation or other causes. Various antiseptics, notably iodoform, have been accused of being the exciting cause, and I have found several cases which were ascribed to this drug. While it is possible that such a result might follow if it were used in considerable quantities, it is difficult to believe that, when applied to a linear wound which heals by first intention, enough could be absorbed to produce such serious symptoms, so that I am inclined to believe that in most instances iodoform has been unjustly accused. Alcohol was found mentioned as a possible factor but 13 times, twice in the family and 11 times in the personal history of the patient. An hereditary taint was found in 13 out of 60 cases in which the family history was given and does not seem so important an element as the previous mental habit of the patient, for out of 74 cases, 34 or nearly one-half are described as being queer, flighty, eccentric, hysterical or markedly nervous.

In 86 cases in which the date of its earliest manifestation is definitely stated, it came on within the first three days in 50, or more than one-half the whole number, in some of whom it was noticed as soon as the patient began to recover from the anæsthetic, in 15 it came on between the 4th and 7th days, in 14 between the 8th and 14th, in 4 between the 15th and 28th, and in three during the second month.

Judging from the figures which I have been able to gather the prognosis is not very favorable. Of 91 cases in which the outcome is known, 54 (or about 60 per cent.) recovered, 21 died, and 16 remained insane. This is a smaller proportion of recoveries than that given by Krafft-Ebing, 70 per cent., but considerably larger than is given by J. B. Ayer and Konrad,[9] 43.5 and 44.5 per cent. respectively, in cases following disease, chiefly acute. Contrary to my expectations, I could not find that age had any influence in these cases in determining the result, about the same proportion in each decade recovering; but the influence of sex appeared quite marked. Out of 25 men 22 recovered, two died and one remained insane; while only 32 women out of 64 recovered, 17 died and 15 remained insane. When recovery took place it usually occurred within a very few weeks, in some instances the mental symptoms persisting but a few days or even hours; but the prognosis is not necessarily bad even after the lapse of many months. The most rapidly fatal case terminated within forty-eight hours. In several cases it was noted that mania came on just previous to recovery, and it is possible that its development may sometimes be of good prognostic omen. In regard to the wound, the prognosis is not altered by the onset of insanity, except in so far as injury is mechanically done to it by the patient himself in tearing off dressings, bandages, etc.

It would be interesting to determine whether a patient who has recovered from one attack is more liable to such an accident in the future than the generality of people, but I have been unable to find any evidence bearing on this point. Le Dentu[10] reports a case of mania following an operation for calculus in the ureter of a woman who twenty-five years before had had puerperal mania; but, on the other hand, Ill[11] mentions a case of deep melancholy lasting for five weeks after operation on a woman's urethra, where five months later a second operation was done without the appearance of any mental symptoms. To show that the shock of surgical procedures far from being harmful may even be beneficial, a case of Allison's[12] may be mentioned where a woman forty-eight years old was twice cured of insanity by an accidental fracture of the thigh.

The whole subject is still so obscure in many points and the statistics which I have been able to gather are so small that it is impossible to draw very positive conclusions. In order, however, to present the subject in better form for discussion I have formulated the following propositions which are based in part on material which has been given in this paper.

(1) That the insanity following operations is identical in form with that which follows acute disease.

(2) That it may follow the most trivial operations as well as the most serious; that after gynæcological operations it possibly is, and after cataract operations it probably is, more common than after other surgical procedures.

(3) That the aggregate number of cases is greater in women than in men, but that this disproportion would be lessened and might even disappear if only such operations as are common to the two sexes be compared.

(4) That the causes are those which induce perverted or exhausted cerebral nutrition, among which are shock, fear or anxiety before operation, the sudden relief from strain after it, sepsis, malnutrition and advanced age.

(5) That it is impossible to say that iodoform or other antiseptics may not have been the cause of some cases, in the same manner that drugs taken by the mouth may lead to mental disturbance, but that these cases are probably very few in number.

(6) That it usually appears within the first two weeks and may even come on immediately after the operation; that if it develops after the lapse of two or three months it is probably the result of other causes or is at best but indirectly connected with the operation.

(7) That the prognosis is not particularly good, but 60 or 70 per cent. of the cases at most recovering; that recovery is more common in men than women, and when it occurs, takes place usually within a few months, but that the outlook is not absolutely unfavorable even if it continues for a longer period.

(8) That hereditary influences are of comparatively slight importance while a condition of previous mental or nervous instability is a decided factor in inducing its appearance.

(9) That when a patient shows a marked tendency to insanity or when mental symptoms are already present an operation is attended with much danger in this respect and great responsibility rests upon the surgeon who advises it.

(10) That the progress of the wound is not influenced by the onset of insanity *per se*.

Specimens of the ice consumed in Paris have been found to contain dangerous microbes — among them the microbe of typhus fever. The Parisian public use water-bottles having the ice in a central compartment, where it does not come in contact with the water.

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[9] Arch. f. Psych., 1885, xvi, p. 522.

[10] Loc. cit.

[11] Pittsburg Medical Review, January, 1888.

[12] Am. J. Ment. Sc., 1886, p. 104.

Clinical Department.

A MALIGNANT GROWTH IN THE NASO-PHARYNX OF A CHILD.

BY JOHN D. PAGE, M.D., SAVANNAH, GA.

MALIGNANT growths of the naso-pharynx have not often been reported, particularly at an early age. Bosworth, in his exhaustive review of the subject, gives nineteen as the number of reported cases of sarcoma, of which only two were between the ages of one and ten years. Of carcinoma only six cases are on record.

On April 30, 1892, the patient, a boy of four years, presented a pear-shaped tumor arising in the vault of the pharynx, bulging forward the soft palate and descending sufficiently low to touch the epiglottis, causing coughing and retching unless held upon the tongue, the knack of doing which the patient had acquired. The uvula was gone, and the most dependent portion of the tumor was flat from previous attempts to remove the growth with scissors.

The growth was removed with post-nasal forceps in three sittings, with trifling hæmorrhage, under cocaine. Digital examination revealed now nothing abnormal in the post-nasal space; and the child was sent to its home in the country, with the injunction to return promptly on any sign of recurrence.

The two largest morsels of the growth were forwarded to Dr. W. F. Whitney for microscopic diagnosis. His report is as follows: "The examination of the tumor you sent on May 4th, shows two rounded masses, with a slightly papillary surface. The masses were the size of the little finger-tip. Microscopic examination showed the surface to be covered with flattened epithelium, beneath which were in places a few mucous glands. The bulk of the growth was composed of large round cells with a little fibrillated intercellular substance. In places the cells were quite widely separated, and fine fibrillæ filled the field. The diagnosis is of a myxo-sarcoma, probably starting from the upper part of the vault of the pharynx.

In a month the child returned with the growth almost as large as at first and much less pedunculated, with a broader surface of attachment. Upon its removal, in the same manner as before, the finger found the post-nasal space studded with little hard nodules, the largest being the size of half a dried pea. The removed pieces were this time unfortunately thrown away. In two weeks the sides of the pharynx, preauricular, submaxillary and cervical glands were involved, cachexia was pronounced, and when seen at this stage, Dr. M. Boyd in consultation, the clinical picture of sarcoma was complete. Further operation was refused, and I was informed of the death of the child shortly after from inanition.

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ADENOIDS AS A CAUSE OF CHRONIC DEAFNESS IN ADULTS.

BY W. H. [illegible], M.D., NEW YORK,

Assistant Surgeon, [illegible]

ALL the cases reported had chronic catarrh of the middle ear. Politzeration did not improve the hearing of any of the cases. No treatment except the removal of the adenoids. Private patients.

CASE I. Mr. H., aged fifty-six, deaf more than twelve years. Tinnitus. Has been treated at different times by a number of otologists in New York and elsewhere, by astringents, politzeration, etc., without benefit and without arresting the progress of his deafness.

June 15, 1891. Hearing, right watch and left watch not heard $\frac{0}{60}$; Loud conversation at twelve inches in the right ear only. Hard, fibrous tissue in the vault above and behind the Eustachian tubes removed at different times, followed by great improvement in the hearing. Not all of the hypertrophied tissue was removed.

May 5, 1893. Hears right watch $\frac{50}{60}$, left watch $\frac{20}{60}$. Ordinary conversation heard at ten feet. Hears whisper five feet. Tinnitus not improved.

CASE II. Mr. B., aged fifty-five, deaf three years. Tinnitus right ear.

January 21, 1892. Hearing, right watch, $\frac{3}{60}$; left watch, $\frac{5}{60}$. Ordinary conversation five feet. Hard and soft adenoids removed, not completely.

May 5, 1893. Hears right watch, $\frac{36}{60}$, left watch, $\frac{48}{60}$. Conversation heard better than the previous case, although hearing for the watch is less. Tinnitus cured.

CASE III. Mr. R., aged forty-seven, deaf with tinnitus thirty years.

December 26, 1892. Hearing, right watch, $\frac{1}{60}$; left watch, $\frac{1}{60}$. Conversation heard at about four feet. Hard, fibrous tissue removed from the vault at a number of sittings.

April 6, 1893. Hears right watch $\frac{36}{60}$, left watch $\frac{24}{60}$. Ordinary conversation at more than ten feet. This patient now enjoys the theatre, which he did not before. Adenoid tissue not removed entirely.

CASE IV. Mrs. E., deaf four years. Tinnitus.

December 16, 1891. Hearing, right watch, $\frac{4}{60}$; left watch, $\frac{48}{60}$. The patient is a school-teacher, and finds that she cannot attend to her duties because her hearing for conversation is very defective. Stalactite soft adenoids removed.

April 15, 1893. Hears right watch $\frac{20}{60}$, left watch $\frac{60}{60}$. She does not know that she is deaf; attends to her work. No tinnitus.

CASE V. Miss I., aged twenty-four, deaf four years.

January 30, 1892. Hearing, right watch, $\frac{4}{60}$, left watch $\frac{6}{60}$. Soft adenoids removed after a number of sittings, not completely.

June 21st. Hearing for conversation nearly normal. Right watch $\frac{48}{60}$, left watch $\frac{48}{60}$.

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Medical Progress.

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.

HYPERTROPHY OF THE SPLEEN.[1]

THIS paper is based on observations on cases of hypertrophy of the spleen occurring in children from four months to two and a half years old. In five cases the cause appeared to be acute general tuberculosis; but the remaining 68 did not depend upon any of the affections that commonly give rise to this symptom, such as leucæmia, malaria, etc.

In none of these cases could rachitis be absolutely excluded; and, in fact, in the greater part of them its manifestations were evident. Hypertrophy of the spleen existed in 48 per cent. of 155 cases of hereditary syphilis collected.

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[1] Revue Mensuelle des Maladies de l'Enfance, Novembre, 1893.

From an histological point of view it is often impossible to distinguish between the hypertrophy of hereditary syphilis and that which accompanies rachitis.

MYOCARDITIS IN TYPHOID, SCARLATINA AND DIPHTHERIA.[2]

The occurrence of important cardiac phenomena, such as weakness, fainting, sudden death, etc., often calls the attention of physicians to the heart in the acute infectious diseases. Romberg, from a study of the cardiac wall in these cases, concludes that the most frequent lesions are dilatation and softness of the heart, with anæmia of its muscle, and in certain regions fatty degeneration. Lesions of the endocardium and the pericardium were found to be much more rare. The microscope showed parenchymatous, interstitial and vascular alterations. The cardiac fibres showed granular, fatty or hyaline degeneration.

INCUBATION PERIOD OF MUMPS.[3]

Twenty-six cases were noted; all of them were supposed to have been infected at the same time by the same case.

Cases.	From time of infection.
1	14 days.
2	15 "
5	16 "
4	17 "
7	18 "
4	19 "
1	20 "
2	21 "

GASTRIC ULCER.[4]

A girl, two and one-half years old, when first seen had stertorous respiration. All the voluntary muscles were contracted and there were involuntary evacuations of urine and fæces. Her pulse was about 150, rather full and tense, and her temperature was 106°. The child was said to have appeared perfectly well until about one hour before her death, when she complained of not feeling well. There was no vomiting and no complaint of pain, but consciousness was soon lost. She had convulsions which, however, were readily controlled, and consciousness was beginning to return, when another convulsion occurred, apparently limited to the diaphragm; and this one terminated fatally. The autopsy disclosed a perforating ulcer of the stomach, situated on the posterior wall at the cardiac extremity, close to the greater curvature. In some places there was an entire loss of substance, the floor of the ulcer being made up only of peritoneum. There was thickening of other parts of the stomach, especially on the anterior wall, extending to the lesser curvature. The stomach was thickened in several places and this thickening involved the mucous membrane.

PNEUMONIA.[5]

Thirty cases of fibrinous-lobar pneumonia are reported from the K. und K. Friedreich Children's Hospital. The ages were from one to twelve years; two were under one year; eight were in their third year.

In five cases the pneumonia was double; and in each of these cases the lower lobes behind were the parts affected. In six cases the left lower lobe was affected, and in one the left upper. In nine cases the right upper and middle lobes were affected especially in the auxillary region. In six cases the right lower lobe and in three cases the right middle and lower lobes were the parts involved. All the cases recovered.

APPENDICITIS.[6]

The disease is common in childhood. Sutton demonstrated the anatomical similarity between the vermiform appendix and the tonsil. Both are largely composed of adenoid tissue. Inflammation of the appendix, both simple and suppurative, bears a striking resemblance in its anatomical character to simple and suppurative amygdalitis. Sutherland has frequently found excessive quantities of uric acid and oxalates in the urine of children with appendicitis.

In a recent discussion at the New York Academy of Medicine, Stimson called attention to the frequency of recurrence in children. It had been his experience that in young subjects the disease occurred without fever, with little or no local pain, and that suppuration when it took place was apt to be diffuse. Dr. Charles McBurney said that general symptoms, especially the pulse and temperature, were apt to be misleading, and that local signs were more important, especially local pain. It is undoubtedly the fact that pus forms earlier in children than in adults. A chill is rare; and the whole course of the disease may be passed through with but a slight rise of temperature. Indications for surgical interference cannot be formulated with certainty.

PERITONITIS.[7]

The condition of the patient at the time of the operation was so serious, the symptoms being those of peritonitis, including vomiting and collapse, that although he expected to find an appendicitis with suppuration, Routier hesitated about operating. He, however, made a free incision in the right iliac region. A large quantity of pus escaped, and a general peritonitis, with a healthy cæcum, was revealed. A new median incision was then made, and the cavity thoroughly washed with water containing naphthol. The incisions were left open, and strips of iodoform gauze were introduced in all directions to facilitate the escape of pus.

Suppuration was free enough to make a daily renewal of these dressings necessary; and for three days milk and bouillon taken by the mouth were discharged through the wound. Contrary to expectation the patient improved rapidly, and made a complete recovery.

TUBERCULAR PERITONITIS.[8]

A girl, age eleven years, whose father had died of phthisis, and who had for some time complained of abdominal pain and of slight gastro-enteric troubles, suddenly had vomiting and pain, with constipation. The diagnosis of intestinal obstruction was made, and two days later laparotomy was performed. The omentum was found retracted and the peritoneum covered with granulations. The intestinal convolutions were adherent to each other and to the abdominal wall by numerous adhesions, which prevented search for the point of strangulation. An intestinal fistula was therefore established, through which a litre of liquid fæces was evacuated. In five days fæces were passed by the rectum, and the fistula closed some time afterwards. A crow inoculated with tubercle removed during the operation, died after a time of tuberculosis.

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[2] Romberg: Deutsche Archiv. fur klinische Medicin, 1891, t. xlviii, Heft. i. and iv.

[3] Stedman: British Medical News, 1892, xi, 18.

[4] Colgan: Medical News, 1892, lxi, 408.

[5] Baginsky: Archivs fur Kinderheilk, 1892, xiii, 286.

[6] International Medical Magazine, May, 1893.

[7] Routier: Archives of Pediatrics, September, 1892.

[8] Munchenen Medicinische Wochenschrift, 1892, No. 34.

Cases of obstruction from tubercular peritonitis are rare. Cases are reported by Schramm, Kummel, Knaggs and König.

MEASUREMENTS OF THE LIVER AT DIFFERENT AGES.[1]

Little has been written on the normal measurements of the liver and their pathological variations during infant life.

The clinical measurements are relatively easy to make and to practising physicians are of more importance than a knowledge of the various diameters and the weights.

These last can never serve as a means of comparison between the conditions of health, of functional derangement and of serious pathological changes. It is not possible clinically to determine the absolute dimensions of the liver, because of its being surrounded by resonant viscera — the lungs and intestines. Clinical measurements are, however, of value if they show a regular progression according to age, their variations depending simply on passing troubles of digestion. The author quotes from Vogel, of Dorpat, and gives the description of clinical examinations which he has adopted.

Physical examination of the liver is made in children exactly as in adults. Percussion in the axillary and mammary lines determines the measurements of the right lobe, and percussion in the vertical line through the sternum that of the left. Restlessness in little children makes this determination difficult. We generally cannot establish the influence of respiration on these measurements before the age of three years. The mammary and axillary lines are the only ones upon which Douchez believes percussion to be of practical use. He has often in cases of considerable hypertrophy of the liver failed to find any evidence of increase in its posterior face by means of percussion on a vertical line drawn through the scapula. He believes that there are three causes of error in examination that are of especial hindrance in children. They are excessive resonance of the thorax, resistance of the abdominal muscles, and distension of the stomach and intestines by gas. The greatest source of error is the extreme resonance of the thorax, especially in the newly-born.

In spite of care, measurements on the living are commonly a little less than on the dead. This statement the author proves by a table showing the results of many observations. Nevertheless, although giving less liver dulness than similar examinations after death, these results in the living represent really the impression given to the finger and ear; and the error, if it be one, is reproduced uniformly and proportionately at all times.

In certain cases, indeed, the demarcation of the upper and lower borders of the liver by percussion may leave doubt in the mind, and it is then well to verify by palpation. When the lower border extends abnormally low, palpation immediately below the false ribs encounters a certain resistance provided the child will relax his muscles. If, on the contrary, he holds himself tense, the finger meets with resistance at any rate; and it is well to repeat the observation several times in the same place.

Percussion serves better than palpation to define the slender edge of the liver, which is easily displaced. This thin edge of the liver may be resonant to percussion on account of its thinness and its relations with the intestines; and this occurs even after the abdomen has been opened. The child is best examined on his left side, the arm being raised, the hand grasping the bed and the left flank supported on a pillow. Percussion should be made on both the mammary and axillary lines; the two observations serving as a control upon each other, for the upper line of dulness is practically on the same horizontal plane in both of them.

In order to best show the relation of measurements the writer has grouped his observations into three classes:

(1) Measurements on the cadaver before and after opening the subject.

(2) Measurements on the liver of the living in health.

(3) Measurements of the liver of the living in disease.

The author presents a table of 88 observations. He finds that in the greater number of infectious diseases, including even measles and diphtheria, it is not uncommon to find enlargement of the liver due probably to incomplete elimination of the poison. His conclusions are as follows:

(1) The exact determination of the borders of the liver in children is difficult, because of the involuntary contraction of the muscles, also on account of the resonance found over the thin lower edge and of the oblique position of the upper border.

(2) The measure of dulness of the anterior face of the liver on the living is almost always less by one or two centimetres than the real measure on the cadaver, either before or after opening the abdomen we should therefore estimate this dulness from its extreme limits in order to reach as nearly as possible to the truth.

(3) The upper border of the liver corresponds in general to the interval between the fifth and sixth ribs.

(4) In the healthy state the vertical measurements increase almost regularly with each year's growth, excepting in certain individuals.

(5) This appreciable growth between the second and ninth years ceases almost entirely by the twelfth year and can be measured in centimetres by adding one, two or three centimetres, an additional centimetre for every year of the child's life up to eight years exclusive. Beyond eight or nine years the liver dulness measures approximately nearly, but not quite, one centimetre for each year of the child's life.

(6) The liver was found *somewhat large* in cases of catarrhal jaundice and gastric disturbance; *large* in cardiac disease, *very large* with amyloid liver, syphilitic liver, fatty liver and hydatid cysts.

(7) The slightest disturbance of health may cause a variation of two to four centimetres, and a variation of three to ten centimetres was found with certain grave lesions.

The Section on Pediatrics of the New York Academy of Medicine recently decided to appoint a committee to formulate rules suggestive to farmers and dairymen of the best manner for caring for milk intended for the city market.

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[1] Douchez: Revue Mensuelle, Septembre, 1892.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, March 13, 1893, the President, DR. C. F. FOLSOM, in the chair.

DR. G. G. SEARS reported

SOME CASES OF INSANITY FOLLOWING SURGICAL OPERATIONS.[1]

DR. JOHN HOMANS: So far as I recollect, this is the first paper I have ever heard in Boston on this subject, and I am under great obligations to Dr. Sears. It is interesting to learn that operations on the eye stand second as causes of insanity, and are almost as numerous as those on the abdomen. Cases when they occur, are quite remarkable and surprising. The first one I had was in 1881, in a single woman, a school-teacher of twenty-five. She had always been rather neurotic, subject to more or less hysteria; and she came to me with a dermoid cyst of the ovary. The operation went off sufficiently well except for some little hæmorrhage, and she was very sleepless after the operation. At the end of a week she became violently insane, and thought she had committed some sin for which there was no pardon or relief; and she died. The autopsy was made by Dr. Gannett, who said that things in the abdomen were sufficiently healthy and going on well.

The next case that I had was a year ago last October, in a single woman, sixty-eight years of age, with a large ovarian cyst, weighing about forty pounds, which was removed without difficulty. Her temperature was never 99°, and ran along on a level. As her convalescence progressed she gradually became insane. She had been a very correct single woman, and had an unruptured hymen; but she thought she was the mother of a lot of colored children. She was very voluble, and had many other delusions of a harmless nature. She also had false hearing. Finally, at the end of about a month, I took her to Somerville. Dr. Cowles took excellent care of her. I saw her several times. At intervals she was in pretty much the same condition, talking volubly, but was getting fat. She staid at the asylum six months, and went home very much better, almost well.

These are the only two cases of insanity that I remember to have seen after operations, and both were after ovariotomy. I do not know how one is going to foresee the occurrence of insanity any more than that of tetanus or of any other exceptional nervous disease that sometimes follows surgical operations.

DR WM. H. BAKER: I have been very much interested in Dr. Sears's paper. The cases that have fallen under my observation are these: first, a case which occurred in the Women's Hospital in New York, in the service of the late Dr. Peaslee. Since I have come into the room I recall still another case that was sent to me from Brockton. There was decided mental disturbance in the case, and had been for some time. She had great aversion to her husband, and thought he was trying to run off with some other woman. She had malignant disease of the body of the uterus. I operated upon her, doing a vaginal hysterectomy. For three or four weeks the mental condition remained about the same as before the operation. After that she seemed to improve somewhat, and went home. I heard of her afterwards from Dr. Locke, who reported that her mental condition improved very decidedly after her return home.

I agree with Dr. Homans in that I do not see how we are going to anticipate in what cases to expect insanity to follow operations, except in such as have shown previous mental disturbance; and in such I should think we might well look for aggravation after an exhausting operation. In two of the cases I reported to-night we could not from the history of the case see anything to lead us to look for such result after the operation.

DR. J. G. MUMFORD: I wish to report briefly two cases of post-operative insanity which have come under my care.

The first, Mr. R. F., age fifty-two, had a slight necrosis of the ulna. He entered the Massachusetts General Hospital in the service of Dr. Beach in the spring of 1890 for operation. His habits and family history were good. Syphilis and alcohol were not elements. He was a travelling agent. The operation was a trifling one. Ether was given and a patch of necrosis curetted. No blood was lost. For three days after the operation he was weak, querulous and nervous. On the fourth day he was decidedly wandering. Kept giving orders for goods, and was very particular about the dimensions of his coffin which I was to make for him. He became violent the next day; but under small doses of hydrobromate of hyoscine and morphia he became calmer, and a week later was quite rational. Tonic and stimulant treatment was pursued for three weeks, and his mental vigor kept pace with his constant physical improvement. He then left the hospital with his wound healed, and has been perfectly well since.

The second case was that of a Miss H., twenty-eight years old. Here also the family and personal history were free from taint. For two years she had had a rapidly growing intra-mural myoma of the uterus, for which she consulted Dr. M. H. Richardson in the summer of 1891. He advised an abdominal hysterectomy, and soon after removed the uterus and appendages. The operation was an easy and simple one. There were no complications. The uterus was amputated above the cervix, and the stump secured with skewers and ecraseur outside the abdominal wound. She rallied well from ether. There was some considerable hæmorrhage the night following the operation, owing to the breaking of the clamping wire. I secured the stump again, however, without much difficulty; and after the bleeding was controlled the patient went on to apparent recovery. Some ten days after the operation, however, she began to have attacks of melancholia, and after a month was in a condition of hopeless dementia. Though the wound was entirely healed and the pelvic conditions excellent, her general physical condition steadily deteriorated. By the advice of Dr. George F. Jelly she was removed to an asylum; and she died at the end of three months from malnutrition. Her mental condition (melancholia with delusions) continued to the last, though she was at no time very violent.

DR. C. M. GREEN: I recall one case that perhaps is of hardly sufficient gravity to be mentioned in connection with these others. It was about ten years ago, after a colpo-perineorraphy in a woman about sixty years of age. I do not know much about her antecedents, but there was no taint of insanity in the family so far as I could learn. She went on well about two days, when she developed mental aberration, became restless in bed, required constant watching to keep her from getting out of bed; and one night she eluded the nurse, and did get out of bed and ran about her room a good deal and was more or less violent. She was finally calmed down and went to bed. She became herself again within the time that the stitches would be allowed to remain, so that the mental aberration was quite transitory. The patient's behavior did not seem to interfere with the result of the operation, as good union was found to have taken place when the stitches were removed.

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[1] See page 642 of the Journal.

SPECIMENS OF THE HEART AND AORTA.

Dr. W. T. Councilman: I have brought two specimens to-night from a recent autopsy at the City Hospital, which I think show certain conditions of the heart and vessels quite well. The specimens which I have here, the heart and the aorta, come from a young man thirty-six years old. He was a well-nourished and muscular individual. For some years he had been an English soldier, stationed at one of the English stations in the Mediterranean, and there he had acquired both syphilis and gonorrhœa. I do not think these diseases had anything to do with the conditions we have here. He was in the City Hospital for some weeks before death, and while there he had evident indications of aortic insufficiency. At the time of his death there was a slight œdema of the lower extremities. The autopsy was made some time after death. This is the heart of the man. You can see even at a distance that the heart is exceedingly large. Its weight is twice that of the normal heart. There is not only a marked hypertrophy of the heart — the walls, as we can see, are thickened, but there is a most marked degree of dilatation of the heart. The left ventricle is fully twice the capacity of the normal left ventricle. The right ventricle is, if anything, relatively larger than the left. In the right auricle there is the condition which is frequently described under the old name of heart polypi. There are large mural thrombi in the auricle which are adherent to the auricular appendix and project into the auricle for some distance. The large thrombi are soft in the interior, having undergone the so-called puriform softening. There are also thrombi in the wall of the ventricle. The other changes which we find in the heart are very slight chronic thickening of the aortic valves. There was marked aortic insufficiency during life, but when one examines the aortic valves here there is very slight disease evident. The edges of the valves are very slightly thickened, and the regurgitation during life was due more to relative insufficiency of the aortic valves than to direct disease of the valves. The circumference of the aorta above the valves is one and a half centimetres larger than it should be. In addition to the slight chronic thickening of the valves there is a slight amount of fresh endocarditis, which has produced a few slight vegetations just on the edges of the valves. When we examine the aorta there is most marked disease. The appearance has been somewhat masked by being in alcohol and by the length of time which elapsed between death and the autopsy, but still the aorta is greatly thickened. The thickening and roughening of the aorta can be very well seen. There are elevated places all over it, but there is no calcification. This man was only thirty-six years of age. The other organs of the man all go to make up one characteristic picture. The kidneys were macroscopically but little diseased. There was a slight amount of albumen during life. The capsule of the kidney pealed off easily. The cortex was of the normal thickness. The tissue was slightly denser and tougher than normal. The same thing was true of the liver and of other of the abdominal organs. In the lungs, of course, there was the most marked chronic passive congestion. As you can see, there is a marked degree of dilatation of the mitral orifice; and, of course, there was a damming back of blood in the lungs, with chronic passive congestion. There were also infarctions in the lungs from emboli, which came from the right side of the heart. When we place the whole case together, it seems to me that the cause for the whole thing is to be found in the condition of the arteries. There is not only this general thickening of the aorta, but the large branches given off from it show the same condition. The thickening in the aorta is specially marked about the exit of the smaller vessels, and about the exit of the arteries which are given off from the arch. Almost all of the arteries in the body — the mesenteric artery especially, the renal artery, hepatic artery — all of these are materially thickened; and in places on making sections of the organs, the small arteries stand out above the cut surface rather more prominently than they should. I would regard this case as one essentially of arterio-sclerosis, of disease of the aorta and of the smaller arteries. The diseased condition of the arteries leads to an increase of pressure in the aorta, and produces a hypertrophy of the left side of the heart in consequence; then the hypertrophy of the left side of the heart, which was primarily started by the disease of the aorta, is farther accentuated by the condition of the valves, by the extension to the valves of the same condition which we have in the aorta, and further by the insufficiency of the aortic valves which is brought about by the dilatation of the aortic orifice. The whole, I should think, has started here from the arteries, and is a perfectly typical example of the general arterio-sclerosis.

Now, the lesions of the organs, especially of the kidney and the liver which we find in these cases, are certainly those which are due to an interference with the blood-supply. We always find degenerative lesions in the organs and diffuse increase of the interstitial tissue. There may be focal lesions in the organs, especially in the kidney. These focal lesions are found in a certain number of cases, and are due to more extensive lesions of the arteries supplying small areas of tissue. Sometimes single vessels may be totally occluded, in which cases we should have complete degeneration of small areas followed by atrophy. In the present case, all of the lesions were diffuse. The coronary arteries in this case are little, if at all, altered. That is rather curious, because the coronary arteries are frequently more altered than any others. The condition of the carotid arteries is extremely well marked. The lesions in the arteries have appeared to me to consist primarily in a degeneration of the muscular coat, which is followed by dilatation and by a corresponding thickening of the intima to make good the dilated portion of the vessel. The arteries become very much thickened; and it is very possible that the nutrition of organs is interfered with in an other way. Not only may there be local interference with the blood-supply, but it is very probable that, owing to the destruction of the muscular coat, the proper amount of blood-supply, which every organ controls for itself by means of the vaso-motor nerves, cannot be so well provided for. The arteries are reduced more or less to a condition of elastic tubes. Of course, each organ receives just that amount of blood which its functional activity requires, and it regulates this amount. It regulates it by means of relaxing or contracting the muscular walls of the arteries; but in this case, when the muscular wall of the artery is very largely supplied by a tissue which is incapable of contracting in that way, it is probable that such condition will materially interfere with the nutrition of the organs.

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MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

The annual meeting was held at the Medical Library, Boston, on Wednesday, June 13, 1893.

The meeting was called to order at eleven A. M., by the President, **Dr. James C. White**. One hundred and twenty-one Councillors indicated their presence by signing the roll.

The Secretary read the names of 137 Fellows admitted since the last annual meeting, and of 34 whose deaths had been recorded.

The Treasurer, **Dr. Forster**, presented his report, which was accepted, showing the receipts of the Society for the year ending April 15, 1893, with the balance on hand at the beginning of the year, to have been $11,976.20, and the expenditures $9,939.79; leaving a balance of $2,036.41.

Dr. Minot, for the Committee on Membership and Finances, reported the names of eight Fellows whom the Committee recommended to become retired members; of two to be allowed to resign; of two to be restored, and of ten who had lost their membership by removal from the State and by non-payment of assessments. The report of the Committee was adopted.

It was also voted on recommendation of this Committee that $1,400 of the surplus in the treasury be distributed among the District Societies.

The Committee on Publications reported that **Dr. Thomas Dwight**, of Boston, has been appointed to deliver the Shattuck Lecture at the annual meeting of the Society in 1894.

The Librarian, **Dr. Brigham**, presented his report.

The report of the Committee on securing uniformity in Censors' examinations, which was presented at the meeting in October last, laid on the table and ordered to be sent in print to members of the Council, was taken up.

After considerable discussion by **Drs. McCollom, Harvey, Johnson, Nichols** and **Forster**, Dr. Harvey objecting to the report on the ground that it exceeded the limits of the Charter and could not be passed without permission from the Legislature, it was voted that the subject be referred to a new committee to be appointed by the Chair.

Voted, That the question of the advisableness of the continuance of the distribution of Braithwaite's Retrospect to the Fellows of the Society, be referred to the Committee on Publications, to report at the next meeting.

The Committee on Nominations reported, and the following were chosen officers of the Society for the ensuing year: President, Dr. James C. White, of Boston; Vice-President, Dr. Zabdiel B. Adams, of Framingham; Treasurer, Dr. Edward J. Forster, of Boston; Corresponding Secretary, Dr. Charles W. Swan, of Boston; Recording Secretary, Dr. Francis W. Goss, of Roxbury; Librarian, Dr. Edwin H. Brigham, of Boston. Dr. Reginald H. Fitz, of Boston, was chosen Orator, and Dr. Silas D. Presbrey, of Taunton, Anniversary Chairman, for the annual meeting of the Society in 1894.

Voted, That the next annual meeting of the Society be held in Boston, on the second Wednesday in June, 1894.

Dr. Francis Minot having requested to be relieved from further service on the Committee on Membership and Finances, it was *Voted*, That the thanks of the Council be presented to Dr. Minot for his long and able service as the Chairman of the Committee on Membership and Finances.

The following Standing Committees were appointed:

Of Arrangements: Drs. F. M. Briggs, H. Jackson, J. C. Munro, A. Thorndike, A. K. Stone, J. G. Mumford.

On Publications: Drs. B. E. Cotting, O. F. Wadsworth, G. B. Shattuck.

On Membership and Finances: Drs. F. W. Draper, J. Stedman, E. G. Cutler, L. R. Stone, A. H. Johnson.

To Procure Scientific Papers: Drs. H. P. Walcott, F. H. Zabriskie, H. L. Burrell, S. B. Woodward, L. Wheeler, C. W. Townsend.

On Ethics and Discipline: Drs. G. J. Townsend, G. E. Francis, F. C. Shattuck, C. G. Carlton, E. Cowles.

On Medical Diplomas: Drs. E. J. Forster, H. E. Marion, E. N. Whittier.

Adjourned at 12.40 P. M.

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AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, Milwaukee, Wis., June 6–9, 1893.

TUESDAY, JUNE 6TH. — FIRST GENERAL SESSION.

The Association met in the Academy of Music and was called to order at 11 A. M., by the Chairman of the Committee of Arrangements, **Dr. U. O. B. Wingate**, of Milwaukee.

Divine blessing was invoked by the **Rev. Henry T. Secrist**, of Milwaukee.

On the platform were **Dr. H. O. Walker**, of Detroit, First Vice-President; **Mr. Ernest Hart**, Editor of the *British Medical Journal*, and **Dr. Jesse Hawes**, of Greeley, Col., Fourth Vice-President.

Dr. Wingate introduced **His Excellency Geo. W. Peck**, Governor of Wisconsin, who delivered an

ADDRESS OF WELCOME.

He said he was delegated by a million and a half of people of Wisconsin to bid the Association welcome, which he did with pleasure. Wisconsin was a State where there was no need for any one to be sick, where there was no need for cemeteries, except to bury people who came there from other States, with diseases that Wisconsin had not had time to cure. The governor's address was punctuated here and there with applause and laughter.

Ex-Mayor P. J. Somers was then introduced, who welcomed the Association on behalf of the citizens of Milwaukee.

Dr. Wingate presented the President of the Association, Dr. Hunter McGuire, of Richmond, Va., with a gavel with a silver handle, whose body was made of brick, representative of the solidity of the institutions and industries of the city; its color was cream, representative of the Cream City of the Lakes; and its borders were studded with pearls taken from Wisconsin's rivers.

Dr. Hunter McGuire then delivered the

PRESIDENT'S ADDRESS.

He said our prime object was to study the origin of disease, the immediate occasion of its outbreak, with the means of preventing it, and the best means of loosing its malignant hold, if once fastened upon the individual or the community.

Regarding the membership of the American Medical and allied Associations, he said we could not too highly estimate the importance of attaining the greatest degree of excellence possible in the various independent organizations that were here represented. This could be more effectually obtained through the State and local societies that were in active and friendly relations with us. The State societies should strive to induce their members to form societies in every county of their respective States, in all cities of the same, and in all townships or parts of counties where there was a sufficient number of physicians to justify such organizations.

Relative to the revision of the Code, he thought it should be referred to the several State medical societies entitled to representation at the meeting, and that these societies should report their action to the annual meeting of the Association. This would give us a fair expression of the opinions of the representative societies from all parts of our country; and every reputable American practitioner of medicine would have an opportunity to vote on the subject.

President McGuire then referred to the police regulation of small-pox as a matter for the gravest consideration upon the part of the general government and of the several States of the Union.

Quarantine came in for its share of consideration in the address.

In closing, he touched upon a National Board of Health, and said its necessity would be appreciated when it was remembered that our present laws referred almost entirely to quarantine in time of epidemics or threatened epidemics, such laws being carried into effect by the Marine-Hospital Service through the Treasury Department. He had learned that there would be organized movements to secure legislation by Congress on the lines indicated, and therefore suggested that a committee be appointed to co-operate with the committee appointed by the American Public Health Association and with committees of other important bodies interested in securing the legislation needed.

On motion of **Dr. Scott**, of Ohio, the President's Address was referred to a special committee, to report on the suggestions contained in it.

Mr. Ernest Hart was then introduced and made a few timely and exceedingly appropriate remarks.

The report of the Treasurer, **Richard J. Dunglison**, of Philadelphia, was read by the Secretary, **Dr. Atkinson**, and showed a balance in the treasury of $5,544.78.

The Report of the Secretary was called for, and read.

The Rush Monument Committee asked for further time, which was granted.

The Report of the Committee on Secretary of Public Health, owing to the absence of the Chairman, **Dr. Comegys**, of Cincinnati, was then read by **Dr. Atkinson**.

The committee was given a full hearing by the Congressional Committee. The Chairman of the Senate Committee, while willing to extend the powers of the existing quarantine office, did not think it possible to get an appropriation for its establishment. The members of the House Committee favored such a department, but the session adjourned without action. The best course, the committee thought, was an appeal to President Cleveland that he recommend the matter to Congress in his next annual message.

Dr. Bishop, of Pennsylvania, moved that the report be referred to the same committee to which will be referred the President's Address, to act on the suggestions contained therein.

Dr. J. B. Hamilton, of Chicago, moved, as a substitute, that the report be adopted; that it be printed in the Journal of the Association, and that the committee be continued. Seconded and carried.

The Report of the Committee on the Pan-American Medical Congress, was the next thing in order, and was read by **Dr. Charles A. L. Reed**, of Cincinnati, Secretary-General of the Congress.

The committee reported that every State in the Union, South America and Hawaii would be represented, everything pointing to a successful meeting.

On motion, the report was adopted, and a vote of thanks extended to the committee for their efficient work.

The election of delegates to the Nominating Committee was then proceeded with; after which the Association adjourned until Wednesday morning.

WEDNESDAY, JUNE 7TH. — GENERAL SESSION.

The President announced as the Committee on his Address, Drs. J. F. Hibberd, Richmond, Ind.; C. A. Lindsley, New Haven, Conn.; W. T. Bishop, Harrisburg, Pa.; T. P. Satterwhite, Louisville, Ky., and Nicholas Senn, Chicago.

The Permanent Secretary announced the Committee on Nominations, thirty-four States being represented.

The Permanent Secretary also read invitations for the next session, to be held at Asbury Park, N. J., and at Hot Springs, Ark., which were referred to the Committee on Nominations.

On motion, it was resolved, that in view of facilitating the work of the Sections and in the general interest of the Association, the election of officers of the Association shall take place on Thursday; and that after Thursday no executive business shall be transacted at the general session of the Association except in accordance with a recommendation of the General Business Committee.

Dr. H. A. Hare, of Philadelphia, Pa., read the Address on General Medicine. He selected for his subject

A BRIEF REVIEW OF SOME PRACTICAL ADVANCES IN MEDICINE AND THERAPEUTICS.

The author confined himself to the presentation of certain broad facts illustrative of the present status of the non-surgical phases of advance in medicine. The increased scope, variety and accuracy of diagnostic examinations no longer leave the practitioner any excuse for empirical treatment of a disease on general principles. He said supposedly specific ailments were being recognized as merely symptoms of the real causative and, therefore, curable distemper. A particularly instructive example of such evolution in the art of symptomatic diagnosis was cited in the case of anæmia, so-called. Neither under the comprehensive title, "impoverished condition of the blood," nor as the assumed result of disease in the blood-making organs, has there been warrant for empirically dosing with iron till the patient's teeth were discolored, or with arsenic till he felt as though his backbone were a crowbar; but when with adequate microscopical devices it became possible to count and measure the decrease and increase of the blood-corpuscles in number and size, then a basis for the test and proof of the value of arsenic in pernicious anæmia and of iron in chlorosis was found.

The Permanent Secretary read the Report of the Librarian, in which it was recommended that the terms of transfer of the library to the Newberry Library at Chicago be left to the Board of Trustees and the Librarian, with power to act, and that such action be final.

On motion, the report was received, and the views relative to the library were adopted.

Dr. Henry D. Holton, of Vermont, Chairman, read the Report of the Committee on Revision of the Constitution.

[For the report of this committee, see editorial on page 631 of the last number of the Journal.]

Dr. N. S. Davis made a report on behalf of the committee to confer with committees from the Medical Society of the State of New York and the Medical Association of the State of New York. The committee said in its report, that when it is remembered that the so-called "technical differences" existing between the two associations referred to and the American Medical Association, consists of nothing less than a deliberate abolition of the National Code of Ethics, which is equivalent to a voluntary withdrawal of said associations from further connection with the National organization, it must be apparent to all that it would be most unwise for this body to make any propositions relating to the Medical Society of the State of New York.

On motion, the report was received and filed.

THURSDAY, JUNE 8TH. — GENERAL SESSION.

After the announcement, by Dr. Wingate, of a concert to be given at Schlitz Park, under the auspices of the local physicians of Milwaukee, President McGuire introduced **Mr. Ernest Hart**, of London, who delivered an address entitled

CHOLERA AN EXCLUSIVELY WATER-BORNE DISEASE.

He said that the subject of cholera was one which had perhaps been more written about, more discussed, than any other of our time. It was a universal topic of conversation. Cholera was no longer a thing to be dreaded, to be wondered at, or to be beyond control. In old text-books cholera was summarized briefly as follows: Diagnosis of the disease easy; pathology uncertain; causation unknown; treatment useless. All this had been modified. Cholera was a filth-disease, carried by dirty people to dirty places and spread by dirty or impure water. He denied that the advent of cholera was mysterious, or that any of the incidents of its diffusion were unknown. He looked upon quarantine as a tribute that dirt pays to cleanliness. Cholera comes from India and India only, although it sometimes hibernates in Europe. It had two routes, one across the Caucasus to the Baltic ports, and thence (either directly or through Hamburg) westward. The other route was from Mecca by pilgrim caravans or boat (via Alexandria) to Europe. Last year's epidemic originated in Cashmere, and was brought to Hamburg within five months. All mysterious talk of transmission of the disease by atmospheric currents belonged to a past period. We used to talk of thunder being mysterious; and it is just as reasonable to talk of cholera being mysterious. It was still a common popular notion that cholera comes by Providence and goes by drugs. This was the precise opposite of the truth. Cholera was a man-created disease; and drugs were, comparatively speaking, powerless against it. The war against cholera was the war of cleanliness against filth; and the one kind of cleanliness which was absolutely essential and in the face of which cholera could not spread or become epidemic, was purity of our drinking-water. No community could have the disease that did not invite it by the habitual contamination of its water-supply. Fumigation, railroad quarantines, libations and sprinklings with antiseptic powders and fluids were vain ceremonies, mere sacrifices to the popular ignorance and prejudice. They created a false security and detracted attention from the only important agent of safety, namely, purification of soil, air, and water, but, above all things, purity of water. When the people insisted on municipalities and corporations giving them pure water, cholera would become extinct and its terrors a mere recollection. The latest results of microscopical examination and bacteriological research confirmed the vast mass of evidence collected in the statistical document the speaker had before him; and clinically it had been shown that there never had been an outbreak of cholera in Europe that could not be traced to the distribution of an infected water-supply. This was a matter of clinical and statistical observation. He believed that the members of the Association would see to it, as far as possible, that the people got pure drinking-water. If the Association as a body put itself on record in such an important matter, its voice would be potent and he doubted not successful.

Dr. Wingate offered a resolution of thanks to Mr. Hart for his able address. This was unanimously adopted; and it was also resolved that the address be published in medical journals in full, and copies sent to all State Boards of Health, etc.

Dr. Henry H. Mudd, of St. Louis, then delivered the Annual Address on Surgery. He selected for his subject

SURGICAL PROBLEMS.

Surgical cleanliness had taught us that drainage is not essential to the rapid healing of grave and extensive wounds. This advance had clearly defined a marked difference in the object to be obtained by primary and secondary drainage. No intelligent surgeon was ready to discard the use of secondary drainage in suppurating wounds; but there were many who asserted that they do not use it in fresh, clean wounds, no matter how extensive they may be. The interest in the controversy had been narrowed down to the use or abuse of drainage in operative wounds which were clean and aseptic. It must be awarded a new place now, when perfect cleanliness is supposed to accompany every fresh wound. Can we dispense with the drainage-tube in all so-called clean wounds? He thought not. Antiseptic surgeons assert that every operative wound can be made aseptic, and by a proper technique union by first intention can be secured. The conditions to be fulfilled to attain this end with a patient in fair general condition were an incised wound, a thorough hæmostasis, a perfect approximation, and the immobilization of wounded surfaces.

Another problem was the possibility of securing the permanent surgical relief of hernia. A permanent cure was established in many cases in children by the restraining influence of a truss. In individual cases where this permanent retention of the herniated viscus is possible during childhood, it should be given a full trial before resorting to operative measures, since they are still uncertain in their results. The cure of hernia in adults by truss-wearing was an improbable event, and should not influence the decision against operative relief. Permanent recovery followed operative effort, he believed, in from sixty to eighty per cent. of the cases. Even the lower percentage justified continued operative effort.

The treatment of appendicitis was still an open question. The care of the individual case offered choice of lines of treatment which made a decision most difficult. The anatomical and clinical investigations of the past few years had demonstrated very clearly that the American idea of the pathology of inflammations in this region was correct.

(To be continued.)

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Recent Literature.

Human Anatomy. A complete systematic treatise by various authors, including a special section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A. and M.B., Surgeon to, and Lecturer on Surgery (formerly Lecturer on Anatomy) at, the Middlesex Hospital, etc. Illustrated by 791 woodcuts, 214 of which are printed in colors. Philadelphia: P. B. Blakiston, Son & Co. 1893.

The book before us is a very important one. It enters the lists with the well-known anatomies which have held for many years the sway of the schools. It is useless to speculate on the result of the competition. Our task is simply to report on the merits of the new candidate. It has necessarily the advantages and the defects consequent on being the work of many authors. Certainly no man can be expected to have attained the highest excellence in all departments of anatomy. Hence it is well to have each branch treated by whoever can do it best. On the other hand, such a book can hardly escape the charge of being "patchwork." Discrepancies are almost certain. It also happens too frequently that some of the writers do not rise to the level of the rest.

The osteology is written by Mr. J. Bland Sutton. As a whole, it is excellent. Much attention is given to the development of the bones. The illustrations are very good indeed. We are particularly pleased with the very numerous figures of the individual carpal, metacarpal, tarsal and metatarsal bones. The plan of red and blue lines for muscular attachments has been adopted.

When we say that the section on the joints is written by Mr. Morris, we have said enough to manifest its excellence to all who know his book on the subject. We could make certain criticisms, but we have no space for such discussions.

The muscles fell to the share of Mr. Davies-Colley. There is an introductory chapter on the internal structure and mechanics of muscles which is very good. We regret that there are no remarks on the general morphology of the system. Again, we are able to speak of the work in the highest terms. The actions of the muscles receives due attention. We are so delighted to find the insertions of the extensor communis digitorum into the bases of the proximal phalanges correctly described, that we can almost excuse the statement that the lower border of the gluteus maximus is at the fold of the buttock. It is only another instance of the perpetuation by an able man of a gross blunder which has obtained general acceptance.

We are somewhat less satisfied with Mr. Walsham's treatment of the arteries, veins and lymphatics. Many of the plates are excellent, but not a few represent dissections which, however beautiful as preparations, show the relations far too much disturbed to be clear to students. The preparation of the heart and great vessels is, in our opinion, by no means in accord with nature. The scheme of the coronary arteries puts the origin of the pulmonary artery in an absolutely impossible position. Some, however, of the semi-diagrammatic figures, the scheme of the superior intercostal artery, for instance, and that of the arteries of the hand are very good.

The nervous system is very well described by Dr. H. St. John Brooks. Then comes a very good chapter on the eye and orbit by Mr. Gunn, and others on the ear, tongue and nose by Mr. Henseman. This is followed by a section on the thorax, by the latter, which is made to include the larynx, which shows good and conscientious work. We are now struck with the artificial method pursued in laying out the work. The larynx is classified with the thoracic organs, but the œsophagus is not, but is called a part of the digestive organs above the diaphragm which are taken together, with the exception of the teeth. For reasons which we do not know, these were described with the bones. The abdominal viscera are dealt with by Mr. Treeves, whose name is a tower of strength. It is needless to say that this work is well done. Then follow the urinary and generative organs by Mr. Anderson. The pelvic organs are treated somewhat topographically, the perineal muscles being included in this section.

Surgical and Topographical Anatomy is made into a separate section, written by Mr. Jacobson. This section, in our opinion, is neither well planned nor very well done. For the plan, the editor is presumably responsible. Thus Dr. Brooks, when writing the nervous system, gave the cranio-cerebral topography and the relations of the origins of the spinal nerves to the vertebræ. In regard to the latter point, Reid is followed. Mr. Jacobson gives a diagram by Gowers. All this had much better have been done in one place. The same remark applies to other topics. We have alluded to the error about the gluteus maximus. Mr. Jacobson says that the fold "neither corresponds accurately to, nor is caused by, the lower margin of this muscle."

Finally, in a short chapter, Mr. Anderson discusses the now burning question of the limitation of the regions of the abdomen.

Taken as a whole, we have no hesitation in according very high praise to this work. It will rank, we believe, with the leading anatomies. Its chief fault is that it is the work of too many; but possibly severe editing in a future edition will remove some of its anomalies.

The illustrations are handsome and the printing is good. T. D.

Vertebrate Embryology: A Text-Book for Students and Practitioners. By A. Milnes Marshall. 8vo; pp. xxiii, 640. New York: G. P. Putnam's Sons. 1893.

The volume before us is a very valuable addition to biological text-books, and is beyond question the best introduction in any language to the practical study of vertebrate embryology. It comprises six chapters, which give respectively a *résumé* of the segmentation of the ovum and of the formation of the germ-layers, and then of the development of five well-chosen types, to each of which a chapter is devoted. The types are amphioxus, the frog, the chick, the rabbit and man. Both the author's and the publishers' parts are well done. The form of the descriptions, the clear and comprehensive statements of the known facts, the wise recognition of the defects of our present knowledge, and the consistent emphasis of the essential morphological facts are felicitously combined in Marshall's books. The best chapters are those on the frog and the rabbit, the development of both of which the author has thoroughly studied. The chapter on amphioxus is based wholly, that on man chiefly, upon the writings of others.

The illustrations are nearly all wood-cuts and in large part original.

We think that the author would have increased the value of his work by greater attention to histology and histogenesis, a side of embryology on which English investigators are noticeably weak. We notice but few defects, for the book has been so conscientiously prepared it is in most respects authoritative. We consider it a defect that the division of the mesoderm into two primary tissues (mesothelium and mesenchyma) is not even alluded to. The only important error we have found is in the history of the thyroid gland, which is not only vague but inaccurate, since it does not mention the true history of the gland, as elucidated by Born, — that is to say, its development by the fusion of the single median anlage with two lateral anlages derived from the epithelium of the fourth pair of embryonic gill clefts.

We are sorry to notice that London *Punch* has reached the last stages of dementia. The following is his latest medical joke: "Dr. Robson Roostem Pacha says he deals out fair and equal measure to all his patients, no matter what their rank and station in life may be. He says to them all 'just wait,' — and isn't 'just weight' a perfectly fair measure?"

THE BOSTON

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MEDICAL ASPECTS OF THE BORDEN CASE.

The readers of the Journal are undoubtedly fully familiar with the facts relating to the double homicide which has become historic under the title of the "Borden Case." In the morning of August 4, 1892, in their home on a much frequented street in Fall River, an old man and his wife were killed by hatchet blows delivered upon the head, crushing the skull in each case, and causing fatal injuries to the brain. The killing was done under circumstances which exposed the murderer, whether an inmate of the house or an intruder, to enormous risks of discovery. The interval of more than an hour between the two murders compels the conclusion that there was the coolest premeditation and the most adroit planning as to execution and escape. It is our purpose, however, to review some of the interesting medical features of this extraordinary affair rather than to dwell on the material facts relating to it.

As has been already intimated, the cause and manner of the deaths were very plain; indeed, they were so plain that the medical examiner in his initial connection with the affair deemed a careful and precise study of the lesions, both external and within the cranial cavity, superfluous. Here were two heads crushed in by some edged weapon, and death had obviously resulted therefrom; as in the Almy-Warden homicide in New Hampshire, further examination seemed needless. This unfortunate view of the case temporarily led the medical examiner from the path of his specific duty, and caused him to turn aside to help in purely police functions. It is fair to state, however, that this primary error, which later caused considerable embarrassment to the medical examiner when testifying, was largely atoned for by a full study of the wounds and other anatomical appearances before the inquest was concluded. The medical examiner really showed no lack of intelligent zeal; and in the immediate securing of photographic views of the dead bodies *in situ*, and in the prompt transmission of the murdered victims' stomachs to an expert for chemical and microscopic examination, he set a commendable example and saved evidence of great value. We have adverted to his initial digression from his official duty, not for the purpose of sharply criticising the manner in which a most onerous and responsible function was performed, but to emphasize the general lesson that, in such homicidal emergencies, the law requires the medical examiner to apply himself strictly to the problem, *how* was the death caused, the results of his investigation being valuable in proportion to the thoroughness of his methods in reaching them; the question, *who* caused the death, is not his to solve.

An attempt was made in court by the defence to cast odium upon the fact that at the autopsy upon the two bodies the heads were removed for the purpose of preparing the skulls for deliberate study. The attempt failed, and, as we think, very properly. There are plenty of precedents for this procedure and for the exhibition of anatomical specimens to the jury in capital cases. In a case of such gravity, there should be no limit to the search for trustworthy evidence; and the prepared skulls offered to both parties to this issue the almost indispensable opportunity for correct study of the fatal lesions, and for observation of other facts pertinent to the case. The relative thickness, weight and vulnerability of the cranial bones could be determined best by the prepared specimens; while, according to the testimony, the marks left by the weapon showed plainly not only the extent of the comminution and crushing, but the direction and force of the blows. One wound observed in the man's skull possessed special interest; it corresponded with an external cut in front of the ear and involved the entire thickness of the petrous portion of the left temporal bone, completely traversing that dense osseous tissue, and making a clean section through the carotid canal, leaving a sharply defined cut which marked the depth to which the weapon penetrated within the cranial cavity at that point and demonstrated the thickness of the blade. It was a suggestive coincidence that a hatchet found, after the murders, in the cellar of the Borden house, fitted this cut accurately; and it was an unpleasant incident for the counsel for the defence when a new hatchet, introduced in the cross-examination for the obvious purpose of discrediting the former demonstration, was clearly shown to be a misfit.

The question of the priority of the wife's death and of the interval of that priority was made a purely scientific one. There was evidence of a difference in the temperature of the two bodies, in the color and consistency of the blood effused in the two cases and in the stages of gastric and intestinal digestion in the two individuals. Upon a study of all the factors, the conclusion was reached that the death of Mrs. Borden occurred about an hour and a half before that of her husband.

The matter of blood-stains, so far as the identification of human blood-corpuscles was concerned, had a secondary importance in this trial. Numerous weapons were in evidence; but they were all found to be free from blood-stains, although most of them presented spots of rust or other discoloration that at first view were suspicious. The only spot of blood found on the clothing of the accused was a minute dot, not larger than the head of a small pin, situated on the back part of a white underskirt; the corpuscles in this stain showed a micro-metric diameter "consistent with" that of human blood-disks, but also not to be distinguished from the blood of menstruation.

Other questions of medical interest upon which the experts gave testimony, related to the physical ability of a woman of ordinary strength to inflict the wounds found by using a hatchet of ordinary size; the amount of blood-staining which an assailant engaged in delivering the blows would probably receive upon his clothing and person; the behavior of arteries when they are wounded and the direction and force of the arterial spurts; the relative positions of the assailant and victim in the two cases; the distribution which blood spatters would take upon surrounding objects when thrown from a blood-soiled weapon used in delivering blows.

Upon all these questions, the medical witnesses for the commonwealth were substantially unanimous. There were no important points upon which they varied. Their testimony appeared to satisfy all the demands of the occasion and the counsel for the defendant so far assented to its candor and authority that the two eminent experts who had been retained to represent the interests of the defence were not called upon to testify. In this respect, this trial was an exceptional one, and illustrated a condition of affairs relating to medical experts that in view of some recent exhibitions in a neighboring State may be characterized as ideal.

The record shows that the medical testimony had another special feature. It dealt largely with objective facts, and had comparatively little to do with mere theories or opinions. In this regard it represented the highest kind of so-called "ordinary" testimony. The hypothetical question, that peculiar legal invention which is made to cover so much and yet has so much of the hue of partisanship, gave way in the Borden trial to a better form wherein the witness, having listened to the previous testimony, was asked what conclusions he had reached concerning a given question and what evidence he had heard which brought him to that result.

To those who followed the course of the judicial proceedings in this case, it must have been plain that the medical testimony touched but remotely the question of the guilt or innocence of the young woman under indictment. All that the experts placed in evidence would apply with equal propriety to any other suspected individual, man or woman. The question of this daughter's relation to the crime was to be solved by another kind of proof, and with that we are not now concerned.

It is not improper to state, in conclusion, that to the medical mind, the appearance and demeanor of the defendant herself, from the opening of the court up to the moment of her acquittal, was one of the most interesting features of this memorable trial. Upon any assumption, whether of defiant guilt or of conscious innocence under sharp suspicion, her behavior during the daily sessions of the long trial was noteworthy; in a sultry court-room, under the staring scrutiny of a crowd of spectators not altogether friendly, listening to the violent upturning of the domestic secrets of the Borden household, to the details of the two tragedies, and to the minutest analysis of all her own acts in a trying emergency, the whole experience in court coming after many months of confinement in jail, her conduct in this judicial ordeal showed a degree of self-control, of physical endurance and of what can most aptly be characterized in the language of the street as "nerve," that makes her a psychological phenomenon, a sphinx-like prodigy as worthy of study as it is difficult to understand.

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PYREXIA AS A FRIEND.

DR. OTTO TROSS, of Karlsruhe (Baden), in an address before the local medical society, has taken occasion to inveigh against the use of antipyretics in fevers.

From the report of his paper in the *Bulletin of Pharmacy*, we learn that he "discussed the nature of fever; regarding it, in the case of contagious diseases, as the result of toxines elaborated by bacilli, and on this basis, concluded that the aim of the physician should be to either destroy or check the development of the micro-organisms." He maintained that to give remedies against the fever as such, was merely to attack a symptom and not the disease itself.

Passing then to the important question, What then is to be given? Dr. Tross answers that, in his opinion, the best remedy against the development of bacteria is the fever itself. The first group of bacilli entering the system set up, by the toxines they excrete, an elevation of temperature which is unfavorable to any further development, just as in the case of alcoholic fermentation the action of the ferment is eventually arrested by its own by-products.

But this remedy is a two-edged sword which Nature can only use with impunity for a short time; if long persisted in, a paralyzing effect is produced upon the heart, which may be fatal. And here is the true field for medicinal aid, says the author: to support the heart and counteract the tendency to paralysis, at least, this is the indication until the enemy (the ultimate cause) can be directly attacked.

He goes on to urge that all antipyretics are more or less dangerous to the heart, and therefore increase the mischief possibly already initiated by the fever; hence, on principle, he avoids their use totally and unconditionally.

The results of this *modus operandi* in practice, demonstrate, in the writer's opinion, its justness. He recalls, among others, two cases of severe pneumonia in which the heart threatened to give way, but by the vigorous use of all possible excitants, the crisis was triumphantly passed. During the whole of his practice, he has never had occasion to regret adherence to the principle laid down.

Briefly, his treatment consists in giving large doses of brandy; the higher the temperature, the larger the quantity of the spirit given. It acts as a fuel for the system, and so economizes the vitality and strength of the organism which would otherwise have itself to supply the material for oxidation. At the same time, he combats the heart-paralyzing action of the toxines by means of all suitable cardiac tonics, especially by camphor and then digitalis, caffeine, decoction of cinchona, etc.

In such infectious diseases as are notoriously dangerous to the heart, these stimulants are given from the first. The author notes that all stimulants must not be suddenly withdrawn when the crisis is passed, but the system should be gradually weaned from their use.

There is nothing especially new in the views or methods above enunciated, except the boldness in the use of alcohol and the confidence in digitalis.

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THE DIAGNOSIS OF DIPHTHERIA.

THE New York Board of Health has just issued an important circular concerning the general use of bacterial cultures for the diagnosis of diphtheria. It points out the importance of the distinction between true diphtheria, in which the mortality is very high and the danger of transmission to others great, and false diphtheria, in which the mortality is low and the danger of infection slight. It then goes on to say that the differential diagnosis can be made by bacteriological experiments within twelve hours, while without this assistance it is difficult or impossible. The Health Department is now prepared to make use of bacterial cultures for diagnosis in all cases of suspected diphtheria occurring in the city, and in every case desires either that the physician should himself make the test or that he should authorize an inspector to do so. This is done by gently rubbing a cotton towel against the affected mucous membrane and then drawing it over the surface of the culture medium. Physicians can obtain, free of cost, culture-tubes and towels, together with specific directions for their use, at any one of a number of drug-stores mentioned. If, on the other hand, the physician desires an inspector to make the test, he is requested to state this when the notification is sent to the Department. The diagnosis will be ready in every case by noon on the following day, and cases which prove to be false diphtheria will not be visited by the Department. Health Commissioner Cyrus Edson is authority for the statement that investigation has shown that at least seventy per cent.

of all the cases of supposed diphtheria that have hitherto been sent to the Willard Parker Hospital were what is known as false or non-contagious diphtheria, lacking the characteristic Klebs-Lœffler bacillus.

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MEDICAL NOTES.

A Royal Oculist. — The Duke Karl Theodor of Bavaria still continues to perform operations on the eye, gratis, in different parts of Southern Germany. He has recently celebrated his two thousandth operation. His operating-room was covered with flowers, and the occasion was made much of. Much champagne was drunk; and the patient who had the good fortune to be No. 2000 received numerous gifts.

Medical Knights.—The Queen of England, every year on her birthday, confers titles of different grades upon a certain number of her subjects, and the medical profession generally receive a few. This year, Dr. Charles Cameron, M.P. has been made a baronet, and Dr. B. W. Richardson, Dr. W. O. Priestley and Mr. G. A. Pilkington have been knighted. They will all in future have the prefix "Sir" to their names.

Enforcement of the Quarantine Laws. — The Secretary of the Treasury has instructed all treasury officials and consular officers that the quarantine regulations of the Treasury Department approved by the Secretary of the Treasury, February 24, 1893, and April 4, 1893, with subsequent circular additions and amendments, supersede all circular quarantine regulations previously issued; and all quarantine circulars issued prior to the dates of approval of said regulations are hereby revoked. Collectors of customs, in enforcing the provisions of the quarantine laws and regulations denying entry to vessels or detaining the same, are directed to report immediately by telegraph to the supervising surgeon-general of the Marine-Hospital Service the reasons therefor, and other necessary information. While the quarantine rules cannot be relaxed, no unnecessary detention or delay to vessels should be caused in enforcing the same, as it is the purpose of the department to facilitate commerce in every proper way consistent with public safety.

NEW ENGLAND.

Gifts to the Harvard Medical School. — Dr. H. W. Williams has promised the sum of $25,000, not yet available, for the endowment of a professorship of ophthalmology. Miss Ellis has provided the departments of physiology and pathology with two thousand dollars a year for five years.

The Harvard Medical School Association held its Annual Meeting June 27th, at the Harvard Medical School, at 12 m. The dinner at the Hotel Vendome at 1 p. m., was attended by 170 members. The President, Dr. J. R. Chadwick, presided. Addresses were made by Drs. J. M. DaCosta of Philadelphia, Abram Jacobi of New York, Mr. Ernest Hart, Editor of the *British Medical Journal*, and Prof. W. S. Chaplin of St. Louis. A detailed report will be published later.

Annual Meeting of the Harvard Dental Alumni Association.—The Harvard Dental Alumni Association held its twenty-second meeting at the Hotel Thorndike on the evening of June 26th. At the dinner, presided over by Dr. G. H. Ames, the prospects of obtaining a new school-building were discussed. Dr. D. M. Clapp, the Chairman of the Committee, reported that $18,000 of the $100,000 desired had been subscribed. A committee was appointed to try to secure the appointment of a Doctor of Dental Medicine on the State Board of Dental Registration. Speeches were made by Lieutenant-Governor Wolcott, J. C. Warren, M.D., Drs. D. M. Clapp, L. D. Shepard, W. E. Page, and Professors Chandler, Fillebrown and Smith. The following officers were elected: President, V. C. Pond; Vice-President, D. M. Clapp; Secretary, H. L. Upham; Treasurer, W. E. Page. D. M. Clapp was made a member of the Council. The other officers of the Council, as well as the Executive Committee and the Committee on Dental School, were re-elected.

NEW YORK.

The Will of Edwin Booth leaves the sum of $5,000 to the Home of Incurables at West Farms.

A Lioness in the Central Park menagerie, which has once before destroyed her young, gave birth to three fine whelps on June 21st. Having killed two of these, the third was taken away, and is now being suckled by a Newfoundland bitch.

St. John's Guild. — Judge Ingraham, of the Supreme Court, has rendered a decision awarding St. John's Guild $10,000 of the $100,000 which Mrs. Elizabeth Fogg left on her death, in 1890, to be distributed among ten different charitable institutions. She had St. John's Guild as one of the beneficiaries of her will in a memorandum which she drew up; but when the will was finally executed the name of St. John's Guild was omitted by an oversight. The floating hospital of the Guild, with improved bathing facilities, is about to resume its summer trips.

Hamburg Water. — Health Officer Jenkins has received a report from Dr. Nash, at Hamburg, stating that the recently published reports that but little filtered water was used in that city are entirely without foundation. On the contrary, all the water now distributed is filtered, and the use of water from the river has been abolished. The Hamburg-American line of steamships is now using only artesian water from a pure source.

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Miscellany.

NATIONAL QUARANTINE.

A special meeting of the New York Academy of Medicine was held June 20th for the purpose of hearing a report from the Committee on National Quarantine, which was in part as follows: "We [illegible] that the most certain protection of this or any other civilized country against the ravages of infectious diseases lies in the practice of carefully planned internal sanitation, we are yet convinced that, for the present at least, an intelligently vigorous system of maritime quarantine is necessary in this country. . . . Our investigation of this subject has convinced us that the interest of the public health of this country demands the establishment at an early date of a National Bureau of Health, under whose supervision and control, together with other matters concerning the public health, the maritime quarantine system should be placed. The duties of such a board, in addition to those involved in a maritime quarantine, should be to sustain and encourage research into matters concerning the causes and prevention of disease; to obtain and disseminate information on matters affecting public health; to formulate and enforce such rules and regulations as may be necessary to prevent the introduction of contagious or infectious diseases and the spread of the same within the territory of the United States; to advise the several departments of the Government, the executives of the several States, and the Commissioners of the District of Columbia on all questions submitted to them relating to the public health, or to tender such advice whenever, in the opinion of the Board, such counsel would be conducive to the public weal. After deliberation the National Quarantine Committee of the Academy of Medicine has agreed that in order to secure the objects for which it was appointed it seems necessary that a national bureau of public health should be organized, quarantine being a function of the bureau, and it desires to take such steps as it may consider necessary to carry out the project."

The Chairman of the Committee, Dr. T. Gaillard Thomas, in presenting the report, stated that the committee could not go further until its powers had been enlarged. On motion of Dr. J. D. Chapin, the Academy voted that the additional functions should be given the committee, and that it should be instructed to do all in its power to secure the creation of a national bureau of health with the powers outlined in the report. The committee, therefore, now has full powers to act in the matter, and it will, as the representative of the Academy, coöperate with other medical bodies throughout the country in endeavoring to bring about the desired result.

During the discussion on the committee's report the President of the Academy, Dr. Roosa, introduced Dr. W. W. MacGregor, Laredo, Texas, who stated that while the Texas authorities maintained a good quarantine against Mexico, he believed its efficiency could be increased by the agency of a national health bureau. The great danger was from the lack of attention to sanitary precautions in Mexico.

A LONG-DISTANCE WALK.[1]

LAST year there was a long-distance ride from Berlin to Vienna, which was almost universally condemned in this country from its having been attended with great suffering and cruelty to the unfortunate horses. This year a long-distance walk has taken place between Berlin and Vienna, which, whilst it has afforded evidence of human endurance, has not been attended by any suffering to the competitors, who voluntarily took part in it. The walk in question has some points of physiological interest. The distance from Berlin to Vienna is some 360 miles. There were fifteen pedestrian competitors, and the first two to arrive were said to be "vegetarians." The winner took 154 hours and 45 minutes, and the competitor who was second, a little over 156 hours to accomplish the distance. The former is said to have arrived in an exhausted condition, whereas the latter had not apparently suffered at all from his exertions. Both are stated to have lost five pounds in weight since they started. The fact that these men have shown themselves able to walk eighteen hours a day on the average for seven days, shows what can be done on a "vegetarian" diet. The average performance in one day of from fourteen to fifteen hours is stated to have been forty-nine English miles. That a large amount of physical work can be accomplished on a so-called vegetable diet is undoubted. The distances which coolies and the natives of India, for example, will traverse, and the weights they will carry on a vegetable diet, with an allowance of butter or fat, are well known.

TESTS OF DEATH.

DR. EDWIN HOWARD describes a case[1] in which the question whether death had occurred was entered into at length, because of the lifelike appearance of the body, and a history of a previous deathlike trance. With Sir Benjamin Ward Richardson the following ten tests were undertaken, two of which argued for, the other eight against, the presence of life. The paper is intended to show that the "diaphanous test" (No. 10) is unreliable, as in this case the fact of death was subsequently proved by waiting for decomposition. The list of tests is instructive, and may at any time be useful to a medical man.

(1) Heart sounds and motion entirely absent, together with all pulse movement. (2) Respiratory sounds and movements entirely absent. (3) Temperature of the body taken from the mouth the same as that of the surrounding air in the room, 62° F. (4) A bright needle plunged into the body of the biceps muscle (Cloquet's needle test) and left there shows on withdrawal no sign of oxidation. (5) Intermittent shocks of electricity at different tensions passed by needles into various muscles and groups of muscle give no indication whatever of irritability. (6) The fillet-test applied to the veins of the arm (Richardson's test) causes no filling of veins on the distal side of the fillet. (7) The opening of a vein to ascertain whether the blood has undergone coagulation shows that the blood was still fluid. (8) The subcutaneous injection of ammonia (Monte Verdi's test) causes the dirty brown stain indicative of dissolution. (9) On making careful movements of the joints of the extremities, of the lower jaw and of the occipito-frontalis rigor mortis is found in several parts.

Thus of these nine tests eight distinctly declared that death was absolute; the exception, the fluidity of the blood, being a phenomenon quite compatible with blood preter-naturally fluid and at a low temperature, even though death had occurred.

There now remained the diaphanous test (10), which was carried out by the aid of a powerful reflector lamp, the scarlet line of light between the fingers was as distinct as it was in living hands subjected to the same experiment.

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[1] Lancet, June 10th.

[1] Lancet, June 10th.

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BACTERIA AND CALCULI.[1]

At a recent meeting of the Paris Academy of Sciences, Dr. Galippe presented a paper on the relation of microbes to calculous deposits and concretions within the body. As the result of eight years' work on the subject, he found all varieties of stones and concretions to contain microbes of a peculiar kind. These he regarded as the causes of the chemical decompositions which led to the formation of the deposits. Healthy organs frequently contain the micro-organisms in large numbers, but they produce no harmful effect so long as the body fluids are in a normal state. When the fluids become morbid, however, the microbes "set to work to produce the deposits which develop into gravel and stone." By cultivating the bacteria in a solution containing human saliva for several years, he obtained from it hundreds of little stony concretions which were identical in character with ordinary salivary concretions. Dr. Galippe suggests that his microbe, which can be isolated and artificially cultivated, might be employed for a therapeutic purpose, namely, to induce calcareous changes in tuberculous foci, and thereby to arrest the progress of tuberculous disease.

These results have in a measure been anticipated by Mr. H. Robinson, in Cambridge, England, who described how, by cultivation of certain specific bacteria, among them the bacterium putidum fluorescens, obtained from well-water, he had been able to produce crops of crystalline concretions of triple phosphate. He suggests that the formation of calculi in the body may be due to the production in it of ammonia by micro-organisms, and he finds that certain of the microbes found in the human mouth produce triple phosphate crystals with great facility. This fact, has led him to suppose they may be the cause of the deposition of tartar on the teeth, and he has shown that certain micro-organisms commonly found in the mouth do produce that substance in the test-tube.

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OBITUARY.— CYRUS FAULKNER CARTER, M.D.

In the death of Dr. Cyrus F. Carter, which occurred June 14, 1893, the profession has lost one it could ill spare.

Possessing in an unusual degree the natural qualifications for a successful practitioner, supplemented by a thorough training both practical and theoretical, he was admirably fitted for the life-work he had chosen, and upon which he had so far advanced as to be ranked not simply as a man of promise, but one whose success was already assured. Genial and sympathetic, yet prompt in decision and firm in execution, equally ready for emergency, and clear in cases requiring patient logical deduction, his presence and counsel will be sorely missed both by his patients and by those physicians who had learned his worth.

Apart from his devotion to practical work in the hospital and in his rapidly-growing practice, Dr. Carter found time to keep pace with the advances in [illegible], and added a number of contributions to medical literature.

He was born at [illegible], December [illegible], 18[illegible]; he took his degree from the Harvard Medical School in 1887, during his service in the then existing Nervous and Renal Department of the Boston City Hospital. He had become early interested in neurology, and was immediately given the position of assistant physician in the Neurological Department of the Massachusetts General Hospital, an appointment which he continued to hold, leaving his handwriting on the records at a date preceding his death by only two days, testifying to his unswerving devotion to duty without regard to personal comfort. The premonitory symptoms of his malady were already appearing, and he probably suffered more than he acknowledged.

He had apparently entirely recovered from the effects of an attack of appendicitis two years previously. Thirty-six hours before his death, symptoms of indigestion appeared, from which he seemed for a time convalescent; but a sudden perforation led to general peritonitis and fatal collapse, placing him beyond the reach of surgical relief.

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Correspondence.

EDEBOHL'S SPECULUM.

St. Paul, Minn., June 21, 1893.

Mr. Editor: — It seems a pity that the profession as a whole should not recognize more generally a good thing when it is offered to them.

But such seems to be the case in regard to Edebohl's speculum. For all cervical operations and curetting and irrigation of the uterine cavity it has no equal. With it, the patient is in the prone or lithotomy position, and the parts are in the state we usually study them, a matter of no small importance. The uterus can be brought down with such facility that stitches may be tied with the fingers with the greatest of ease in lacerations.

The speculum is to be used, in my opinion, solely as an operative one, the patient being under the influence of anæsthesia. As an office speculum with the parts in an unrelaxed condition it is sure to prove disappointing.

I write this after having had a long experience with Sims or some of its modifications, and have since this had sufficient experience with Dr. Edebohl's instrument to more than prove its worth. Before using this speculum a careful reading and following of the clear directions given by Dr. George M. Edebohl will well repay the operator.

I trust you will find this worthy of a place in your journal as it is written in the spirit of a desire to call more general attention than I believe has been given to a worthy and comparatively new aid to the more satisfactory practice of gynæcology. Very truly, Charles F. Denny, M.D.

METEOROLOGICAL RECORD,

For the week ending June 17, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.		[illegible]
	Daily mean.	Daily mean.	Maximum.	Minimum.	8 A.M.	8 P.M.	Daily mean.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	[illegible]
S...11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	[illegible]	18	C.	C.	
M..12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	N.E.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T..13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100	[illegible]	N.	N.E.	[illegible]	[illegible]	O.	R.	[illegible]
W..14	30.07	[illegible]	[illegible]	[illegible]	[illegible]	95	[illegible]	E.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T..15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	E.	[illegible]	[illegible]	C.	C.	
F..16	30.13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	91	N.E.	N.E.	[illegible]	14	O.	O.	
S..17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	97	[illegible]	N.E.	N.	[illegible]	10	[illegible]	[illegible]	0.24

[illegible] Mean [illegible]

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[1] British Medical Journal, May [illegible]th.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 17, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal Diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,891,306	[illegible]	316	18.59	14.56	3.90	7.41	.65
Chicago	[illegible]	[illegible]	177	15.62	10.34	3.30	4.40	3.08
Philadelphia	1,115,562	397	138	[illegible]	[illegible]	3.75	5.25	2.75
Brooklyn	[illegible]	306	107	9.90	15.51	3.30	2.31	.66
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	197	62	13.26	13.77	1.53	5.61	1.53
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	136	72	20.72	7.40	10.36	4.14	2.96
Cincinnati	305,000	94	14	14.84	10.64	4.24	5.30	1.06
Cleveland	[illegible]	86	33	24.38	11.61	10.44	—	9.28
Pittsburg	[illegible]	—	—	—	—	—	—	—
Milwaukee	[illegible]	72	30	18.07	6.95	4.17	4.17	4.17
Nashville	81,754	27	[illegible]	18.50	14.80	14.80	—	—
Charleston	65,165	30	13	—	6.66	—	—	—
Portland	40,000	10	[illegible]	—	40.00	—	—	—
Worcester	96,217	27	11	7.40	11.10	—	—	3.70
Fall River	87,411	26	10	23.10	19.25	19.25	—	—
Lowell	87,191	29	9	24 15	13.80	6.90	3.45	3.45
Cambridge	77,100	22	6	4.55	13.65	—	—	—
Lynn	62,656	15	3	—	33.33	—	—	—
Springfield	48,684	5	2	20.00	—	—	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	13	4	15.38	7.69	—	7.69	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	16	6	6.25	12.50	—	6.25	—
Brockton	32,140	9	4	—	—	—	—	—
Haverhill	31,396	6	0	—	16.66	—	—	—
Chelsea	30,264	13	2	—	23.07	—	—	—
Malden	[illegible]	—	—	—	—	—	—	—
Fitchburg	27,146	7	4	28.56	—	—	—	—
Newton	[illegible]	—	—	—	—	—	—	—
Taunton	26,972	10	3	10.00	—	—	—	10.00
Gloucester	26,688	8	1	12.50	—	—	—	—
Waltham	22,058	3	0	—	—	—	—	—
Quincy	19,642	8	3	37.50	25.00	—	—	12.50
Pittsfield	18,802	1	0	—	—	—	—	—
Everett	16,585	8	3	—	—	—	—	—
Northampton	16,331	—	—	—	—	—	—	—
Newburyport	14,073	9	2	—	11.11	—	—	—
Amesbury	10,920	1	1	—	—	—	—	—

Deaths reported 2,849: under five years of age 1,051; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 447, consumption 369, acute lung diseases 315, diphtheria and croup 132, diarrhœal diseases 115, typhoid fever 55, cerebro-spinal meningitis 45, scarlet fever 43, whooping-cough 19, measles 16, erysipelas 7, malarial fever and typhus fever 6 each, small-pox 3.

From cerebro-spinal meningitis New York 15, Chicago 11, Boston, Washington and Cleveland 3 each, Brooklyn and Fitchburg 2 each, Philadelphia, Milwaukee, Worcester, Lowell, Gloucester and Amesbury 1 each. From scarlet fever New York 13, Philadelphia 8, Brooklyn 6, Boston 5, Chicago 4, Milwaukee 2, Washington, Cleveland, Fall River, Lowell and New Bedford 1 each. From whooping-cough Chicago and Philadelphia, 4 each, New York and Cincinnati 3 each, Brooklyn, Boston, Milwaukee, Nashville and Marlborough 1 each. From measles New York 6, Chicago 3, Quincy 2, Philadelphia, Cincinnati, Lowell, Cambridge and Springfield 1 each. From small-pox New York 2, Philadelphia 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending June 3d, the death-rate was 17.9. Deaths reported 3,537; acute diseases of the respiratory organs (London) 290, measles 111, whooping-cough 78, diarrhœa 71, diphtheria 70, scarlet fever 48, fever 23, small-pox (London 9, Halifax 3, Oldham 2, West Ham 1) 15.

The death-rates ranged from 10.5 in Croydon to 24.7 in Liverpool; Birmingham 18.2, Bolton 19.1, Huddersfield 17.1, Hull 16.2, Leeds 17.6, Leicester 20.3, London 17.6, Manchester 21.7, Newcastle-on-Tyne 19.8, Nottingham 12.1, Plymouth 14.4, Portsmouth 13.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 17, 1893, TO JUNE 23, 1893.

Leave of absence for one month and twenty days, from August 1, 1893, is granted **CAPTAIN CHARLES E. WOODRUFF**, assistant surgeon.

FIRST-LIEUT. HARRY M. HALLOCK, assistant surgeon, will, on July 6, 1893, proceed to Griffin, Georgia, and report to **CAPTAIN GEORGE G. GREENOUGH**, 4th Artillery, for duty in connection with the encampment of State troops at that place.

FIRST-LIEUT. J. D. GLENNAN, assistant surgeon, now at Fort McIntosh, Texas, will report to the commanding officer, 3d Cavalry, to accompany Troop I of the regiment to Fort Sill, Oklahoma Territory.

Leave of absence for one month is granted **CAPTAIN A. R. CHAPIN**, assistant surgeon, U. S. A.

CAPTAIN DANIEL M. APPEL, assistant surgeon, is relieved from further duty as attending surgeon for the officers and enlisted men on duty at the World's Columbian Exposition, and will report to the commanding general, Department of the Missouri, Chicago, Ill., for duty as attending surgeon and examiner of recruits in that city.

THE PAN-AMERICAN MEDICAL CONGRESS.

SECTION ON GYNECOLOGY AND ABDOMINAL SURGERY.

All members of the medical profession are cordially invited to attend the meetings of this Section to be held in Washington, September 5th, 6th, 7th and 8th.

The sessions promise to be exceptionally interesting, many valuable papers having been contributed. Those who may wish to read papers before this Section and who have not yet sent in their titles and skeleton abstracts are requested to do so at once.

W. W. POTTER, *Executive President.*
BROOKS H. WELLS, *English-Speaking Secretary,*
71 West 45th St., New York City.

SOCIETY NOTICE.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.— The third annual meeting of the Association will be held in Chicago, September 12th, 13th and 14th, at Apollo Hall. Members of the medical profession interested in Electro-Therapeutics are cordially invited to attend.

AUGUSTIN H. GOELET, M.D., *President.*
MARGARET A. CLEAVES, M.D., *Secretary.*

APPOINTMENTS.

RICHARD M. HODGES, M.D., has been appointed by the Governor, a member of the Massachusetts State Board of Lunacy and Charity.

JOHN C. FRASER, M.D., of East Weymouth, has been appointed medical examiner for the fourth Norfolk district.

EDWARD P. HURD, M.D., of Newburyport, has been appointed medical examiner for the third Essex district.

DR. H. P. WALCOTT, has been re-appointed Chairman of the Massachusetts State Board of Health.

RECENT DEATHS.

THOMAS ANTISELL, M.D., of Washington, died June 14th, aged seventy-five years. He served during the war as surgeon in charge of a general hospital in Washington. He was well known as a writer on chemical subjects.

CHARLES FELIX MICHEL PETER, M.D., professor of clinical medicine in the Faculty of Medicine, Paris, died June 15th, aged sixty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Surgical Clinic. By Nicholas Senn, M.D., Ph.D. Reprint. 1893.

Prospectus of the College of Pharmacy of New York, Session 1893–94.

Deformities of the Nasal Septum. By Wm. Scheppegrell, M.D. Reprint. 1893.

Recent Developments in Massage. By Douglas Graham, M.D. Second edition. Detroit: George S. Davis. 1893.

Notes on the Glycerol-Soda Process for Butter Analysis. By Henry Leffmann, M.D., and William Beam, M.D.

Shaking Palsy: A Clinical and Pathological Study, with the Reports of Two Autopsies. By Charles L. Dana, A.M., M.D. Reprint. 1893.

Transactions of the American Dermatological Association at its Sixteenth Annual Meeting held in New London, Conn., September, 1892.

Extraction of Steel from the Interior of the Eye with the Electro-Magnet. Congenital Ptosis with Synchronous Movements of the Affected Lid and Lower Jaw. By Alvin A. Hubbell, M.D. Reprints. 1892–93.

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Lecture.

LECTURES ON SURGERY.

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X.

SPECIAL FRACTURES.[1]

THE head of the Radius receives a good many blows. It is quite exposed. The outer condyle does not shield it very well; and it gets a rap frequently. Fracture of its neck is extremely rare. It can be diagnosticated, if present, by putting the arm in the flexed position. Get the thumb on the head of the radius, rotate and see whether the head rotates, or whether we get crepitus. If a fracture exists, it is to be treated on the internal angular splint; the arm to be kept quiet and prevented from supination or pronation for two or three weeks, and then passive motion is to be used.

The more common injuries of the head of the radius are of two kinds: one is partial dislocation of the head of the radius, which occurs in infants and very young children, and is ordinarily produced by the nurse's lifting the child by the wrist. It is a most pernicious practice. The immense weight below acts as a great leverage, pulls upon the radius, and presently the child drops its arm. It will not rotate; it will not pronate or supinate; and there is a slight projection of the radius at the joint. This injury is common in very young children; and it is thought to be a sprain, and frequently overlooked. It is not a fracture; it is not a thorough dislocation; it is a partial dislocation, with subsequent inflammation about the head of the radius.

The child should be etherized, and extension gone through with, and the head of the radius be rotated, and pushed back into place. Use fomentations a few days, and the child recovers.

The other injury is stellate fracture of the head of the radius. The patient must receive that injury in a very peculiar way. It may occur in connection, possibly, with Colles's fracture; at any rate it is probably produced by the same sort of violence. When a person breaks the radius about the wrist, he frequently does it while attempting to save himself from falling. Falling directly upon the palms, transmitting the force upwards, may drive the head of the radius also against the condyle, and cause the injury of stellate fracture of the articular surface. This is an obscure injury. The patient is lame, sore, he cannot rotate, supinate or pronate. There is an obscure rubbing sound more like tendon than bone. If we are sure that the head of the radius is in place, sure that it rotates under the finger, and can eliminate fracture of the shaft of the radius, and the symptoms continue, we may conclude we have a crack through the head of the radius. The only consequence about knowing whether it is so or not, is as to treatment and prognosis.

Rest will restore it; and restoration of the part will be quite complete, if we give it time. Put it in a sling; foment it and allow it to heal. Yet it will be slower of recovery than a simple sprain.

By far the most common injury of the radius is the break just above the lower epiphysis, usually at the junction of the shaft and the cancellous portion, or about three-fourths of an inch above the wrist. This occurs most frequently by falls upon the hand, and is very often an impacted fracture, unlike other features of the upper extremity. An impacted fracture — why it is so, you see by looking at these sections of the bone, showing where the shaft comes down and terminates in this expanded cancellous portion; and when the break occurs, the shaft is driven into the cancellous tissue. It is never driven in without displacement, generally antero-posterior, giving rise to marked deformity.

The other fracture of the lower end of the radius is a complete fracture; and when that occurs, the lower end of the bone rides considerably out of place and the hand goes with it. The peculiar prominence of the styloid process of the ulna, which is so marked in the thin arm, vanishes; and instead of that it reappears as a projection upon the ulna side. The natural projection of the styloid process is gone; and what appears to be styloid process is a partial dislocation of the ulna. The whole hand drops over to the radial side. The antero-posterior displacement is very marked indeed, giving that peculiar appearance of the two curves called the silver-spoon deformity.

The first thing to attract attention is the loss of prominence of the styloid process of the ulna. When you find that gone, you may be pretty sure that fracture of the radius has taken place. Next, you look underneath and find all the natural hollows of the wrist obliterated, and great protrusion where the wrist should be; and further back you find another antero-posterior projection. If a complete fracture, in a little while you find the ulna pushing out to the ulna side, the antero-posterior deformity being the most marked.

The first and most important question in recognizing this fracture; which by the way is overlooked about as often as any fracture in the body and usually considered, when overlooked, to be sprain of the wrist; the great point, I say, to be made out when you make the diagnosis that there is a fracture of the lower end of the radius, is whether it is an impacted fracture, or a complete fracture. The complete fracture, by a little force, is easily drawn into place, so that the natural outlines are at once restored. If an impacted fracture, you draw down and the deformity remains the same; and it will remain so always unless it is broken up by force. Why not leave it as it is? The deformity is not great. Is it not improper treatment to pull it apart thereby delaying union, it being known to be one of the worst possible practices in surgery to interfere with impaction of the neck of the thigh-bone? Unfortunately, if this fracture is left unreduced, subsequent stiffness, deformity, neuralgia of the hand are sure to result, because projection and pressure on the nerves and numerous flexor tendons here leads to so much displacement and effusion, that neuralgia of the ulnar nerve is extremely common, and great stiffness, and loss of power and strength in the use of the hand itself. There are then very important reasons why this impaction should be broken up. Now simple extension and counter-extension wont do it. You have got to exert great force, and it is better to give ether for it. The arm being seized, and the hand extended and bent towards the palm, you compress the fragments with the thumb, and force them down until you break up the impaction — are conscious of lateral motion and complete fracture; and then you pull the parts into place. Then you have converted a partial into a complete fracture; and the treatment for the complete fracture becomes the same for all that class of cases.

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The important point would seem to be in treating these fractures not to press the back of the wrist down in such a way, by splints, that we shall lose sight of this arch, which is so marked, under the radius. If we force this bone down so that it lies on a flat surface, we do not have a good result. This arch must be well supported; and in addition to that, the best position is one midway between pronation and supination, with the hand bent over a roller, leaving two joints of the thumb and all the joints of the fingers free to move.

Mr. Colles, of Dublin, gave his name to this fracture, and first accurately described some of its peculiarities. It almost always occurs from one-half to three-fourths of an inch above the carpal end of the radius, where the hard shaft of the bone meets the soft cancellous tissue. We said it was frequently impacted, though sometimes a complete fracture. I did not say at the last lecture what ought to be said, that this is one of the very difficult fractures to treat and get a perfect result. It is not quite so much so as the collar-bone, for the collar-bone almost always results in some deformity when the fracture is anywhere near the middle of the bone; but, on the other hand, although the deformity at the wrist from this fracture may not be so great, yet its consequences are much more disastrous. A lump upon the collar-bone, which will shorten the shoulder, is of little account except for the looks; on the other hand, the marked deformity from bad union of fracture of the radius is conspicuous, impairs the mobility of the flexor tendons, weakens the ligaments, and frequently gives rise to persistent neuralgic or rheumatic pains, we can hardly say which.

It seems to me the three essential points in treating are: first, diagnosis, for the fracture is frequently overlooked and mistaken for a sprain, with disastrous results. Next, if it is to be set, it must be set at the first visit, or it is never set afterwards. Successful reduction of the impaction and getting the bones into their proper position, or the fragments of bone into their proper position, is the second great *sine qua non.* And the third one is, that in order to prevent future stiffness of the tendons, confinement of the fingers and thumbs should never take place under the splint; but the splint should terminate at the head of the metacarpal bones, and the thumb and fingers should be left free.

Careful diagnosis, reducing impaction and deformity, subsequently leaving the fingers and thumb somewhat loose and free, seem to be the essential points in order to get a good result.

In spite of all this, and in spite of the most careful treatment, subsequent troubles occasionally arise; and they arise, if the bone has been properly set, in two ways. If the patient is old, and subsequently rheumatism of the fibrous tissues about the joint is set up, rheumatic adhesions and stiffness take place in the sheaths of the tendons; large effusions occur about the palmar surface of the wrist, and on the dorsum, which are not readily absorbed; and loss of perfect motion of the fingers and thumb frequently results in the old, although the fracture may do perfectly well. So we must give a guarded prognosis in the elderly person. The other cause of imperfect restoration is of an entirely different character, and exists usually in younger subjects, though sometimes in middle-aged subjects, but most frequently in females. It is due to the fact that the radio-ulnar ligaments which attach the radius to the ulna; also the lateral ligaments of the wrist-joint, which attach the bones of the forearm to the bones of the wrist, are ruptured, or stretched and sprained, at the time of the fracture, so that the hand is partially dislocated at the wrist; and they do not recover their firmness and contractility perfectly in every case. This is the class of cases in which the following result will be observed to take place. An ordinary Colles's fracture having occurred, diagnosis having been made, the bone thoroughly set, it comes out of the splints in good position and apparently with an excellent result. The patient is lost sight of, but returns in a few weeks, or months, with lateral displacement of the ulna, partial dislocation of the wrist, and looseness or limpness of the whole articulation. This is due to want of restoration of the ligamentous union. It does not recover its firmness and elasticity so quickly, if at all, as the bone; and this is not noticed, in some subjects, for the first few weeks. For this condition the surgeon should hardly be held responsible; neither should he be held responsible for the rheumatic condition, which sometimes follows. All that he is properly responsible for is to make a diagnosis; to be sure that he reduces the impaction and gets the bones into their proper position; and, subsequently, for a reasonably careful treatment. In the large majority of cases a very fair hand will result — a perfect one in some cases; an imperfect one, according to surgical authorities, in some cases, in spite of the best treatment.

Non-union is not to be dreaded. Union usually takes place, generally within three weeks, and at four weeks is well consolidated; so that we have not that danger to fear. We have rather the danger to fear of imperfectly matched fragments, subsequent distortion, stiffness of the fingers, subsequent relaxation of the ligaments.

We spoke of the fact that this was almost the only case in which it was proper to seize an impacted fracture and break it down and restore the fragments to place. The fact that union is almost sure to occur makes us the more bold to do this; and what we would not venture on in fracture of the neck of the thigh-bone, we may do with safety at the wrist.

The mistake that is made in the diagnosis in these cases is, almost always, that the patient has sustained nothing but a sprain. If seen before great swelling has come on, the peculiar arch-shape of the wrist may make us suspect fracture. Suppose, after all the skill we can expend, the diagnosis is uncertain; it is the wisest plan to treat as if a fracture certainly existed. Draw the parts into place; put them on a splint, and keep them confined a reasonable length of time. Many patients will not submit to this; and many patients do not seek the aid of the doctor. If, however, we have a chance to treat the case, and cannot make a sure diagnosis, we had better treat it as if it were a fracture for two or three weeks; being sure that the treatment of a sprain, in that way, will not be impeded; while, if there is a fracture, we shall get a good result for the patient.

On account of the lateral deformity in the complete fracture of the radius, surgeons were led to employ splints which should press the ulna back into place; and M. Nélaton invented one called the pistol-shaped splint. In that way, by drawing the hand over to the ulna side, the ulna is forced back perfectly into place.

Unfortunately this entails other troubles, which make it a bad mode of treatment to adopt. The great strain put upon the lateral ligament, on the radial side, results usually in a weak wrist, and imperfect restoration of the hand back to its normal position, when the splint is taken off. This splint is now seldom used.

I spoke of the arch under the radius, that it should be well supported by a splint running up under it. No splint is so comfortable as that sometimes called Bolles's splint, or Smith's splint; splints which have been invented here, and used in our hospital a good deal. I would also name Carr's splint, as fulfilling the same indications. Some people go so far as to treat this fracture without splints, saying if the hand is put firmly in this position with adhesive plaster, a very good result will occur. It is not sufficiently sure as a method of treatment to render it safe to pursue it. You must bear in mind, in all these cases of doubtful result, that you not only want to do the best thing for your patient, but have, to a reasonable degree, to guard yourself against any future charge of having failed to do this or that, which usage has rendered the proper thing to do in the large majority of cases; consequently, unless some very distinct advantage can be shown by a new method of treatment, it is better to use that which has been approved by long experience. The patient is in no way so comfortable as upon a splint, even with a sprain; and in fracture, it seems to be doubly necessary.

The splint must not extend below the head of the metacarpal bones; and the dorsal splint should terminate over the projection of the os magnum; and then fingers and thumb will be left freely to play. If there is much distortion of the ulna, a little pad may be applied, by which the ulna may be pushed in; but that is not always necessary, though it is sometimes. The splint should be seen and watched as to tightness within twelve to twenty-four hours; probably taken off once or twice in the first three or four days, in order to loosen and tighten, as swelling increases or diminishes. The dorsal splint should be lifted off at the end of a week; bandages undone; hand allowed to rest on the roller splint; and the patient should be encouraged to manipulate a little, to see if everything is loose and free. Again, at the end of another week; and at the end of three weeks, it is customary to take off the dorsal splint altogether, leaving the hand upon the roller, and the under splint only, but bandaged. At the end of four weeks it is safe to take off all the splints, and allow the hand to lie in a sling. You will find one curious thing in regard to all patients, that while they resist and suffer at first from the irksomeness of splints, after two or three weeks they become so dependent upon them, that they are very reluctant to have them taken away. Now comes the time when the surgeon must take the initiative; and if it is a fracture and has united, he must encourage the patient to take off the splint and use the arm. All splints and bandages necessarily atrophy the muscles, and stiffen up all the joints which are connected. The joints become immovable; and this is, in itself, an evil to be got rid of, as soon as union has taken place. This is the case in any fracture, as well as in this fracture of the radius.

Union almost always occurs. Faulty union may occur; and sometimes the question comes up whether it is wisest to re-fracture the part in order to get a better result. If there is much deformity, if there is persistent neuralgia, is it safe to re-fracture the part? After a longer period than five weeks it is extremely difficult to break it over again. Although occasionally it is done under ether, yet frequently the bones give way in a new place; and you have a badly united fracture and a new fracture, instead of the original injury. In children, we may, in four or five weeks, very well re-fracture and re-set the arm; in older people we have to be more cautious; and after a month or so has elapsed, it is wiser to say to the patient, "You probably have got a better result than you would get by re-fracture." State to him the possibilities.

After the splints are off and the sling is used, the patient must be encouraged to use the hand and arm, and have the motions of supination and pronation, as well as those of flexion and extension made; and it is in these cases, subsequently, that massage and electricity are of great use.

This is a troublesome fracture. It is one of the most common fractures we have to treat. Every one should know how to take care of it. The essentials are; first, diagnosis; next, reducing the impaction, getting the part back to its normal look in every way; and, third, not confining the fingers and thumb in a splint, so that resulting good use of them may occur.

Fracture of the Ulna. — Occasionally the ulna is broken, somewhere about its middle, or anywhere along its shaft. It may be broken by a direct blow, because it is a superficial bone as the tibia is. It is directly under the skin. It is a transverse fracture usually. There is very little displacement, and what displacement there is usually consists in bowing towards the ulnar side, inwards.

It is easily reduced, and very easily treated, and usually unites well. It is not worth while to take up much time with fracture of the shaft of the ulna.

Fracture of the Coronoid Process. — Fracture of the coronoid process is so rare that some surgeons have doubted it; and very few specimens of it exist in any museum. It is to be borne in mind, that in the original growth of the bone the coronoid process is not an epiphysis, and has no natural tendency to separate.

A very peculiar force must be exerted to break it, buried, as it is, in the muscles of the arm; and when it is broken, the upper fragment will be lifted up towards the humerus by the attachment of the brachialis anticus muscle. The joint is unlocked at once. Dislocation backwards takes place. Then the question is, Is it a simple dislocation, or is there any bone broken which normally holds the joint in place? Of course, we go through all the manœuvres of reducing dislocation and getting it into position, and see if it will stay there. If the coronoid process is broken off, it will not usually stay in place.

The treatment is simple. It is the internal angular splint with a firm pad in the bend of the elbow to compress the coronoid process down into place. If we are satisfied that this fracture exists, and if that treatment is adopted, you must see, that treatment should be carried on a good while, to secure consolidation of this little piece of bone against the efforts of the brachialis anticus to draw it out of its place in every movement of the arm. The splint should be kept on five or six weeks. Neither would it do at a very early stage to use flexion; but the accident is so rare that we need not consider it very much.

On the other hand, the olecranon is an epiphysis; it separates easily in childhood, and breaks off easily in the adult, from a fall occurring exactly in the right direction upon the very tip of the elbow. It breaks transversely. To the olecranon process is attached the tendon of the long extensor of the arm, the triceps; and its natural tendency is to pull this fragment up on the back of the humerus. This displacement, however, does not usually occur at first, on the receipt of the fracture; and it is a point on which I wish to insist, because fracture of the olecranon is occasionally overlooked, when it has occurred, during the first few hours, from the fact that great displacement is expected and is not found. In many of these cases you will find, that when you first see the patient, all you can detect across the back of the elbow is a chink in which you can barely put the thumb nail; but by seizing the little fragment and moving the arm, you may make sure of crepitus. If you see it after twenty-four hours, you will frequently find a separation, so that you can lay the little finger between the fragment and the bone itself. The fragment has ridden up quite a distance on the back of the humerus; but this does not take place, at once, on the receipt of the injury.

It is broken across transversely, lies in place. The patient keeps the arm still to resist pain. Slowly the triceps contracts; and if treatment is not administered, after a little while it draws it out of place, and then you can detect it.

In its future slowness to unite, and its imperfect union, the olecranon may be compared to the patella. In many cases nothing but ligamentous union occurs; in some few cases bony union. Ligamentous union is extremely strong and useful, however; and the patient gets along very well, though there may be a slight separation of the fragments.

It is obvious that in order to restore the bone to its normal place the arm must be in the extended position. The moment you begin to bend, it separates and rides up upon the humerus.

Now to get the most perfect result in the way of union, the old treatment, which is still used by many, was to treat it on a perfectly straight inside splint; the patient carrying his arm about extended; the splint going down to the palm and up to the axilla, just as we would splint a broken thigh. It is rather disastrous in its effects. The parts are held in an extremely awkward position. It is a long while before we can venture to get flexion of the elbow; and it is doubtful if the patient gets as good a result as he does in another way.

Among the many wise observations of Hippocrates, there is described his mode of treating fracture of the olecranon, which is practically the mode we are coming back to. He said that there was ligamentous union; that if we kept the arm too straight and stiff it could not be used very well afterwards. The typical way would appear to be to put on a splint at a very obtuse angle, with a screw to enable you to move it a little every few days. In addition to this, a good deal can be gained in holding the fragment in place by a figure-of-8 bandage of adhesive plaster, just as you hold the fragments of the knee-pan in place, by the figure-of-8 bandage.

Pad in the bend of the elbow, figure-of-8 bandage, slightly obtuse angle, and an adjustable splint, seem to give the best results in fracture of the olecranon. This is especially true in the old person; and most of these fractures happen in the old, because in them the bone is brittle. They are apt to fall on the very point of the elbow; and in them, six weeks' confinement in an extended position entails disastrous anchylosis; whereas the partially obtuse angle position, with slight mobility, produces a better result; and even if they have ligamentous union only, they will have, on the whole, a more useful arm.

This fracture, however treated, has got to be a slow affair; eight weeks probably. It will not unite firmly until a considerable length of time has elapsed. So much the stronger reason to have the ability to give a slight motion to the joint, from day to day, after treatment has progressed for two or three weeks.

Fracture of the Radius and Ulna. — Fracture of both bones of the forearm is subject to a variety of disasters. We spoke the other day of the fact that the radius was necessarily twisted out of place by its supinators and pronators according to the site of the fracture, and it was very difficult to get these two fragments to lie in an exact line; and in fracture of both bones of the forearm it is practically found that the ulna is held in position, unites promptly, acts as a splint to the other bone; and the other bone, if it unites, usually unites with a distortion, and later than the ulna does. Then another trouble is liable to arise, which is, if the fractures happen to be about the same line, the radial fracture may be drawn pretty nearly into contact with the ulna fracture, and in the effort of nature to repair the broken bones she may build a bridge across from radius to ulna, and if that occurs, the radius is tied to the ulna, and the entire power of supination and pronation is forever lost. In what position of the forearm do they lie best apart in order to avoid this contingency? We see at a glance that pronation would be a very fatal position, that extreme supination also is a very bad position; that midway between the two, the bones are most thoroughly apart; therefore, in treating fractures of the forearm mid-pronation is practically the best thing. This, fortunately, is the position which the patient always assumes, if left alone.

Suppose we have this fracture, try to get it into place, push the arm into this position, and hold it by two antero-posterior splints. If those splints are narrow, the result of the bandaging will be to crowd the bones in together; consequently, in treating fractures of the forearm, where both bones are broken, it is desirable that the splint should be a good deal wider than the outer lines of the bones themselves. The whole arm should be flattened down between two broad boards, and held in a semipronated position. Splints have been contrived — perfectly useless, however — and various padding has been contrived, with the idea of pressing apart the bones, preventing them from pushing together, by a ridge on one of the splints, or a pad put between the splints, in a peculiar way. This does not succeed. It cannot press down the two layers of muscles. It only leads to some distress, irritation or sloughing from pressure on the parts themselves, and does not practically do much good.

Union of the ulna is prompt. Union of the radius is slower. Once the ulna joins, it acts as a splint.

There is one great danger of this fracture which has not been alluded to yet, and it applies in a certain degree to all fractures, that is the chance of stopping the circulation and causing sloughing and gangrene from too close bandaging of the parts. It is especially liable to occur in this case, because we have here two bones united by firm interosseus membrane. There are two layers of flexor muscles, in and among which are veins, arteries and nerves. Compression may be very easily applied, with sufficient force to restrain the circulation to a disastrous degree, by bandaging the forearm tightly, because in so doing you press these tender parts upon an immovable posterior wall which cannot retreat and is not elastic; that wall being made up of the two bones and interosseus membrane; and cases of gangrene have occurred under this treatment in this fracture. Before, perhaps, the mischief can be recognized, mortification of the hand or tips of the fingers occurs — an extremely disastrous result for the patient, and for the doctor who happens to treat the case. Here, again, we see the safety of broad splints. You cannot very well compress the arm disastrously with broad splints unless you use extreme force. And here, again, let me speak of another point, and that is in reference to the way in which bandages should be applied where splints are required. It is this, a roller bandage should never be applied next to the injured or broken limb, but padding and sheet-wadding and splints should be applied first, and the bandage applied outside. This may seem idle to speak of. It is, however, occasionally done with the most disastrous results, because there is nothing to prevent this roller from constricting the swelling parts, and sloughing is liable to take place; whereas, if the splints are put on first and the bandage afterwards, the chances of obstructing the circulation are much less.

Non-union is to be dreaded here. Non-union of both bones is not very rare. It gives rise, when it occurs, to a useless arm. There is a false joint, and but little can be done with the arm. When this occurs you have two alternatives. One is a serious operation — cutting down upon the ends of the bones, scraping back the periosteum, sawing off the rounded parts, shortening up the forearm, fastening the two ends of the bones together, and treating it as a compound fracture. You may frequently get a good result in this way. It is a somewhat risky mode of procedure. If the patient does not wish to do this, if he has not the constitution to stand it or is too old, you have another resource, — to keep the arm permanently in splints. The splint is the internal angular splint with a flexible elbow, padded with chamois. The patient puts it on and off, bathes the arm, keeps it healthy. That does very well. The other is the only way to make the parts unite.

Fracture of the Carpus. — Fractures of the carpus are rare unless they are compound. The treatment is to push back the broken bones into place; bandage lightly on a splint; look out for effusion. These are usually compound fractures. The bones of the carpus are rarely broken except by some crushing violence, which has broken through the tissues.

Fracture of the Metacarpal Bones. — Fractures of the metacarpal bones, on the other hand, are not uncommon, and the most frequent place for them is near the knuckle, near the distal end of the metacarpal bone. Occasionally the metacarpal bone of the fifth finger on the ulna side is broken at the middle from a blow. Once in a while in consequence of a severe blow this large second bone is broken; but the usual fractures are down near the distal end, towards the phalanges.

The best way to examine the two hands is to shut them and look at the knuckles. We see, often, a knuckle missing where there is a fracture. We say, at first, that there is a dislocation, that the finger has gone backwards into the palm; on the other hand, it is a fracture, and the head of the metacarpal bone and finger have dropped together. Put your finger underneath and press up, and it comes up into place and the line is restored; and by manipulation we can find crepitus, and be sure of the fracture.

This indicates the line of treatment to be pursued in fractures near these distal ends. Support must be from below. Putting the hand over a ball is good treatment. A large splint that holds the whole palm is also good treatment.

Union is slow. If you discontinue treatment too soon the bone sags, and subsequent deformity results.

Fractures of the Fingers. — Fractures of the fingers, phalanges, are, of course, easily recognized and easily treated. The point to be borne in mind is that there is liable to be deformity in two directions, as the finger recovers. We all recognize and try to treat, and usually succeed in treating well, the antero-posterior deformity of broken finger; but the lateral deformity is to be looked out for as much; and you must have the finger set straight in both directions, to get a good result. If you use little wooden splints to support the phalanges, you need four. If you use tin splints, they should be such as to support it below and on the sides. You must look to it that the finger is got perfectly straight, and not allowed to deviate to one side as the treatment goes on.

The finger bones unite quickly; and non-union is not to be feared. The only thing to be feared is, when the fracture is very near the joint, that we may have some resulting stiffness, and not have the perfect use of the flexor or extensor tendon.

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Original Articles.

THE VITAL STATISTICS OF AN APACHE INDIAN COMMUNITY.

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THESE statistics are of a community of nearly pure-blooded Indians living in abnormal environment.

As accurate vital statistics of American Indians are rare, if not unknown, this, and the fact that they show the effect of changed environment upon a nomadic people, give these statistics their particular interest. The lack of other accurate statistics of Indian communities gives no normal averages for purposes of comparison, making it impossible to determine the exact amount of divergence from usual rates which changed environment has caused in this community.

The extent of the effect produced must, therefore, remain inferential; but that there has been a decided departure from the normal will be plainly seen from the statistics themselves. These statistics, which are for a period of five years, from July 1, 1887, to June 20, 1892, were compiled by the writer from the official records of the military post at Mount Vernon Barracks, Ala., while on duty there during the summer of 1892, and are those of the Apache Indians now kept there under military supervision and control. This Indian community numbers about four hundred, men, women and children (see Table I), and is composed of various Apache bands, among them being the noted Geronimo and his followers, of Arizona fame.

The Apaches have lived for generations in Arizona and the adjacent parts of Old and New Mexico, becoming thereby constitutionally adapted to the dry, rarefied air and clear, diathermic atmosphere of the elevated regions of the southwestern part of the United States.

They are essentially nomadic and warlike in habit, and deserving of their appellation "Ishmaelites of the West"; they have not only been notoriously hostile to the whites but to alien Indian tribes as well.

This hostility to, and non-affiliation with aliens, has kept these Indians remarkably free from an admixture of foreign blood; so much so, that in this community of about four hundred, there are but five persons in whom white blood can be traced. In 1886, after numerous outbreaks and hostilities and their capture by United States troops, the Indians now forming this community were removed from Arizona and taken to Fort Marion and Fort Pickens, Fla. They remained there but a few months, and, in April, 1887, they were removed to Mount Vernon Barracks, where they now are.

Their condition during their stay in Florida was extremely bad. Brought in from the fatigues of the war-path and the destitution of their hunted camps, they were taken from the clear, dry and rarefied air of Arizona to the humid atmosphere and debilitating climate of the Florida sea-coast. They were supplied with rations and clothing, but were crowded into damp and improperly ventilated quarters.

Here the first effects of such radical change of environment began to manifest themselves, and clearly pointed to the necessity of an attempt to better their condition. Their removal to Mount Vernon Barracks effected a temporary improvement; as on their arrival there, they were placed in tents while a village of log cabins for their occupancy was being built. This village was completed before the end of the year; but the cabins were of the worst type of construction, and the site was unsanitary, being in a low, damp hollow so shaded by trees that free circulation of air and penetration of sunlight were greatly interfered with — a serious matter where, as in Southern Alabama, the humidity of the atmosphere is great and the rain-fall excessive.

They lived in this village for four years, during which time its condition and the health of the Indians became so bad that finally it was found necessary to build another; and in 1891, a much better village of framed houses was built on a hill near by, where the disadvantages of the old site did not obtain. In May of the same year, 46 of the able-bodied men were enlisted as privates in the United States Army, forming Company I, Twelfth Infantry, which was increased by the arrival of 32 Tonto Apaches from Arizona, some two months later. Captain W. W. Wotherspoon, U. S. A., who had been placed in charge of the Indians shortly before, and by whose efforts the building of the new village was undertaken, was given command of the company, and ably instituted reforms in the general and sanitary condition of the community. A commodious barrack was built for the Indian enlisted men; and a hospital with male and female wards was completed the same year. By these means the condition of the community was greatly improved.

In fact, as regards its sanitary condition during the five years for which statistics are given, there are two distinct periods.

During the first period of about four years, they lived under the unsanitary conditions of bad location, wretched habitation and accumulating filth. Their village was on a damp and overshaded soil, and their cabins were of the worst construction. They were built of rough logs, with mud or rough board floors, and with windows too small to admit sufficient sunlight. The roofs leaked, and the crevices between the logs were imperfectly closed. They, therefore, afforded but poor protection against the inclemency of the weather, and were damp, gloomy, dirty, and in every way unsanitary. The Indians being unused to living in permanent dwellings, allowed dirt to accumulate in and about them, as they were accustomed to do with their temporary "wickyups" in Arizona. The latter however, being frail structures of poles and brush-wood lasted but a short time, and were generally abandoned before dirt had accumulated to an unsanitary extent, while the cabins, being permanent, gradually accumulated filth until they became veritable incubators of disease.

The Indians themselves were in no better condition than their habitations. They received regular and abundant issues of rations and clothing; but as none of them were regularly employed at paid labor, they were without money, and, although forbidden, they sold all they could of both food and clothing to obtain it. The money so received they spent to no advantage to themselves.

Captivity, unaccustomed restraint and enforced idleness operated to prevent the mental stimulus of personal endeavor and combined with their unsanitary surroundings to produce a condition of mental and physical demoralization. As a result, the death-rate (see Table I) gradually increased until for the year ending June 30, 1891, it reached the extremely high rate of 142 per 1,000 of living.

During the last period of one year, beginning July 1, 1891, the condition of the community was improved in all ways.

Their new village being on the crest of a hill has plenty of sunlight and free circulation of air. The houses are of fairly good construction, are well lighted by good-sized windows, are plainly built, and are easily kept clean.

The enlistment of many of the men, and the employment of most of the others at paid labor about the village and garrison, removed the demoralizing effect of enforced idleness and gave the Indians a mental stimulus the effects of which can hardly be overrated.

They are now well clothed and well supplied with the necessities of life, while cleanliness of person and habitation is enforced by rigid military inspections and method. The Indian company, in neatness and in the well-kept condition of its barrack, compares favorably with any white company in the United States Army.

The improved condition of the community during the last year, over that of the preceding four years, is shown by the following extract from a report of an inspection made by Colonel Charles Page, Medical Director of the Department of the East, in which he says: "The Indian camp and hospital have been much improved and the quarters with surroundings occupied by the prisoners are as clean as those occupied by the soldiers. The transformation from squalor to neat and tidy condition of quarters and grounds is remarkable."

This bettered condition produced a marked effect upon the mortality of the community and the death-rate fell (see Table I) from 142.58 per 1,000, of the preceding year, to 109.75. The number of deaths from all causes except tuberculosis fell (see Table II) from 35 to 18; and had the deaths from tuberculosis decreased in like ratio, the death-rate would have been lowered remarkably. Instead of this, the deaths from tuberculosis decidedly increased in number — the germs of the disease having been so thoroughly disseminated during the preceding years.

This general description of the condition of these Indians during the five years will make clear the circumstances under which the following statistics were produced:

[illegible] for the same years.

Year.	[illegible] corrected for [illegible]				Deaths.				Births.			Death-rate per 1,000.	Birth-rate per 1,000.
	[illegible]	[illegible]	[illegible]	[illegible]	Men.	Women.	Children.	Total.	Males.	Females.	Total.		
1887-88	[illegible]	170	118	[illegible]	1	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1888-89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7	[illegible]	19	7	[illegible]	17	[illegible]	43.60
1889-90	[illegible]	176	124	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34	109.69	86.73
1890-91	[illegible]	165	107	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	[illegible]	18	142.58	48.51
[illegible]	[illegible]	169	119	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	109.75	75.61
[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

Mean death-rate for the five years	93.12
Mean birth-rate for the five years	60.19
[illegible]	[illegible]
Excess of female births over male	[illegible]

* [illegible] full ration from the government, while those under that age receive [illegible]

The high birth- and death-rates at once attract attention. The mean birth-rate of 60.1 is nearly double that of civilized communities. The general average in European countries for 1882 was 34.1 per 1,000 of population, the lowest rate being 24.8, and the highest 44.6, while the lowest rate of this community during the five years was 43.6, and the highest 86.7.

The mean number of women over twelve years of age, present during the five years, was 171; and as there were 117 births, the number of births during that time was equal to 68.4 per cent. of the mean number of women present, including those past and those who had not reached the menstrual period.

During the year of lowest birth-rate there was one birth to every ten women; and during the year of highest rate, one woman in every five gave birth to a child.

There are two main causes for the high birth-rate: great freedom of union of the sexes, and the practice of polygamy.

By great freedom of union of the sexes, unchastity is not meant, but, as most of the conditions which with a civilized people lead to sexual restraint, do not obtain with these Indians, early union of the sexes occurs, and the ties so formed are easily broken that other connections may be made. Infidelity is rare during their marital alliances, but these alliances are generally broken at the caprice of either party. The wife is usually obtained by purchase; but curiously, the right of the parents, and particularly of the mother, to a daughter so disposed of, does not end with her marriage. The husband only retains her during their approval; and payments of money or other valuables are extorted from him under threat of taking her from him. Curiously, also, the right of the mother seems not to be questioned by the married daughter; and she, obediently and apparently willingly, returns to her parents when, deeming that insufficient tribute is paid, they order her to do so.

Polygamy is practised; and as the women approach the menopause, the men form new ties with younger women. It will be seen that the family is not developed as with civilized people, but that sexual relations are generally formed on the basis of sexual activity.

As shown by Table I, the women are about double the men in number; but the practice of polygamy and of the men taking younger wives when the older are past the child-bearing period, gives as great opportunity for all the women to bear children as there would be in a community where there was an equal number of each sex. In consequence of the excess of women, it must be borne in mind, when comparing the birth-rate of this community with that of a civilized people, that an increase of men would not increase the births, but would decrease the birth-rate.

At the same time, consideration must be given the probability that this condition is a normal one for this and other uncivilized people — the greater exposure of the men from warfare and other conditions of life, probably tending constantly to keep their number reduced below that of the women.

It may be well to state, that it does not follow, because of their practice of polygamy and the ease with which their marriages are made and broken, that these Indians are immoral. Their standard of morals is different from that of a people of higher civilization. It is in keeping with their conditions of life and stage of race development; and judged by it, they have always been considered virtuous. They are quite free from venereal diseases. During the five years there were treated but two cases of syphilis, one case of urethral stricture, one of gleet, and thirteen cases of gonorrhœa. As before stated, there are but five individuals of mixed (Indian and white) blood in the community.

It is claimed by persons having long acquaintance with these Apaches, that they have always practised infanticide of all infants of mixed blood; but as they have never well affiliated with the whites, it is probable that occasion for such practice has been infrequent. During the five years of close observation at Mount Vernon Barracks no instance of such practice has been observed; and but one half-breed child has been born.

What effect, if any, their changed environment has had upon the birth-rate of these people, is difficult of determination.

Their enforced idleness during the first four years, so different from the activity of their former nomadic life, may have had a tendency to increase the rate; but, on the other hand, it would seem that a decreased rate would be produced by the high death-rate and the increased amount of sickness which would necessarily accompany it.

How high the death-rate was will be seen from Table I, which shows a minimum rate of 48.9, a maximum of 142.5, and a mean of 93.1 per 1,000 of living; so that in spite of the very high birth-rate, the deaths exceeded the births by 63.

The following table shows the causes of death which produced this high rate, and the relative frequency of each cause:

Table II. — *Showing the causes of death, the number of deaths from each cause during each year and during the five years, and the percentage of deaths from each cause to the total number of deaths.*

Causes of death.	Number of deaths each year.					Total, 5 yrs.	Per cent.
	'87-88	'88-89	'89-90	'90-91	'91-92		
Tuberculosis	11	4	18	18	27	78	43.33
[illegible]	..	.	..	1	..	1	.55
Chronic rheumatism		.	.	.	2	2	1.11
General debility, adults	1	1	..	..	..	2	1.11
Old age	2	4	..	2	..	8	4.44
Malnutrition, children	..	1	3	5	1	10	5.55
Acute diarrhœa	..	3	7	13	3	26	14.44
Chronic diarrhœa	1	1	5	4	2	13	7.22
Obstruction of bowels		1	1	..	..	2	1.11
Peritonitis	1	–	..	3	1	5	2.77
Stomatitis		–	..	1	1	2	1.11
Asphyxia of new born	1	..	1	..	..	2	1.11
Croup		.	..	..	2	2	1.11
Capillary bronchitis	..	.	..	1	1	2	1.11
Chronic pleurisy	1	.	..	..	..	1	.55
Pneumonia	1	1	3	–	..	5	2.77
Asthma	.		..	..	1	1	.55
Acute nephritis	..	1	..	..	..	1	.55
Chronic nephritis	1	..	..	1	..	2	1.11
Convulsions	..	1	1	..	..	2	1.11
Erysipelas	..	1	..	..	–	1	.55
Poisoned, Ind'n medicine	..	..	2	2	1	5	2.77
Suicide		.	..	..	1	1	.55
Unknown, infant	..	..	2	2	2	6	3.33
Totals	20	19	43	53	45	180	100.00

This table shows at once that tuberculosis, diarrhœal diseases, and malnutrition of children were the great causes of death.

Of the total of 180 deaths, 78, 43⅓ per cent. were caused by tuberculosis alone; while malnutrition of children and diarrhœal diseases together caused 49 deaths, or 27⅕ per cent. leaving but 53 deaths, or 29⅖ per cent. for all other diseases. It is plain from these figures, that the high death-rate of these Indians is due, primarily, to the prevalence of tuberculosis among them, and secondarily, to diseases of the alimentary organs. The reasons for the prominence of intestinal disease as a cause of death are readily ascertained. Most of the deaths from diarrhœal diseases were of children, as will be seen from the following, which gives the number of adults and of children dying of these diseases:

	Infants.	Adults.	Total.
Acute diarrhœa	21	5	26
Chronic diarrhœa	11	2	13
Totals	32	7	39

So that of the 39 deaths from diarrhœal diseases, the large number of 32, or 82 per cent., were of children. These 32 deaths added to the 10 deaths of children from malnutrition account for 42 of the 180 deaths.

The infant mortality of civilized people is notoriously high; and it is naturally to be expected that with these people the rate would be still higher, as the great causes of infant mortality, namely, ignorance in regard to the proper care and feeding of children, would exist in greater degree. Improper care exists at all times; improper feeding generally does not begin until the time for weaning approaches. It is rare to find an Indian mother who cannot nurse her child, for in the past, in those cases where the child could not be nursed, it died, so, gradually, through the law of the survival of the fittest, a race was produced whose women can nurse their children — a condition general with uncivilized people — the resources of civilization being necessary to produce the common occurrence of deficient mammary function by saving the lives of non-nursing mothers and so transmitting the tendency. But, when weaning occurs, the Indian children pass directly to the diet of the adults; and as the diet range of the Indians is limited, and their knowledge of cooking very imperfect, children with weak digestion are almost sure to contract acute bowel complaints, which, aggravated by continued improper feeding, generally prove fatal.

The improper feeding of children was undoubtedly as common with these Indians previous to their removal from Arizona as it has been since, but other disease-predisposing factors have been added by their change to their present place of abode, which have helped to produce a high infant mortality. In the hot and moist air of summer, which prevails in Southern Alabama during seven months of the year, putrefactive changes quickly occur; the improperly kept and poorly cooked food of the Indians is apt to take such change, and is, consequently, often given to the children when in anything but proper condition. From the elevation of Arizona and New Mexico, the air there is dry, and putrefactive changes are much less apt to occur. There the Indians habitually preserve their meat by drying in the sun and air; but in Southern Alabama meat so treated (and the Indians from habit still attempt to so cure it) almost invariably spoils, and is frequently eaten by them and fed to the children after it has begun to decompose.

To improper feeding is added improper clothing. During the first four years the clothing of the children was insufficient to protect them against the ill effects of temperature changes; and this, together with great dampness of the ground from frequent rains, had great effect in producing, or predisposing to, intestinal catarrhs.

It is probable, therefore, that the change of climate from Arizona to Southern Alabama, together with the unsanitary conditions of the first four years, produced a decided increase of infant mortality from intestinal diseases. But, while the death-rate from these diseases was very high, that from tuberculosis was still higher; and the effect of changed environment in producing a high death-rate from this disease was most marked. How fatal tuberculosis was, and that it was the main cause of death, is shown by Table II and by the following table or tabulated comparisons:

Table III. — [illegible] per 1,000 living.

	Men.	Women.	Children.	Total.
Mean annual population during the four years	[illegible]	[illegible]	[illegible]	[illegible]
Deaths from tuberculosis	[illegible]	[illegible]	[illegible]	[illegible]
Deaths, all other causes	[illegible]	[illegible]	[illegible]	[illegible]
Deaths, all causes	[illegible]	[illegible]	[illegible]	[illegible]
Death-rate from tuberculosis	[illegible]	[illegible]	46.1	40.35
Death-rate, all other causes	14.17	27.03	116.8	[illegible]
Death-rate, all causes	[illegible]	[illegible]	162.9	[illegible]

Death-rate England and Wales, all causes, 1881-90 . . 19.1
Death-rate England and Wales, tuberculosis, 1881-90 . . [illegible]

The death-rate of the men, women and children from tuberculosis is remarkably similar for so small a number of observations, and shows how uniformly fatal the disease has been. While the mean death-rate of the world from tuberculosis is not far from 2 per 1,000 of living, the average death-rate of this community from it has been 40.35. This rate shows the virulency and epidemic quality of this disease in this community; for the rate exceeds that of cholera in the worst infected districts during an epidemic, and is more than four times greater than was the rate from small-pox in London during the years from 1771 to 1781, when the latter disease was at its height.

The high death-rate of the children, from causes other than tuberculosis (116-8), is accounted for by the prevalence of diarrhœal and malnutrition diseases, before referred to.

The death-rate of adults, from causes other than tuberculosis, 14.17 for the men, and 27.03 for the women, is not high, being a mean of only a little over 20 per 1,000 of living, which is about that of the world at large; so that, so far as the adults are concerned, had their mortality-rate from tuberculosis been the usual one of 2 per 1,000, their rate, while high for adults, would have been but 22 per 1,000 of living.

It is generally accepted, however, that the death-rate of Indians from tuberculosis is always greatly increased whenever they are confined to given localities and their usual habits of free life interfered with. Nor can such increased death-rate be considered strange, for, in their natural state, an unconscious adaptation of themselves to their environment has taken place for them by which a normal balance of life is obtained.

The Apaches have lived for generations in the clear, dry, rarefied air of the Rocky Mountain uplands. Their habitations are of the frailest kind, open to the drying air and penetrating sunlight of those regions. From their nomadic habits, they move frequently from place to place, leaving behind them the dirt accumulated by living, and abandoning their frail and soiled habitations for new ones. When one of their number dies, the habitation in which the death occurs is burned, and the belongings of the deceased person are also burned or buried. In this way, by abandonment and burning — natural disinfection methods — communicable diseases, of which tuberculosis is one, were in large part avoided.

Only through long generations of gradual adaptation [illegible] themselves to the living requirements of permanent habitation. With these Indians the experiment was made — unintentional as an experiment, it is true — of taking them suddenly from nomadic life and thrusting them unprepared by previous natural training into a life of quiescence and permanent habitation. The result is shown by the extremely high death-rate, particularly from tuberculosis. The relative frequency with which this disease in its different forms caused death among the men, women, and children is given in the following table:

Forms of Tuberculosis.	Deaths from each form			Totals.	Per cent.
	Men.	Women.	Children.		
Pulmonary . . .	19	27	11	57	[illegible]
Enteric	1	2	11	14	17.9
Meningeal . . .			6	6	7.6
Acute	1			1	1.2
Totals . . .	21	29	28	78	

The frequency of pulmonary tuberculosis as a cause of death with adults, and of enteric and meningeal forms with children, is noticeable, and in keeping with general observations upon this disease.

The great frequency in children of mesenteric tuberculosis has been frequently observed before, and the ingestion of infected milk has been considered as the main cause. This view seems to be supported by these statistics, as the prevalence of tuberculosis among the mothers would, in this way, produce many cases other than pulmonary even were the children not infected when born.

The great predominance of pulmonary tuberculosis among the adults is also in keeping with general observations — the infection with them generally occurring by way of the lungs.

It is not so plain why deaths from this disease have been proportionately so much greater among the men of this community than among the women, unless it is that the somewhat less active life of the women has given them a certain degree of immunity. It is more probable, however, that this is not the case, and that no such difference would be found if the numbers from which the statistics are derived were larger. In fact, the whole question of immunity to tuberculosis, and of the different susceptibility of different races to this disease, is not yet settled. It is well known that certain races, as the nomads of Persia, Syria and Armenia, and the inhabitants of certain localities, as those of Iceland and the islands of Faroe, Shetland and the Hebrides, are almost, if not entirely free from the disease; while among negroes in this country, and Indians, when under restraint and in contact with civilization, it is particularly prevalent. It is also known that under changed conditions the same race exhibits an apparently varying susceptibility to the disease, as is shown by its appearance among the nomadic races above referred to as soon as they abandon their wandering life.

Also, it is known to vary according to differences in locality or climate; its spread being favored by vitiated and damp air and a moist soil, and retarded by purity and dryness of the air, and a large amount of sunshine. In view of these facts, it seems probable that tuberculosis acts as does any other infection disease, being most prevalent where the conditions favoring its spread most obtain; and that the presence of these conditions, more than racial or individual susceptibility, are the important factors favoring its prevalence. This view is supported by the death-rate from this disease of the community under consideration.

For some months previous to their arrival at Mount Vernon Barracks, and during the first four years of their stay there, all the conditions most favorable to the spread of the disease existed; and the deaths from it ran as follows: First year 11, second year 4, third year 18, fourth year 18, fifth year 27.

During the fifth year, though the condition of the Indians was greatly improved, the number of deaths from this disease was greater than before, as the disease had gained such a foothold during the preceding four years that no decrease could be looked for in so short a time. The disease is so slow in development and in running its course, that when unusually prevalent in a community, no sudden return to ordinary rates can be expected, but only a slow decline made possible by most thorough sanitary measures.

Whether the system of disinfection and enforced cleanliness now being carried out in this community together with its bettered condition, will be effective in staying the ravages from this disease remains to be seen, for the unfavorable conditions of changed climate and altered modes of life still remain.

It is to be hoped, however, that this most insidious of diseases can be controlled by the means taken and notwithstanding that the past five years have shown a steady increase of the disease, due to the presence of all the conditions most favorable to its spread, that the following years, through the absence of many of these conditions and the use of suppression methods, may show a steady decline.

Should such decline occur, it will be of interest in that it will show the adaptation of the community to its new environment, and the effectiveness of modern sanitary methods, when enforced.

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THE NEED OF AGREEMENT ON THE LIMITS OF THE ABDOMINAL REGIONS, AND A PROPOSITION FOR A NEW METHOD OF DIVISION.[1]

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The surface of the abdomen, as viewed from the front, is very extensive, and presents in the normal condition few features which are at once obvious and constant. Indeed, the only one which is invariable is the navel. The depression called scrobiculus cordis is often lacking; the exact line of the groin must sometimes be searched for with care; the capillary embellishment of the pubes is absent in childhood; the linea alba, the lineæ semilunaris, and the sloping margin of the thorax are frequently obscured by corpulence. The umbilicus alone, while varying in size and depth, is always present. The need, therefore, of some artificial markings to aid in the localization of parts or objects upon, within, or behind the parietes must have been felt by the early students of anatomy. Just at what period any such drawing of lines of latitude and longitude as at present obtains was begun, I am unable to declare, my opportunities for investigating this matter having been too limited to determine the point. It is sufficient for my purpose, as a practical anatomist, to know that such a method has been in vogue for more than a century, and that its universal adoption is evidence of the recognition of its value. Nobody now would wish to be deprived of the terms of convenience which this plan has fastened upon our nomenclature; but doubtless everybody who studies the subject would be glad to have these terms made so definite that there would be no room for doubt as to the exact meaning and the limits of application of each of them. It must be acknowledged, though the confession is not creditable to the scientific pretensions of anatomy, that there is a grievous lack of uniformity in the method of drawing the lines by which the anterior abdominal wall is mapped out into regions.

Having been for a long time annoyed on this account, I have had the curiosity to make a careful examination of the statements of the writers of the works most easily accessible to me, who make any mention of the matter. Though it is quite possible that search through a larger collection would reveal a still greater number of variations on the simple theme, the dozen which I am about to quote abundantly sustain the thought which I have made the title of this essay; and I have, therefore, forborne to make so unnecessary, and hence unwarrantable, a tax upon your patience as more extensive quotation would involve. One does not have to eat a whole cheese to get its flavor.

Before proceeding to a detailed presentation of the facts, it is well to place clearly before us the purpose in view in the creation of these artificial areas. This is so well stated in Quain and Wilson (Pancoast's edition, 1842) that I quote their words:

"The larger or upper compartment of the abdomen is subjected to what may be called a technical subdivision into regions; not that there are any septa or partitions between them, but because of the many important parts which are contained in it, and which require to be minutely described.

"It must be obvious that the very purpose and intent of marking out these lines show that they are not confined to the surface on which they are drawn. They are on the contrary supposed to be projected into so many planes, forming partitions, which divide the cavity into compartments, each containing a certain portion of the abdominal viscera."

Although not every author as distinctly expresses this idea, it is obvious that the conception of projected planes is entertained by all, for otherwise there would be little point in the artificial subdivision of the surface. As Bell says (fourth American from fourth English edition, New York, 1822): "To give greater accuracy to the description of the seat of the viscera, or, perhaps, rather more strictly to connect the knowledge of the internal parts with the outward marks of the belly," is the object of the arbitrary drawing of imaginary lines. All authors speak of certain organs as being situated in specific regions, which, of course, could be true only on the supposition of the extension of the lines straight backward to the posterior wall of the abdomen.

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[1] Read before the Association of American Anatomists at Princeton, N. J., December, 1892.

Last spring, during my annual course of lectures in the Medical Department, Bowdoin College, I told the class of my purpose to read this paper, for which the materials were then substantially collected, at the meeting of the Association. I had never seen or heard of a proposition looking towards agreement on the boundaries of the abdominal regions, and my first knowledge of any such was received after I had forwarded the title of this essay to our Secretary, who immediately kindly informed me of the intention of one of our colleagues to write on the same subject, and sent me a copy of the paper of Professor Anderson. I have, however, not read a line of the latter, in order to be absolutely free from the imputation of plagiarism.

The discrepancy in the drawing of the dividing lines between the various regions is very marked, and almost every possible variation, consistent with the general plan which actuates every method, is presented for our adoption. The greater part of the authors seem to make an effort at exactitude, though with a degree of success which is not altogether admirable; while others content themselves with the establishment of the vaguest boundaries. A good example of the latter class is Fyfe (1800), whose description is worthy of extended quotation:

"It (the abdomen) is distinguished into three Divisions or Regions, termed Upper, Middle, and Under Regions; each of which is subdivided into three others.

"The Upper Region begins opposite to the Cartilage Ensiformis, at a small depression called Scrobiculus Cordis, or Pit of the Stomach, and extends to about a hand-breadth from the Umbilicus or Navel.

"The middle of this Region is termed Epigastrium, or upper part of the Belly, and the two lateral parts Hypochondria, from their lying under the Cartilages of the False Ribs.

"The Middle Region occupies an equal distance above and below the Umbilicus. The middle part of it is called the Umbilical, and its lateral parts the Lumbar Regions or Loins.

"The Under Region begins where the middle one terminates, or at a line drawn between the superior anterior Spinous Processes of the Ossa Ilii, and forms in the middle the Hypogastrium, or bottom of the Belly, and at the sides, the Iliac Regions."

In this description there is not the slightest approach to precision; and the only semblance of such approximation occurs in the implication that the level of the anterior superior supinous processes is a hand's breadth below the navel — an idea which needs no comment, whether a "hand" (four inches) is meant, or the actual breadth of hand of the special person who conducts the measurement. The most that we get out of this account is this: the front surface of the belly is to be considered as mapped out into nine regions of indefinite boundaries and widely varying and undetermined areas.

As a type of the class who attempt accuracy, we may take Quain (1882 edition), who draws the two horizontal lines respectively "at the level of the lowest part of the wall of the thorax," and "between the highest points of the iliac crests"; and the lines dividing these vertically "upwards on each side from the middle of Poupart's ligament."

Between these extremes of vagueness and precision are numerous grades of indistinctness. The upper horizontal line is drawn "opposite the cartilages of the ninth rib," "parallel with the cartilages of the ninth ribs," "over the ninth costal cartilages," "between the cartilages of the tenth ribs," between "the most prominent point of the cartilages of the ribs," "from the inferior margins of the ribs," "across the base of the thorax." The lower horizontal line is drawn "on a level with the most prominent part of the crest of the hip-bone," "the crista of the ilium," and "between the iliac crests."

The lines dividing the zones are made to pass "from the cartilage of the eighth rib to the centre of Poupart's ligament," "from the spines of the pubis to the cartilages of the eighth ribs," and "from the middle of the groin vertically."

At the first glance I may seem to be in error in speaking of the most of these rules as being vague; but my reason for considering them so will be seen when I call attention to the facts that each of the cartilages mentioned presents so extensive a margin as to permit a variation of five centimetres, more or less, for the choice of the student in selecting a starting-point for his measurement; that the anterior margins of the ribs, as distinguished from their cartilages, are practically impossible of ascertainment through their natural coverings; that the most prominent point of the costal cartilages is not the same in different people that there is large room for difference of opinion as to what is the most prominent part of the crest of the ilium; and that "groin" is a word of elastic application.

Some authors give exact directions, but differ vastly among themselves.

An influence which augments the confusion of the student's mind in these premises is exerted by the dictionaries. One says that the epigastrium is "the abdominal wall in front of the stomach," and another, "that part of the abdomen immediately over the stomach and below the diaphragm." One gives the following extraordinary definition of the iliac region: "The side of the abdomen between the ribs and the hips"; and of the umbilical, "That portion of the abdomen two or three inches above, below and on each side of the umbilicus"; and so on, to the great weariness of the spirit.

This dire confusion must suggest the necessity of agreement among anatomical teachers concerning the limits of the regions, which long usage and general consent admit are important. Consequently, I venture to suggest the adoption by this Association, which includes so large a number of the prominent specialists in anatomy in this country, of a system by which these regions may be described uniformly in all of our schools. The influence of our action would be felt abroad, especially if we were to request conference with similar societies in other lands.

The plan which I offer and defend may not meet with your approval; but I trust that some plan will be adopted, as I believe that the credit of modern anatomy requires a radical reform of our present slovenly method.

I propose that the dividing lines be drawn as follows:

The upper horizontal at the level of the lowest point of the inferior margin of the tenth costal cartilage.

The lower horizontal at the level of the anterior superior spinous process of the ilium.

The lines intersecting these from the middle of Poupart's ligament on each side perpendicularly.

In support of this drawing of the upper horizontal, I submit these advantages:

The ease with which the lower margin of the tenth costal cartilage is located.

The perfect definiteness of the directions, which is not attained by mentioning any particular cartilage, without specifying a point upon it.

The anatomical propriety of allowing as large an area as this permits for the upper zone, thus giving a nearer approach to uniformity of width in the three zones.

The fact that this drawing is recommended by some of the ablest authors, such as Bell, Quain and Leidy.

For the lower horizontal line I claim these meritorious points:

Absolute definiteness.

The facility with which the anterior superior spinous process of the ilium is found.

The approximation to uniformity of width of the three zones, which this method ensures.

The localizing of the navel more nearly at the vertical centre of the umbilical region, than is accomplished by having the line pass below the highest points of the iliac crests, as advised by Gray, Quain, Leidy, and others, who thus bring the umbilicus into the lowest part of the region to which it gives the name, and often on the line separating this from the region immediately below.

The fact that this drawing has the support of prominent teachers, like Bell, Owen, Macalister and McClellan.

My arguments for the intersecting lines proposed are as follows:

The middle of Poupart's ligament is easily determined.

The selection of this point is better than that of the bony prominence to which its outer end is attached (as practised by Bell and Cloquet), because we thus cause this line to divide the lowest zone into three regions, as in the case with the upper and middle; and make it divide the other zones much more equally. Only a little room is left for the hypochondriac and lumbar regions if the line is drawn perpendicularly from the anterior superior iliac spine.

The choice of this point is also better than that of the osseous process to which the inner end of the ligament is fastened, as advocated by Macalister and McClellan, because, if the line be drawn perpendicularly, the lateral boundaries of the central region of each zone become too close; and, if it be drawn to the cartilage of the eighth rib, as recommended by these writers, it is less definite, because no point on the cartilage is specified, and it is harder to carry abstractly in mind an account of its obliquity. It is worthy of remark in this connection that the difficulty, upon which I have insisted in the matter of the directions which merely mentions a costal cartilage, is strikingly shown in the picture which accompanies the description of the abdominal regions in that splendid and most recent American addition to our anatomical libraries, wherein we find the text and the drawing in disagreement. If a mistake is so readily made by so painstaking an author, who is also his own artist, in a picture which delineates the cartilages in outline, how difficult it must be for an ordinary practitioner, who is not an expert in anatomy, to avoid such errors in the case of a patient whose thoracic framework is "padded round with flesh and fat."

The perpendicularity of the line is an obvious advantage: first, because it is so simple and, therefore, easy to remember; and, second, because it makes rectangles with the lines which it crosses, and thus contributes to uniformity of outline and comfort of memory. It is true that a line thus drawn will not in all cases strike the same point on the thorax — it will be further away from the linea alba in women than in men, on account of the relatively wider pelvis and narrower chest in the female sex. But no rule in this matter will give absolute results, and the one proposed is as free from disadvantages as any other can be.

There is only one point to remember — the middle of Poupart's ligament. Those who name a point on the chest wall for the other end of the line add an element of difficulty to the task of the student, and can be by no means positive that the resulting line will be vertical. It is a method taught by distinguished anatomists, as Quain and Owen; and others, like Ellis and Gray, make the middle of Poupart's ligament one of the two points between which they draw each of these subdividing lines.

It will be observed that each of the component parts of this plan has the sanction of some illustrious authority; but their association does not occur, as far as I know, in the method of any writer.

In this system only three anatomical points require to be remembered — the lowest point of the tenth costal cartilage, the anterior superior iliac spine, and the middle of Poupart's ligament. I think that it will compare favorably with any other method in respect to theoretical simplicity, accuracy and uniformity of results, and practical applicability.

In this connection it is fitting that something be said about the names which are applied to the different regions.

The central region of the upper zone and the region on each side of it are called respectively epigastric and hypochondriac, by universal usage, except when the cognate terms, epigastrium and hypochondrium, are used. The central area in the middle zone is always named umbilical, and its lateral associates lumbar, by an almost equally unvarying custom. In the lowest zone the central region is generally designated hypogastric or the hypogastrium; but certain authors prefer pubic.

The sanction of ancient custom weighs with me in determining my choice of hypogastric, particularly as it seems to me so desirable to have the word pubic reserved for that area which, in the adult, is covered with hair, and includes not only the lower part of the hypogastric region, but also the bodies of the pubic bones and the structures in front of them.

Iliac is most frequently the adjective applied to the side areas in the lowest zone, though inguinal is preferred by some writers. My choice is the former, inasmuch as a part of the region is not groin, and all of it is neighboring to the hip-bone. Inguinal may well be applied to the long, obliquely situated area, which is located partly above and partly below Poupart's ligament — is, as it were, threaded upon the ligament — and is as much a portion of the thigh as of the abdomen.

In conclusion, a few words may appropriately be spoken in answer to an anticipated objection to this plea for uniformity and accuracy in the delimitation of the abdominal regions.

It has thus far been assumed that the mapping out of regions by imaginary lines is desirable; but I have heard it said that this is useless, because the contents of the designated regions are not the same in all cases.

Considerable variation is admitted; but it is probably not greater than obtains in many other cases in which the desirability of artificial aids to precision is universally admitted. In anatomy we do not look for mathematical accuracy and absolute uniformity, but only for approximations. Our rules are based upon the usual, not upon the invariable. And there seems to me to be no good reason why some uniform method of division of the abdominal surface may not be agreed upon by the anatomical world, which shall be of essential service in the direction of simplification and precision in the description of the relation of the viscera to the parietes and to each other.

DELIMITATION OF ABDOMINAL REGIONS.

[illegible]

[illegible]

Professor Anderson's communication to the Anatomical Society of Great Britain, in May [illegible], pleading for uniformity in the delimitations of the regions of the abdomen, draws attention to a matter which is of considerable importance to practical anatomists.

As he clearly shows, there is a complete lack of uniformity among anatomists, both as to the boundaries and contents of the region thus artificially outlined. The starting points from which the lines are drawn are likely to vary in position, and no less than fourteen different subdivisions have been made.

Professor Anderson rightly characterizes this confusion as "chaos."

The question is: Can we simplify this subject and agree upon a subdivision acceptable to all?

I take it that our purpose, as teachers, is to adapt anatomy to the daily needs of the practitioner. Now, as a matter of fact, it is my observation that in anatomy, as applied to daily practice, these artificial subdivisions are seldom used.

In treating abdominal diseases or injuries, the practitioner will, in most cases, refer to the umbilicus and the median line of the abdomen as starting points, and designate the lesion with reference to these landmarks. References need only be made to tumors of the pylorus, aneurisms of the abdominal aorta, McBurney's tender point, the incisions for abdominal section, etc. This being the fact, we, as anatomists, should seek to make our artificial divisions of the abdomen conform to the needs of the practitioner as demonstrated by his daily routine.

It must be apparent to all, that the first thing to do is to simplify the division of this region as to number. Nine subdivisions are too many, and this refinement of subdivisions is not needed by those for whose benefit it was presumably made.

Secondly, the boundaries of the subdivisions must be fixed points or, at least, such as are not subject to any great variation in position. Lastly, the subdivisions should be made to conform to the daily needs of the practitioner.

Ophthalmologists have for many years divided the surface of the cornea into quadrants, and lesions in this locality are referred to the upper or lower, outer or inner quadrant, as the case may be, and such reference is perfectly understood by all. So far as I have observed, this plan works well. I see no reason why some such simple subdivision of the abdomen cannot be made.

A line from the symphysis pubis to the ensiform appendix would answer for a vertical, while the horizontal plane could be made at the umbilicus.

The boundaries of these spaces can be outlined with almost equal exactness on the dorsum, where the vertebral column marks the vertical plane, while the horizontal would fall between the third and fourth lumbar vertebræ.

This would give four regions whose boundaries would be reasonably well fixed and not subject to any marked variation. They could be designated as upper and lower, right and left quadrants; and this plan would be an improvement on the present methods of subdivision.

It might be objected to such a division that the vertical plane would bisect the stomach, bladder and uterus, and throw part of these organs into one quadrant and part into another. As to the stomach, the objection lies equally against the present subdivision. As to the bladder and uterus, they are really more pelvic than abdominal viscera, and I think the objection would hardly have much weight from a practical standpoint.

The British Society appointed a committee to consider this matter, with a view to arriving at a uniform plan of delimitation of the regions of the abdomen.

I think we might properly co-operate with this committee, as the question is one equally important to us and to them.

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Medical Progress.

RECENT PROGRESS IN MEDICAL CHEMISTRY.

[illegible]

FORMATION OF GLYCOGEN FROM DIFFERENT SUGARS.

C. Voit, Otto, Abbott, Lusk, and F. Voit[1] have investigated the formation of glycogen and the changes which sugars undergo in the alimentary canal. From the examination of previous and the present researches on glycogen formation in the liver, it is believed that glycogen may originate in two ways; first, it is a temporary store of carbohydrate food, and secondly, it may be the result of proteid metabolism. The present research was performed on animals (rabbits, hens) in which the hepatic glycogen had been reduced to a minimum by starvation, and relates chiefly to the former of the two sources of glycogen just alluded to. Large doses of different sugars were given. Dextrose lævulose, cane sugar, and maltose increased the hepatic glycogen; lactose and galactose did not, or only very slightly.

Cane sugar and maltose are inverted in the alimentary canal. Lævulose, lactose, and galactose are absorbed as such, and after large doses pass as such into the urine. The liver appears unable to form glycogen from sugars which, like lactose and galactose, do not pass into the condition of either dextrose or lævulose. In fact, these appear to be the only forms of sugar which, when present in the blood, lead to the storage of glycogen in the liver. When subcutaneously injected, the hepatic glycogen rises in amount. No other form of sugar behaves in this way. Regarding lævulose, the liver cells must either form glycogen from it directly or after previously changing it into dextrose.

BEHAVIOR OF LACTOSE AND GALACTOSE IN DIABETICS.

F. Voit[2] finds that lactose causes an increase of the sugar in diabetes. The patient upon whom the experiment was made was taking strict diet, and the amount of sugar in the urine was reduced to a low ebb. The following explanation is given by the author: — Before the sugar was given, the small amount of diabetic sugar in the urine must have originated from proteid

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[illegible]

[1] [illegible] xx [illegible]

[2] [illegible]

metabolism. Lactose appears in the urine more readily than any other form of sugar, not because it is burnt in the organism with greater difficulty, but as it is a form of sugar from which it is not possible for the liver to make glycogen, its "assimilation limit" is low, and so it passes unused into the urine. In fact, in diabetics it appears to be more readily burnt in the body than dextrose, and takes the place of some of the dextrose originating from proteid metabolism. Hence, when lactose is given, a large quantity of dextrose remains unburnt, and passes as such into the urine.

The same results were obtained in experiments with galactose.[3]

PHYSIOLOGICAL ACTION AND CHEMICAL PROPERTIES OF PENTOSES.

In view of the dieting of diabetic patients, W. Ebstein[4] has undertaken to investigate the physiological action of various forms of sugar. The present research relates to the two penta-glucoses or pentoses, xylose and arabinose.

Xylose, dissolved in water or coffee, or in the solid state mixed with the food, was given to various people. It appears that xylose is not assimilated, even when taken in very small quantity, and it can be recognized in the urine within an hour or two after the administration of 0.5 grammes. This is true both for healthy and diabetic persons. One received 25 grammes of xylose; in the next twenty-four hours 9.5 grammes were found in the urine, and the excretion continued for the two following days. Arabinose gave practically the same results. These substances have apparently little or no food value.

Salkowski's[5] experiments on rabbits show that arabinose is absorbed from the alimentary tract very rapidly and completely. It is, however, very slowly oxidized in the system. About one-fifth of the amount ingested is eliminated unaltered with the urine. A small amount can be detected in the blood, a larger amount in the muscular tissue. There is no evidence that glycogen can be directly manufactured from the absorbed pentose. The urine may at times give the characteristic tests for pentoses, as a result of the use of fruits, such as pears, that contain pentosanes, the mother substances of pentoses. This condition must not be confounded with diabetes.

Pentoses reduce Fehling's solution, Nylander's reagent, and form osazones with phenylhydrazine. They also give the following characteristic reactions: (1) By distillation with hydrochloric acid they yield furfuraldehyde. (2) A solution mixed with an equal volume of concentrated hydrochloric acid and then with a solution of phloroglucinol in equal parts of hydrochloric acid and water, and warmed, gives a beautiful red color, which gives a dark absorption band to the right of the D line. Salkowski states that the red color appears first at the surface, and gradually extends down into the liquid; and that the red coloring matter is dissolved on shaking with amyl alcohol. 0.5 per cent. of arabinose can be very easily detected by this test; 0.1 per cent. is recognized only with difficulty.

The amount of pentoses in the urine can be estimated by Fehling's solution, after any glucose that may be present has been removed by fermentation with yeast. 1 milligramme xylose equals 1.9 milligrammes copper; 1 milligramme arabinose equals 1.95 milligrammes copper.

TESTS FOR SUGAR IN THE URINE.

G. Hoppe-Seyler[6] has proposed a new test for sugar in the urine, depending upon the formation of indigo-blue when orthonitrophenylpropiolic acid is boiled with alkalies and reducing substances like dextrose. The test is made by boiling ten drops of the urine for fifteen seconds with 5 c. c. of the reagent (0.5 gramme of the acid and one gramme sodium hydrate in 100 c. c. distilled water). The test serves to detect sugar in urines containing 0.5 per cent. of this substance.

Normal urines do not give a blue color with this reagent, but a green color may be obtained. Albumen does not interfere with the reaction, unless there is more than two per cent. present, when it must be removed by precipitation with lead acetate. The reagent failed to give good quantitative results in the author's experiments.

Gerrard[7] states that when to a volume of Fehling's solution there is added just sufficient potassium cyanide to discharge the blue color, and the liquid is mixed with a second equal volume of Fehling's solution, grape sugar will produce no precipitate in the boiling mixture, but its gradual addition causes a steady disappearance of the blue color, and at the sharp end change the glucose value will be found approximately equal to half that of ordinary Fehling's solution. The author's explanation is, that the double potassium and copper cyanide formed in the first instance, being a solvent of the cuprous oxide, prevents its precipitation when formed by the action of the glucose on the second volume of the Fehling, in which reduction is presumed to take place as in the ordinary method. In practice, he keeps three solutions in separate bottles, as follows: (1) Copper sulphate, 69.3 grammes, water to 500 c. c. (2) Rochelle salt, 175 grammes; sodium hydrate, 76.56 grammes, water to 500 c. c. (3) Potassium cyanide, 33 grammes (or a sufficiency), water to 500 c. c. For testing, 5 c. c. of each solution is mixed with 50 c. c. of water, and to this liquid, boiling in an open vessel, the grape sugar is added until the blue color disappears. In case any precipitate is formed, the cyanide solution must be strengthened.

LOCALIZATION OF MERCURY.

Ullmann[8] finds that the distribution of mercury in the organism always follows the same laws whatever the dose or the form of administration. The largest amount of mercury is found in the kidneys, liver and spleen, in the order given. As regards the digestive tract, the stomach contains very small, but weighable quantities, whilst more is found in the small intestine, and still more in the large intestine. Small weighable quantities are found in the heart and skeletal muscles, and, in individual cases, also in the lungs. The brain, salivary glands, abdominal gland, thyroid gland, bile and bone substance contain unweighable traces, or, with small doses, not even a trace of mercury.

DETECTION OF ATROPINE.

L. Fabris[9] reports the following case. A patient at a hospital in Padua, who had for some time been treated by daily injections of six milligrammes of strychnine nitrate, died a few hours after receiving an accidental injection of three milligrammes of normal atropine sulphate, exhibiting acute symptoms of atropine poisoning. At the post-mortem, the presence of bilateral mydriasis, and of congestion of the meninges and of the cerebellum became evident. On examining the viscera by the Stas-Otto method, clear indications of the presence of an alkaloid were obtained, but on applying the special reactions for strychnine and atropine, the results were negative. To test the possibility of these alkaloids obscuring each other's reactions, mixtures of three per cent. solutions (the strength of the injections) of strychnine nitrate, and atropine sulphate were tested with sulphuric acid and potassium dichromate, and by Vitali's reaction, with the following results. A mixture of equal parts of the solutions gave the strychnine reaction very clearly, but the atropine reaction not at all; a mixture of one of strychnine with three of atropine gave the strychnine reaction, but not that of atropine; a mixture of one of strychnine with four of atropine gave indistinct reactions for both alkaloids; a mixture of one of strychnine to five of atropine gave a momentary atropine reaction; the characteristic violet coloration is, however, immediately superseded by a reddish tint. Vitali's reaction was not clearly obtained until, at least, nine parts of the atropine solution were added to one of strychnine. It further appeared that a solution of strychnine too dilute to give the characteristic reactions of that alkaloid may effectually obscure the atropine reaction; thus one drop of the three per cent. strychnine solution diluted with ten drops of water scarcely yields the strychnine reaction; on adding four drops of atropine solution to this, no reaction for atropine could be obtained.

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[3] Journal of the Chemical Society, 1893, page 177, from Zeit. Biol., xxix, 14.

[4] Loc. cit., 1892, page 1506.

[5] Centralblatt f. d. med. Wissenschft., 1892, page 593.

[6] Zeitschrift f. physiologische Chemie, xvii, p. 83.

[7] Journal of the Chemical Society, 1893, p. 249.

[8] Loc. cit., 1893, p. 217.

[9] Loc. cit., 1892, p. 1,534; from Gazetta, 22, i, 347-350.

A piece of meat injected with 0.05 c. c. of a three per cent. solution of each of the alkaloids, and extracted by the Stas-Otto process, yielded a barely sensible strychnine reaction, and no trace of atropine. Finally, on injecting a mixture of three parts of the three per cent. strychnine solution and one part of the atropine solution into a frog, paralysis of the lower limbs and a great augmentation of the nervous sensibility ensued: on introducing the mixture into the eye of a dog, distinct mydriasis was observed in fifteen minutes. It thus appears that in cases of poisoning by atropine, the physiological evidence may be conclusive when the chemical tests yield doubtful results.

THE ACONITE ALKALOIDS.

W. R. Dunstan[10] in conjunction with E. F. Harrison has continued the research to which reference was made in a previous report.[11] In the present paper, they describe the properties of isaconitine (the alkaloid to which the name *napelline* was assigned provisionally), and the process for separating it from aconitine, and also from another amorphous alkaloid closely resembling it, which has been provisionally named homonapelline.

The investigation of the physiological action of the alkaloids of *A. Napellus* has been undertaken by Professor Cash, of Aberdeen. His investigation is not yet completed, but preliminary results, obtained by a comparison of the physiological action of aconitine and isaconitine, show that the behavior of the two alkaloids, although in some respects similar, is generally distinct. Moreover, whilst aconitine is a most violent poison, even in excessively minute doses, isaconitine is only toxic to small animals when exhibited in comparatively large doses.

ELIMINATION OF CARBONIC OXIDE.

L. De Saint-Martin's[12] experiments show that the elimination of carbonic oxide is at first very rapid, but quickly diminishes, becoming very slight at the end of the third hour. From 5 to 6 per cent. of the absorbed carbonic oxide is, however, never eliminated as such, but undergoes alteration in the living tissues, and is probably converted into carbonic anhydride.

TOXIC ACTION OF EXPIRED AIR.

Experiments of Haldane and Smith[13] fail to support Brown-Séquard's hypothesis that expired air contains a special organic poison. The authors draw the following conclusions from experiments on human beings:

(1) The immediate danger from breathing air highly vitiated by respiration arises entirely from the excess of carbonic anhydride and deficiency of oxygen, and not from any special poison. Experiments on animals, consisting of injecting the products of respiration into them caused no more ill-effect than the injection of distilled water.

(2) Excess of carbonic acid rather than deficiency of oxygen is the more potent cause of hyperpnœa and headache.

HYDROCYANIC ACID.

Since hydrocyanic acid is oxidized to oxamide by hydrogen peroxide, experiments were made by P. Krohl[14] to see if the latter substance could be employed as an antidote in the case of hydrocyanic acid poisoning. These experiments were successful, and the acid, in larger quantity than the fatal dose, was administered to dogs and cats, and its effects stayed by means of hydrogen peroxide. The experiment could be made daily for weeks together without permanently injuring the animal. Moreover, the acid could not be detected in the urine after application of hydrogen peroxide, whereas it is present in ordinary cases of hydrocyanic acid poisoning.

POISONING BY HYDROGEN SULPHIDE.

Lehmann[15] has established by an elaborate investigation, that the inhalation of 0.07 per cent. to 0.08 per cent. hydrogen sulphide in the atmosphere produces in man, in the course of a few hours, very dangerous symptoms; the presence of 0.1 to 0.15 per cent. causing death quite rapidly. 0.015 per cent. in the air can be inhaled for some hours without detriment; but more than 0.02 per cent. produces injurious effects. The system cannot be made to tolerate this gas; on the contrary, it becomes more sensitive upon repeated inhalations. Uschinsky[16] could not find any evidence that the gas acts as a hypnotic, as Schulz states.

Cholera Precautions in Hamburg. — In order to take all precautions against the introduction of cholera to the city, the Hamburg authorities have ordered that only Russian emigrants who have cabin tickets to America will be allowed entry to their territory.

[illegible] Journal, August 11, 1892, p. 138.

[illegible]

Zeitschrift [illegible]

Reports of Societies.

THE ASSOCIATION OF AMERICAN ANATOMISTS.

Meeting at Princeton, N. J., December 27–29, 1892, D. S. Lamb, M.D., Secretary.

Dr. F. H. Gerrish read a paper on

THE NEED OF AGREEMENT ON THE LIMITS OF THE ABDOMINAL REGIONS, AND A PROPOSITION FOR A NEW METHOD OF DIVISION.[1]

Dr. E. A. Balloch read a paper on

DELIMITATION OF ABDOMINAL REGIONS.[2]

Dr. Thomas Dwight, of the Harvard Medical School, said that he was inclined to agree with Dr. Balloch rather than with Dr. Gerrish. While he thought the latter's method of dividing the abdomen the best that he knew, it was by no means perfect. The lowest part of the cartilage of the tenth rib cannot in all cases be certainly recognized, nor is it always in the same place. The position of the lines must be influenced by sexual and individual peculiarities, to say nothing of the effect of various degrees of distention of the abdomen. It is needless to say that the regions of the abdomen have no morphological significance, and in surgical practice the situation of a tumor is usually described by means of measurements from fixed points.

Dr. Dwight is in the habit of teaching that it is convenient to retain the customary names of these regions, but that it should be recognized that they are to be used vaguely, and that it is useless to pretend to define by sharp lines where one region ends and another begins.[3]

Dr. Geo. A. Piersol, University of Pennsylvania: While appreciating fully the force of Dr. Dwight's remarks, yet the fact remains that the nine conventional divisions will continue to find place in our text-books. It is, therefore, very desirable that uniformity in the arbitrary boundaries adopted should prevail. The lines advocated by Dr. Gerrish offer the advantage of being largely determined by accessible skeletal points. Almost identical boundaries have been adopted by Joessel, who, however, assumes as the vertical lines perpendiculars erected from the ilio-pectineal eminences.

Dr. Carl Heitzmann, New York City: It seems to me that we will never come to an agreement in an open meeting, the more so, since the views held by German anatomists have entirely been neglected. Some take the nipples as starting points, joining the spinæ ilii anteriores. The best division seems to me that adopted by Hyrtl and others. He starts from the sterno-clavicular articulations, sending lines to the spinæ ilii anteriores. Then he joins transversely the lowest borders of the tenth ribs and both spinæ ilii; the region outlined by the lower borders of the ribs and the processus zyphoideus on the one hand, and the transverse line between the tenth ribs, he terms *epigastrium*; the region between the two transverse lines (tenth ribs and both spinæ ilii), he terms *mesogastrium;* and that between the transverse line uniting both spinæ and the upper border of the iliac bones, *hypogastrium.* The mesogastrium is subdivided by a horizontal line starting from the navel into a regio supra-umbilicalis and a regio infra-umbilicalis; the hypogastrium, by a vertical line into the mesial regio pubis and the lateral regio inguinalis. In my judgment, the papers should be referred to the Committee on Nomenclature, which, in due time, may report to the Association for final decision.

Dr. D. S. Lamb, Army Medical Museum, Washington: I am inclined to favor the proposition of Dr. Balloch, to divide the abdomen into quadrants by a median sagittal plane and a horizontal umbilical plane. I do not see how any careful person can make a mistake concerning these planes. They are uniform for all subjects; assuming, as I do, that the position of the umbilicus, for all clinical purposes, is sufficiently uniform in its relations to neighboring parts. Besides the horizontal plane it corresponds very closely to the uppermost level of the iliac crest, the body of the fourth lumbar vertebræ and the aortic bifurcation. The only important viscera below this plane are the intestines and pelvic organs. The position of a point stated to be three inches to the right of the median line and three inches above the umbilical line in an adult, lying on his back, would be understood by every one, and be easily marked on a chart or on the body of another subject. If anatomists would state, for instance, that the pylorus is found on the average to be so far above and so far to the right of these respective lines, there would be no doubt in the mind of the reader as to the precise place indicated.

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AMERICAN MEDICAL ASSOCIATION.

Forty-Fourth Annual Meeting, Milwaukee, Wis., June 6–9, 1893.

(Concluded from Vol. cxviii, No. 26, page 650.)

THURSDAY, JUNE 8TH (CONTINUED).

The next thing in order was the Report of the Nominating Committee, which was read by the Chairman, **Dr. Truax**, of New York. The committee recommended for

President, James F. Hibberd, of Richmond, Ind. First Vice-President, John A. Wyeth, of New York. Second Vice-President, I. N. Love, of St. Louis, Mo. Fourth Vice-President, U. O. B. Wingate, of Milwaukee, Wis. Treasurer, Richard J. Dunglison, of Philadelphia, Pa. Secretary, William B. Atkinson, of Philadelphia, Pa. Assistant Secretary, H. B. Ellis, San Francisco, Cal. Librarian, Geo. W. Webster, of Chicago, Ill. Editor Association Journal, J. C. Culbertson, Chicago, Ill. Trustees, J. B. Hamilton, Chicago; E. E. Montgomery, Philadelphia, Pa.; E. Fletcher Ingals, Chicago; L. S. McMurtry, of Louisville, Ky. Members of Judicial Council, X. C. Scott, Ohio; G. W. Stone, United States Marine-Hospital Service; J. T. Jelks, Hot Springs, Ark.; J. H. Murphy, of Minnesota; J. McFadden Gaston, Atlanta, Ga.; T. A. Foster, Maine; I. N. Quimby, New Jersey. Address on Medicine, C. H. Hughes, St. Louis, Mo. Address on Surgery, Ernest LaPlace, Philadelphia, Pa. Address on State Medicine, Geo. H. Rohe, Catonsville, Md. Place of meeting, San Francisco, Cal. Chairman of Committee of Arrangements, R. H. Plummer.

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[1] See page 1 of the Journal.

[2] See page 13 of the Journal.

[3] For the views of some English anatomists as well as for a further statement of Dr. Dwight's opinion, the reader is referred to the last Report on Anatomy in the Journal of May 25, 1893.

The nominating committee also recommended that the Secretary be paid an annual salary of $500.

It was moved and seconded that the report be adopted.

Dr. Rohé moved to substitute Baltimore as the next place of meeting; but after ringing and enthusiastic speeches made by a member from California, **Dudley S. Reynolds**, of Louisville; **Leartus Conner**, of Detroit; **H. A. Hare**, of Philadelphia; **H. O. Marcy**, of Boston; **N. S. Davis**, of Chicago, and **F. W. McRae**, of Atlanta, the report was adopted as read.

The Report of the Committee on President's Address was then read by **Dr. Hibberd**, indorsing in the form of resolutions, all the suggestions contained therein. On motion, the report was adopted.

On motion of **Secretary Atkinson**, several Canadian physicians were made members by invitation.

Dr. John B. Roberts, of Philadelphia, offered a resolution to the effect that all amendments now on the calendar, be postponed until the meeting next year, to be taken up on the second day of the Association meeting in general session. Carried.

FRIDAY, JUNE 9TH.—GENERAL SESSION.

The Association was called to order by **President McGuire** at 11 A. M.

Dr. Walter Wyman, of Washington, D. C., read the Address on State Medicine. He selected for his subject "Extinction of Contagious Diseases." He said the history of the world shows that whole races of men and other animals have become extinct. Why should not races of microbes become extinct, and certain diseases that once ravished the earth in epidemic form have so lost their inherent strength or have been so controlled in the latter part of the nineteenth century as to warrant the belief that their histories are closed, or fast closing.

With regard to yellow fever, the great period of its history was from 1793 to 1805. Formerly it was of common occurrence in Europe, the ports of Spain in particular, suffering severely between 1801 and 1825, but there has been no disastrous epidemic of this disease in Europe since that of Lisbon in 1857, thirty-six years ago. Its earlier history in this country includes invasion, not only of the South, but of ports as far North as Pennsylvania, New Jersey, New York and even New Hampshire. But to-day, though constant vigilance against its introduction is necessary, it has practically vanished from the ports of the United States.

He said since the discovery of vaccination by Jenner in 1796, small-pox, though still a stubborn foe, no longer devastated without restraint. It is now simply a matter of choice whether one shall be made absolutely proof against this disease, and the good effects of a compulsory law regarding vaccination were seen in the statistics of Prussia, in which country, for six years prior to the enforcement of vaccination, the deaths from small-pox averaged 85 per 100,000 of the inhabitants, while from 1875 to 1886, after the law came into force, the yearly average was but two per 100,000.

Typhus fever flourished to-day in certain parts of Mexico, and was occasionally reported from the Old World. It was always a menace where large numbers of people were crowded together with unsanitary surroundings. But it has no permanent lodgment in the United States, and the energetic and successful measures instituted by the Board of Health of New York during the past winter to suppress this disease, although it appeared in a section of the city more densely populated than that of any other city in the world, were a striking example of what may be accomplished by proper law, energetic execution and scientific disinfection.

With regard to cholera, which was still an ever threatening menace, the history of the past few years had demonstrated most clearly its relation to filth and to contaminated food and water, both of which conditions required only the peculiar energy and love of cleanliness characteristic of the Anglo Saxon race. In recent years the superior sanitation of England, and the more perfect quarantine surveillance of the United States, had served to protect these two nations from this exotic disease. One possible agency in the elimination of these diseases, still young as a science, but not without promise, was protective inoculation. Whatever opinion may be held of Freire's inoculations for yellow fever, and Kitasato's and Haffkine's inoculations for cholera, the investigations of these and other bacteriologists in this particular field, warranted the hope that results would be attained equal in efficiency to vaccination for variola.

The permanent Secretary read an invitation from the American Pharmaceutical Association to send delegates to their meeting at Chicago, August 14, 1893.

The permanent Secretary presented from the General Business Committee the following resolutions, which were adopted by the said Committee, and were submitted for the approval of the Association:

Resolved. That no paper shall be read by title in any Section which is not actually in the hands of the officers of the Section, and that the Secretary of the Association be instructed to communicate this action to each Section.

Resolved. That the General Business Committee hereby request the officers of Sections to communicate to this Business Committee any general resolutions passed relating to the conduct of the Sections.

Resolved. That we recommend that the Treasurer and Committee of Arrangements adopt measures to secure, by courteous circular letters, as large a registration of members as possible by mail three or four weeks before each annual meeting. Also that one month after the annual meeting, each member who has not paid his annual dues, be sent a notice that dues have not been paid, and that he be requested to remit the same; further, that similar notice be sent at each of the two succeeding months to those who do not remit; and that those who still fail to remit, be drawn on at sight at the beginning of the next month, having been notified that they would be thus drawn on at the time specified.

Unanimously adopted.

From the Section of Materia Medica and Pharmacy a resolution was offered and adopted to the effect that the American Medical Association recommend that the next edition of the "United States Pharmacopœia" soon to be issued, be at once practically adopted by physicians in prescribing and pharmacists in compounding. It also advises the general adoption by physicians and pharmacists of the "National Formulary," issued by the American Pharmaceutical Association, and that the teaching medical and pharmaceutical colleges adopt these works as text-books.

DR. J. E. BOYLAN offered the following amendment to By-law Number II, relating to Sections. The first clause of paragraph 5 shall be amended to read:

"It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper or a title indicative of its contents and its length, to the Secretary of said Section, at least one month before the annual meeting at which the paper or report is to be read." Adopted.

A communication from Dr. J. M. Toner, of the Committee on Jenner Centennial, reported progress, and asked permission to fill a vacancy in the Committee owing to the death of Dr. T. F. Wood, of North Carolina.

The report was received and permission granted.

The President announced delegates to the Eleventh International Medical Congress at Rome, and also a delegate to the American Pharmaceutical Association in the person of Dr. Frank Woodbury, of Philadelphia.

On motion the President and permanent Secretary were granted authority to appoint other delegates, if deemed desirable.

The permanent Secretary read the following as officers of Sections.

Surgery and Anatomy: Chairman, J. B. Roberts, Philadelphia; Secretary, F. W. McRae, Atlanta, Ga.

Practice of Medicine: Chairman, H. A. Hare, Philadelphia; Secretary, W. H. Washburn, Milwaukee.

Obstetrics and Diseases of Women: Chairman, Joseph Eastman, Indianapolis; Secretary, George I. McKelway, Philadelphia.

Neurology and Medical Jurisprudence: Chairman, J. G. Kiernan, Chicago; Secretary, Frank P. Norbury, Jacksonville, Ill.

Ophthalmology: Chairman, A. R. Baker, Cleveland, O.; Secretary, L. H. Taylor, Wilkesbarre, Pa.

Laryngology and Otology; Chairman, E. Fletcher Ingals, Chicago; Secretary, J. F. Fulton, St. Paul.

Materia Medica and Pharmacy: Chairman, Frank Woodbury, Philadelphia; Secretary, F. E. Stewart, Watkins, N. Y.

Diseases of Children: Chairman, W. S. Christopher, Chicago; Secretary, Frank A. Churchill, Chicago.

State Medicine: Chairman, Geo. W. Stoner, United States Marine-Hospital Service; Secretary, C. H. Sheppard, Brooklyn.

Dermatology and Syphilography: Chairman, A. H. Ohmann-Dumesnil, St. Louis; Secretary, L. F. Frank, Milwaukee.

Physiology and Dietetics: Chairman, I. N. Love, St. Louis; Secretary, E. Cutter, New York.

Oral and Dental Surgery: Chairman, W. H. Fletcher, Cincinnati; Secretary, E. S. Talbot, Chicago.

The President appointed as the Committee to confer with the American Public Health Association, Drs. U. O. B. Wingate, of Milwaukee; Jerome Cochran, of Alabama, and J. H. Parkinson, of California.

Dr. Robert Reyburn, of Washington, D. C., offered resolutions of thanks, which were unanimously adopted.

Dr. James T. Jelks resigned from the Judicial Council because he was already a member of the General Business Committee.

On motion the resignation was accepted.

President McGuire, in retiring, thanked the Association for the kind treatment extended him and to the permanent Secretary and others who had aided him so efficiently. He then introduced Dr. J. F. Hibberd, of Richmond, Ind., the President-elect, who assumed the chair in a felicitious manner, asking all to go to California next year and in every way to aid in building up the Association.

There being no further business, the Association adjourned to meet in San Francisco, Cal., on the first Tuesday in May, 1894.

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Recent Literature.

Human Monstrosities. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania, and GEORGE A. PIERSOL, M.D., Professor of Histology and Embryology in the University of Pennsylvania. Part IV. Philadelphia: Lea Brothers & Co. 1893.

A notice of the first three parts of this superb work appeared in the number of this JOURNAL for January 12, 1893, to which the reader is referred for a statement of the general plan, purposes and scope of this valuable addition to medical literature.

Part IV is fully illustrated with forty-six wood-cuts and ten photographic reproductions. The first thirty-three pages of text are devoted to the continued description of composite monsters. Of the dicephali, perhaps the most interesting are the Tocci boys, born in 1877, and still living in good health. Of the pygopagi, an interesting account is given of the Hungarian sisters, Helen and Judith, who lived to be twenty-two years of age, and also of the North Carolina and the Bohemian twins.

The most famous example of the xiphopagi is that of the Siamese twins, who are interestingly described: the text contains a photograph of the external appearances from a cast in the Mütter museum, and a plate (by Pancoast) of the internal anatomy. There is also an account of four operations for the separation of this class of monsters. Eighteen pages are devoted to double parasitic monsters, and there is a brief notice of triple monsters, of which only two or three authentic cases are recorded. The work is concluded with an adequate index, and a valuable bibliography referring to works on teratology, monographs, and journal articles.

As a whole the work is a great credit to the learning and industry of its authors, and a great credit, too, to American medical literature. The English-speaking profession are under obligation to the authors for placing within their reach in the vernacular the literature of this most interesting subject. C. M. G.

Modern Gynæcology: A Treatise on Diseases of Women. By CHARLES H. BUSHONG, M.D. New York: E. B. Treat. 1893.

The present volume compares favorably with many recent publications on the same subject, and is a suggestive and safe book to put into the hands of the student and general practitioner. The specialist will find it too elementary. It is on the whole well written, and covers the ground of medical and minor gynæcology pretty thoroughly. Many of the illustrations are old, and some of them crude. While there are many minor points on which we would not agree with the author yet in the main the teaching is sound.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JULY 6, 1893.

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ORGANIC EXTRACTS: THE NEW DEPARTURE IN NEUROLOGICAL THERAPEUTICS.

It was the privilege of some of the physicians of Boston to listen, some months ago, to a fresh and vigorous paper on the above subject, by Prof. C. L. Dana, of New York, well known as a progressive and independent student and teacher of neurology; and it is to this paper, since then published in our Journal[1] that we wish to call the attention of our readers, as being a good introduction to an important subject.

Dr. Dana begins by pointing out how the last few decades have been for the neurologist a time so richly fruitful of refinements and discoveries in nosology and anatomical detail that his time and thought have been given but grudgingly to the study of the causes of disease and the art of healing.

But at last, through the influence of modern bacteriology and pathology, the tide is turning or has turned. No neurologist, as he rightly judges, can now afford to be ignorant of the doctrines of toxæmia, and phagocytosis, and sepsis, or of the vast changes which have come over the old conceptions of inflammation and degeneration, nor of the therapeutic suggestions to which these new views are leading.

Whether the fascinating deductions of Metschnikoff are wholly right or not, it is fair to conclude that the active cause of cellular degeneration and death is a poison, and that our duty as physicians is to learn how to assist the body in its struggle to destroy or arrest this poison, since we can do so little to repair its ravages. We have gone far enough for the present, in the observation of the dead cell under the microscope; let us devote ourselves more to getting rid of the poison that kills it, and be "humoralists" again for a time. Death from acute meningitis and encephalitis and myelitis is death from poisoning; and even the chronic inflammations and degenerations, and some of the chronic neuroses[2] are of similar origin.

How to arrest these causes of disease we are as yet almost wholly ignorant, but we may at least join hands with those who are studying "the applications of the ferments immunizing serum, extracts of normal tissues and organs, and antitoxines, from whatever source we can obtain them."

Dr. Dana has been using, since July, 1892, various animal extracts of the thyroid gland, and of the brain tissue; as well as the rabic virus and Hunter's modification B of tuberculin; and the summary of his observations is as follows:

Locomotor ataxia (brain extract), eight cases (six treatment complete, two discontinued). Four improved, two not improved.
Bulbar paralysis (brain extract), one case. Cured.
Progressive muscular atrophy in late stages (brain extract), three cases. Not improved.
Epilepsy (brain extract, rabic virus and testicular extract), five cases. Three improved, two not improved.
Two other cases whose course was known to me were improved.
Paralysis agitans (brain extract), one case. Not improved.
Tubercular tumor of brain (Hunter's modification B of tuberculin), one case. Not improved.
Basedow's disease (thyroid extract), one case. Symptoms increased.
Dementia (thyroid extract), one case. Improved.

The case of bulbar paralysis is given at length, and is highly interesting and important.

With this brief summary we must leave Dr. Dana's refreshing and straightforward paper, for the sake of discussing some aspects of the subject in a general way, and with reference, also, to a few other communications. We are heartily with him in his hopeful striving, and agree with him that "there is no more reason to doubt that there should be therapeutical properties in extracts obtained from animal organs than that there should be such from vegetable organs."

Indeed, it is possible to go much further than this. We have had efficient pepsine and pancreatine for many years; and the cure of myxœdema by thyroid extracts, even such as have passed through the crucible of the stomach and the filter of the intestinal walls, is an event to be counted upon (*mirabile dictu!*) as certain.

But while we wish well to the new therapeutics, and admit, in general, the doctrines on which it is based, we feel it a duty to assert that the facts do not seem to us to justify any such extravagant statements as those made by some of the advocates of the organic extracts.[3] Indeed, this is one of the cases where it is the duty of every considerative man to distrust even his own power of observation, and, still more, his own power of referring what he sees to its true cause. The time has not even yet come when we can say with safety that now we will wipe off the slate and begin to count our observations as of permanent value. We must not forget that chapter in the long history of error, which deals with the suspension treatment of tabes. There is no marvel claimed for testiculine which cannot be fully paralleled by results clearly referable to hypnotism, and — take it as you will — the remarkable investigations of late years into this branch of psychology have shown that mental influences have an enormous power of removing symptoms of disease and changing nutritive conditions, and that it is extraordinarily difficult to be sure that we have eliminated them. It is, moreover, by no means those mental influences that appeal most obviously to the intelligence or to the imagination that exert the most effect. The powerful phantom of "suggestion" often stands behind the physician's chair, invisible alike to him and to his patient, though both of them believe that they have, Faust-like, discovered and used the spells which would have forced him to materialize had he been present.

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[1] [illegible] tracts. Boston Medical and Surgical Journal, May 18, 1893.

[2] [illegible]

[3] See the British Medical Journal from June 3d and 10th of this year, for Professor Brown-Séquard's most recent utterances on this subject.

It is true that the wonderful history of myxœdema and its treatment should make us ready for new developments in the same line, and anything that is equally attested will find itself equally accepted; but there is as yet neither experiment nor observation which place the results which are claimed to follow injections of testiculine and cerebrine on anything like the same plane.

Myxœdema we can cause and we can cure, with practical certainty, by removing or supplying the thyroid secretion. Can we cause and cure tabes or neurasthenia or arterio-sclerosis[4] with similar certainty, by removing the testes or by injections of spermatic extract?

Most of the signs of improvement have been such as were furnished by the patient's own feelings. It is said that many "cures" have been made; but in view of the fact that many failures to cure are likewise on record it is permissible to question whether the disease itself has been really cured at all. At any rate, this result does not occur as frequently as it does in myxœdema.

"Ameliorations" do not count for much, with a new remedy.

Castration causes a remarkable train of results, and it would be a reasonable and a highly interesting experiment to see if these could not be prevented or cured by testiculine, but neither the ox nor the eunuch is neurasthenic or tabetic.

It may eventually be proved by accurate physiological experimentation that testiculine does exert some powerful action on the nervous system. These proofs would be highly welcome, but they are not yet forthcoming.

It is significant that Professor Brown-Séquard concludes his paper by saying: "When we know how great, how various, are the morbid physical and dynamical attractions that the nervous system can produce, it is easy to understand that what it can do in one way it can also do in just the opposite way, so as to re-establish the normal state, physically and dynamically, and this may serve to explain the extreme variety of the favorable effects that may be due to certain liquids which increase considerably (as is proved) the power of the cerebro-spinal centres."

Not to speak of the uncertainty of the last assumption in this reasoning, the thought suggests itself whether, if the strengthened nervous system can work these varied effects, the argument in favor of unsuspected "suggestion" (or "expectancy," if the term be preferred), which is well-known to strengthen the nervous system, is not reinforced by these considerations.

This feeling had already grown up in our mind when we received a pamphlet by an Italian physician, Massalongo, Docent at the University of Padua, devoted to sustaining this view: Its title, which we give below,[5] sufficiently indicates the character of its contents.

We do not definitely take this ground,[6] for it would be a great misfortune if any investigation of value should be checked, and any opportunity omitted for increasing our therapeutic resources. There is nothing more improbable in the idea that disease should be cured by one organic fluid than that it should be caused by another; but it is a question of evidence in each case whether or not this is true, and a large amount of evidence is required to establish so new a proposition.

The study of toxines and antitoxines has opened men's minds amazingly. The life of a healthy man, well cared for and protected, runs on so smoothly that he does not dream how often he passes by the brink of lighter or severer self-intoxications; nor that it is his organic secretions that, for the most part, render him liable to these dangers and provide safeguards against them. Special conditions of the blood are unquestionably correlated, not only to the health of the tissues, but to the structure of the body as a whole. The lack of a few grains a day of thyroid juice makes the child grow up a cretin; the lack of the testis makes the bull-calf grow up an ox. It is said to be a special diet alone that is needed to make the queen bee develop from the worker.

We should gladly welcome the discovery of diets or organic ferments that can neutralize the causes of disease, but the pendulum ought not to be allowed to swing so fast and far that its inevitable return will occur with destructive force.

We are glad to hear of Dr. Dana's results, and glad to hear of the experiments going on in our own city. But some of the reports would almost make it appear as if we might hope to cure everything with anything, so long as the remedy bore the magic name of "organic." We do not believe that this will prove to be the case.

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[4] See British Medical Journal, June 10th.

[5] Le Injezioni di Liquido Testicolare di Brown-Séquard et la Trasfusione Nervosa di Constantin Paul. — Un nuovo Capitolo di Terapeutica Suggestiva.

[6] See Editorial in this Journal, January 12, 1893.

MEDICAL NOTES.

The Drought in Europe. — Both England and parts of the Continent have suffered much from lack of rain-fall. In many places no rain of any consequence has fallen for over three months; many crops are ruined; much live-stock has been killed on account of the lack of food for them; and the water-supply of many towns has either given out or has been very much reduced. What water there is has become bad to drink, and in some places mild epidemics of typhoid have appeared.

Suicides in France. — The official report of suicides in France for the year 1891 shows that the total number was 8,180, or 21 per 100,000 inhabitants. Of this number 78 per cent. were males. The methods adopted appeared to differ much according to the sex. Hanging is a favorite method with men, more than half having got rid of themselves in this way, whereas drowning is chosen relatively more by women. The greatest relative difference was by firearms, which were chosen by 780 men and only 52 women, whereas poison attracted only 79 men and 104 women.

NEW ENGLAND.

Appropriations for Public Institutions. — Among the appropriations in the Loan Bill passed by the Boston City Government last week were the following: Boston City Hospital, for new buildings $400,000; Long Island Institutions and the Lunatic Hospital, each $100,000.

A **Boylston Medical Prize** for 1893 has been awarded to Drs. Wm. E. Hughes and Wm. S. Carter, of Philadelphia, for an essay entitled, "A Clinical and Experimental Study of Uræmia."

Massachusetts Medico-Legal Society. — At the annual meeting of this Society, June 13, 1893, the following officers were elected for the ensuing year: President, Dr. Z. B. Adams; Vice-President, Dr. S. W. Abbott; Recording Secretary, Dr. F. W. Draper; Corresponding Secretary, Dr. B. H. Hartwell; Treasurer, Dr. A. E. Paine.

NEW YORK.

Small-Pox. — On June 26th the State Board of Health was notified of the existence of fourteen cases of small-pox at Yonkers, on the Hudson. Six of the cases had their origin in the house where the first case reported was quarantined.

Revoked Charters. — The Board of Regents of the University of the State of New York have recently revoked the charters of the "College of Midwifery of the City of New York," and the "College of Massage," two institutions under the same management.

"Odi Persicos." — On June 24th, Goolam Kader, a notorious Arabian quack oculist, was held for trial in Special Session on a charge made by the Medical Society of the County of New York, of practising medicine without a license; bail being fixed at $500. A few days previously he had opened an office and inserted glowing advertisements in a number of newspapers, including several published in French, German and Italian. One of these attracted the attention of Dr. Ferdinand C. Valentine, an accomplished linguist, who, as the editor of *Medical Abstracts*, is in constant receipt of all the foreign medical journals; and he at once recognized the name as that of a quack who on account of his outrageous practises had been prosecuted in Genoa, Brussels, Cologne, Berlin and many other Continental cities. Dr. Valentine found from his reading that his favorite operation was that for cataract, and that in consequence of his so-called "cures" hundreds of cases of total blindness had resulted. He at once reported the fact of the man's establishing himself in New York to the County Medical Society, and the career of this dangerous charlatan here was quickly cut short. The other American cities will now have to be on the lookout for him.

Overcrowded Insane Asylums. — The Grand Jury having made some severe strictures upon the overcrowded and generally unsatisfactory conditions of the city asylums for the insane on Ward's and Blackwell's Island, the Mayor wrote a letter to the Commissioners of Charities and Correction, calling attention to the presentment and inquiring what disposition had been made of $500,000 which was appropriated in December last for the repair of old buildings and the erection of new ones, on Ward's Island and at the city's farm at Central Islip, Long Island. In reply, the Commissioners state that the new buildings on Ward's Island are progressing rapidly, that four new buildings at Central Islip will be ready for occupancy within ten days, and that all the new buildings in both locations will be completed by October 1st. They also report that the number of insane patients cared for by the city amounted on June 1st to 5,939, an increase of 489 since the first of January last, and that they will need another $500,000 to effectually relieve the overcrowding of the asylums and to provide for the natural increase of the insane.

Underpaid Assistants and Nurses. — Some two months ago Mrs. Martha Adair, a patient ninety-four years of age in the Brooklyn City Asylum for the insane at Flatbush, died under circumstances which led the coroner's jury which investigated the case to censure the asylum authorities. Later the Grand Jury indicted the superintendent Dr. Sylvester Phillips, and Ellen Reilly, the nurse who had charge of the patient, for manslaughter in the first degree on the ground of gross negligence; but they were both retained in office by the Commissioners of Charities and Correction. Now the Grand Jury for the June term has made a presentment in which it charges the superintendent with gross neglect of duty and finds that the general management of the institution by him to have been extremely faulty and unsatisfactory. It also charges the nurse, Ellen Reilly, with gross neglect of duty and incompetence, and recommends the immediate dismissal of both. It finds, furthermore, that the rates of pay for the assistant physicians at the asylum are not sufficient to obtain the necessary ability, and recommends that the rate of compensation be fixed at from $800 to $1,500 per annum, together with the customary allowances of board and lodging. Among the other recommendations made by the Grand Jury are the following: That the pay of male nurses be from $20 to $40 a month, and of female nurses, from $20 to $30 a month; that quarters sufficient to accommodate the requisite number of nurses be erected; that such changes be made in the law as shall make the Charities Commissioners of Brooklyn solely responsible for the administration of the asylum; and that at least one of the Commissioners shall be a competent physician.

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Miscellany.

IMPROVEMENTS IN THE MEDICAL DEPARTMENT OF THE ARMY.

Surgeon-General Sternberg has inaugurated the establishment of two new features in the medical department of the army. The first is to be known as the Army Medical School, and is to consist of a course of four months' duration given in the Army Medical Museum for the benefit of newly appointed medical officers. The general order providing for the school is as follows:

> By direction of the Secretary of War, upon the recommendation of the Surgeon General of the Army, an Army Medical School will be established in the city of Washington for the purpose of instructing approved candidates for admission to the Medical Corps of the Army in their duties as medical officers. The course of instruction will be for four months and will be given annually at the Army Medical Museum in Washington city, commencing on November 1st. Four professors will be elected from among the senior medical officers of the army stationed in or near the city of Washington, and as many associate professors as may be required to give practical laboratory instruction in the methods of sanitary analyses, microscopical technique, clinical microscopy, bacteriology, urine analysis, etc.
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> The faculty of the Army Medical School will consist of: (1) A president of the faculty, who shall be resposible for the discipline of the school, and who will deliver a course of lectures upon the duties of medical officers in war and peace (including property responsibility, examination of recruits, certificates of disability, reports, rights and privileges, customs of service, etc.). (2) A professor of military surgery (including the care and transportation of wounded). (3) A professor of military hygiene (including practical instruction in the examination of air, water, food and clothing from a sanitary point of view). (4) A professor of clinical and sanitary microscopy (including bacteriology and urinology).

A new system of assignments of medical officers is also to be established. It has been the custom to detail older surgeons for duty in large cities, where they sometimes remained for some years. Hereafter surgeons with the rank of captain will be detailed for one year; so that opportunity will be given for the officer to become familiar with the work done in hospitals and an opportunity given for attending lectures and meetings of medical societies. The details will be made in Boston, New York, Philadelphia, Baltimore, Chicago, St. Louis and San Francisco. The senior medical officers who have heretofore been stationed in several of these cities as attending surgeons will be required to perform the more responsible duties of post surgeons at the larger military posts, where, as a rule, one or more younger officers will also be stationed as assistants. The policy will not only give the younger men of the medical corps better opportunities for professional advancement, but it will give them the benefit of the experience of the seniors and of their necessary instructions and discipline which so often in the past they failed to receive.

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THE CAUSE OF DEATH IN BURNS.

Hock in the *Wiener klinische Wochenschrift*, No. 17, describes a series of experiments in 32 cases of extensive burns during life, of which number one-half finally died. A gradual increase in the density of the blood always occurred, the highest point being reached in about eight hours after the injury, and in cases which recovered returning to normal in about two days. The author concludes that this is due to the inability of the blood to retain its plasma, such a condition not accompanying any other disease. As to the primary cause, he attributes the change to the alteration which has taken place in the red blood-cells, and thinks a connection exists between these two changes as produced by overheating of the blood to 40° to 58° C. The blood thus damaged has also been shown to possess toxic properties apart from the resorption of poisonous material which takes place on the surface of the wound. These factors tend to explain the symptoms analogous to anæmia without any loss of hæmoglobin being perceptible. There is also danger in the formation of emboli, thrombi, and parenchymatous degenerations. As to treatment, the author believes that subcutaneous injections of salt are useless. Intravenous injections show very good though temporary results. The proposal to remove the exudations surgically is treated lightly, as being impracticable or unnecessary.

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THE TREATMENT OF MALIGNANT TUMORS BY INOCULATIONS OF ERYSIPELAS.

Dr. W. B. Coley records a series of cases in which an attack of erysipelas coming on either accidentally or from inoculation appeared to produce an antagonistic effect to malignant disease.[1] Some of these cases occurred before the publication of Fehleisen's experiments in Germany; most of them are of recent date. Injections of pure culture of the streptococcus of erysipelas were injected into the tumor substance. Erysipelas thus artificially produced is not a dangerous condition. In many cases the malignant growth appeared to be checked, and sometimes entirely disappeared. If a recurrence showed itself, another inoculation was made, and in some cases several. Occasionally it was not possible to produce erysipelas by inoculating. The author refers to the recent experiments of Spronck, who injected the toxic products of the streptococcus of erysipelas at a point distant from the seat of the malignant disease, with great improvement in cases of sarcoma and but little effect in cases of carcinoma. The author used repeated injections of pure fluid culture, generally deeply into the tumors themselves. A reaction, with a temperature of 104° (lasting for one or two days) generally followed in cases where erysipelas was not produced. The effect

[1] American Journal of Medical Sciences, May.

upon the malignant growth is more brilliant and permanent where an attack of true erysipelas has resulted. Very rarely is an abscess formed from the injection; when there is, the author believes that a mixed infection is present. He concludes that the curative effect of erysipelas upon malignant tumors is an established fact. The action upon sarcoma is more powerful than upon carcinoma, in about the ratio of three to one. The treatment of inoperable tumors by repeated inoculations of erysipelas is both practicable and not attended with great risk. The curative action is systemic and probably due chiefly to the toxic products of the streptococcus, which products may be isolated and used without producing erysipelas. This method should not be employed indiscriminately, until further experiments have proved its limitations. Since writing the paper, the author has used the toxic products alone in injections, and finds that the advantages of so doing are great; as the necessity for isolation is avoided, and the action of the products can be so carefully regulated that the dangerous element can be entirely eliminated.

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THERAPEUTIC NOTES.

Unfavorable Results from Piperazine. — Rörig[1] reports that in a certain number of cases the therapeutic use of piperazine has been followed by albuminuria, and advises caution in the use of this drug in cases where the kidneys are not sound.

Creasote in Phthisis. — Albu[2] describes the results of treatment of pulmonary tuberculosis with creasote in the Moabite Hospital, in Berlin, for the past five years. For the last year large doses, recommended by Sommerbrodt, have been given. Creasote is without influence upon the tubercle bacilli. The author believes that its use in phthisis should only be symptomatic. For most patients it is a good expectorant; sometimes it increases the appetite and acts as a tonic; while in many cases it is useless, and in a few worse than useless.

The Treatment of Diabetes Mellitus with Raw Pancreas. — Following the analogy of the treatment of myxœdema by thyroid juice, experiments have been made in several English hospitals of feeding raw pancreas to cases of diabetes. White[3] finds that most patients take the raw pancreas quite easily. The patients gained in body weight and felt better; but in most cases the amount of sugar and quantity of urine was not diminished, although in some it was.

Actinomycosis. — A case is reported in the *Revue Medico-Chirurgicale*, No. 7, in which a case of actinomycosis was successfully treated with iodide of potash, given in doses of twenty-five grains a day.

Gallanol. — Gallanol is a white crystalline body, of a slightly bitter taste, slightly soluble in cold, freely in hot water and in alcohol, also in ether, benzine, and in chloroform. The alkalies dissolve it, yielding a brown coloration, but without sensibly decomposing it. It is prepared by boiling tannin with anilin, treated with water acidulated with hydrochloric acid, from which it crystallizes and is purified by successive recrystallizations. It does not possess irritant properties. Cazeneuve and Rollet have used this remedy in psoriasis as an ointment, in strength from three to twenty-five per cent. It apparently has value for the treatment of eczema, catarrhal lesions of the mucous membranes, especially in the blennorrhagias of the gouty.

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Correspondence.

GREEN'S OPERATION FOR ENTROPIUM.

Salem, June 27, 1893.

Mr. Editor: — Of all the operations that have been devised for the relief of entropium and ingrowing eyelashes, within the last twenty-five years, that of Dr. John Green, of St. Louis, because of its simplicity and its satisfactory results, is doubtless the best.

Judging by the annual reports of eye-hospitals in this country, its merits are becoming better recognized by ophthalmic surgeons. Dr. Green's method has one advantage, especially to practitioners living in remote districts; it requires no special instruments for its performance, as a knife alone is sufficient. This operation is described in the later American treatises on the eye.

Its originator recently told me that, in many cases, he no longer excises a strip of skin above the cilia, nor does he always insert sutures. An incision is made through the conjunctiva and tarsus, about two millimetres from the lid-margin, and extending the whole length of the lid, or only as far as may seem necessary. Then, on turning up the ciliary border, the lashes will hold it well everted by means of fibres of cotton applied with collodion (United States Pharmacopœia), so as to form a support, which should be kept in place for a week or less during the healing process.

A month ago, in the case of an old woman who had suffered from tricheasis for many years, I made the incision in both lids, under cocaine, and apparently without much pain. The cilia were so far gone that it did not seem possible to keep the lid-border tilted up by means of collodion alone, so deep sutures were introduced and allowed to remain for forty-eight hours, as in the original operation, though no strip of integument was removed. The result was quite satisfactory. A not inconsiderable experience in treating this affection has caused me to prefer Dr. Green's operation to others which are more difficult to perform and the results of which are, on the whole, less gratifying.

Very respectfully,
David Coggin, M.D.

METEOROLOGICAL RECORD,

For the week ending June 24, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.		[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
S...18	29.96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	E.	[illegible]	[illegible]	O.	C.	[illegible]
M..19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.W.	[illegible]	21	[illegible]	[illegible]	
T..20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	17	[illegible]	C.	C.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E.	E.	9	[illegible]	C.	[illegible]	
T..22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E.	E.	[illegible]	[illegible]	R.	R.	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	N.	13	[illegible]	[illegible]	R.	0.67
S..24	[illegible]	[illegible]	62	55	[illegible]	[illegible]	[illegible]	N.E.	E.	13	[illegible]	O.	O.	[illegible]
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[1] Therapeutische Monatshefte, 1893, Heft 3, S. 117.

[2] [illegible]

[3] [illegible]

[illegible]

RECORD OF MORTALITY

For the Week ending Saturday, June 24, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal Diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	880	382	20.90	10.45	8.80	4.40	1.76
Chicago . . .	[illegible]	471	[illegible]	23.31	[illegible]	6.93	6.72	1.89
Philadelphia .	1,115,562	[illegible]	181	17.02	14.03	6.90	4.60	1.84
Brooklyn . .	[illegible]	400	177	18.25	8.75	8.50	3.00	2.25
St. Louis . . .	[illegible]	—		—	—	—	—	—
Boston . . .	[illegible]	160	[illegible]	8.19	18.27	1.26	1.99	3.78
Baltimore . .	[illegible]		—	—	—	—	—	—
Washington .	308,431	177	88	26.88	9.52	24.08	1.12	—
Cincinnati . .	305,000		—	—	—	—	—	—
Cleveland . .	[illegible]	95	38	18.90	11.55	5.25	6.30	2.10
Pittsburg . .	[illegible]	143	57	35.70	7.00	22.40	1.40	4.20
Milwaukee . .	250,000	71	31	21.15	5.64	4.23	8.46	4.23
Nashville . .	87,754	41	24	29.28	17.08	21.96		—
Charleston . .	[illegible]			—	—	—	—	—
Portland . . .	40,000	8	3	12.50	—	—	12.50	—
Worcester . .	[illegible]	29	19	13.80	3.45	3.45	3.45	—
Fall River . .	87,411	23	9	17.40	13.05	13.05	—	4.35
Lowell . . .	87,191	24	9	20.80	12.48	16 64	4.16	—
Cambridge . .	77,100	24	7	4.16	14.28	4.16	—	—
Lynn	62,656	16	2	12.50	—	—	—	6.25
Springfield . .	[illegible]	17	4	11.76	11.76	—	—	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	45,886	20	8	15.00	10.00	—	5.00	—
Holyoke . . .	[illegible]		—		—	—	—	—
Salem	32,233	7	2	14.28	—	14.28	—	—
Brockton . .	[illegible]	10	3	20.00	20.00	—	—	—
Haverhill . .	31,396	12	4	25.00	16.66	—	—	25.00
Chelsea . . .	30,264		—	—	—	—	—	—
Malden . . .	29,394	7	1	14.28	28.56	—	—	14.28
Fitchburg . .	27,146	7	2	—	28.56	—	—	—
Newton . . .	27,556		-	—	—	—	—	—
Taunton . . .	26,972	7	2	14.28	—	14.28	—	—
Gloucester . .	26,688	4	1	—	25.00	—	—	—
Waltham . .	22,058	4	1		-	—	—	—
Quincy . . .	19,642	6	1	16.66	33.33		—	—
Pittsfield . .	[illegible]	3	1	—	—	—	—	—
Everett . . .	[illegible]	4	1	50.00	25.00	—	—	25.00
Northampton .	16,331	—	—	-		—	—	—
Newburyport .	14,073	4	1	—	25.00	—	—	—
Amesbury . .	10,920	1	0		-	—	—	—

Deaths reported 3,128: under five years of age 1,329; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 641, consumption 341, diarrhœal diseases 284, acute lung diseases 279, diphtheria and croup 127, scarlet fever 66, measles 12, whooping-cough 58, typhoid fever 33, cerebro-spinal meningitis 29, erysipelas 10, malarial fever 6, typhus fever 3, small-pox 3.

From measles New York 14, Pittsburgh 9, Brooklyn 8, Chicago 4, Cleveland 2, Philadelphia, New Bedford, Quincy, Marlborough and Woburn 1 each. From whooping cough New York 12, Chicago 8, Philadelphia 6, Brooklyn 5, Pittsburgh and Nashville 2 each, Milwaukee, Lynn and Brockton 1 each. From typhoid fever Chicago 14, Philadelphia 8, New York 6, Brooklyn and Milwaukee 2 each, Worcester 1. From cerebro-spinal meningitis New York and Chicago 10 each, Brooklyn, Washington and Cleveland 2 each, Worcester, New Bedford and Brockton 1 each. From erysipelas New York and Boston 2 each, Chicago, Brooklyn, Washington, Nashville, Springfield and Everett 1 each. From typhus fever New York 3. From small-pox New York 3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending June 10th, the death-rate was 18.2. Deaths reported 3,597; acute diseases of the respiratory organs (London) 233, diarrhœa 148, measles 117, whooping-cough 66, diphtheria 57, scarlet fever 44, fever 21, small-pox (London 7, West Ham 3, Birmingham, Manchester and Halifax 2 each, Bristol, Leicester, Oldham and Bradford 1 each), 20.

The death-rates ranged from 9.7 in Nottingham to 24.7 in Liverpool; Birmingham 18.7, Bradford 17.9, Croydon 11.5, Hull 18.5, Leeds 20.1, London 18.1, Manchester 21.0, Newcastle-on-Tyne 17.7, Portsmouth 13.1, Sheffield 16.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 24, 1893, TO JUNE 30, 1893.

By direction of the President, **Captain Marcus E. Taylor**, assistant surgeon, will report in person to the president of the Army Retiring Board at Fort Logan, Colorado, when required by the Board for examination by it.

First-Lieut. Frank T. Meriwether, assistant surgeon, U. S. A., is relieved from duty at Madison Barracks, N. Y., and ordered to Fort Logan, Colorado, for duty.

Captain Louis A. LaGarde, assistant surgeon, will, in addition to his present duties in connection with the World's Columbian Exposition, furnish the necessary medical attendance for the officers and enlisted men of the Army on duty at the Exposition grounds.

Captain William C. Shannon, assistant surgeon, in addition to his duties in the office of the surgeon-general, is assigned to duty as assistant to the attending surgeon in this city.

The leave of absence granted **Major Washington Matthews**, surgeon, U. S. A., is extended one month.

Captain Freeman V. Walker, assistant surgeon, now on leave of absence at the Army and Navy Hospital, Hot Springs, Arkansas, will proceed at once to Fort Trumbull, Connecticut, and report in person to the commanding officer of that post for temporary duty, relieving **Major Henry M. Cronkhite**, surgeon. Major Cronkhite, upon being relieved by Captain Walker, will proceed to Fort Clark, Texas, and report in person to the commanding officer for duty at that post.

First-Lieut. Alexander N. Stark, assistant surgeon, is relieved from duty at Fort Monroe, Virginia, and ordered to Fort Clark, Texas, for duty, relieving **Captain Edgar A. Mearns**, assistant surgeon. Captain Mearns, upon being thus relieved, will proceed to Nogales, Arizona, and report to the senior member of the commission appointed for the location and marking of the boundary between Mexico and the United States, for duty with the commission.

An Army Retiring Board having found **Major John O. Skinner**, surgeon, incapacitated for active service, the extension of leave of absence on surgeon's certificate of disability, is further extended until further orders.

Leave of absence for two months, to take effect on or about July 15, 1893, is granted **First-Lieut. Benjamin Brooke**, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 24, 1893.

D. M. Guiteras, passed assistant surgeon, from Naval Hospital, Philadelphia, and to Naval Laboratory, Brooklyn, N. Y.

R. M. Kennedy, assistant surgeon, from C. S. S. "Bache" and to examination for promotion.

George H. Barber, passed assistant surgeon, from the U. S. S. "Miantonomoh" and to the Coast Survey.

APPOINTMENT.

Dr. Francis Barnes, of Cambridge, has been appointed by the Governor, Trustee of the School for Feeble-Minded, in place of **Dr. William A. Dunn**, resigned.

SOCIETY NOTICE.

American Neurological Association.—At the request of the majority of the members, the Council announces that the next meeting of the Association will be held at the West End Hotel, Long Branch, N. J., on July 25th, 26th and 27th. The annual dinner will be held on the evening of the 26th.

Graeme M. Hammond, *Secretary*, 58 West 45th St., N. Y.

RECENT DEATHS.

Jabez B. Lyman, M.D., M.M.S.S., of Salem, died June 29th, aged seventy-four years. He graduated from Amherst College in 1841, and after teaching for several years, graduated from Jefferson Medical College in 1857. He has been in Salem since 1881.

William T. S. Wardwell, M.D., M.M.S.S., of Roslindale, died June 24th. He was a graduate of the Harvard Medical School in 1888.

Thomas R. Dupuis, M.D., professor of clinical surgery and anatomy in the Medical Department of Queen's University, Kingston, Ont., died June 25th, aged sixty years.

BOOKS AND PAMPHLETS RECEIVED.

Points of Similarity Between Us and Homœopathic Physicians. By John B. Roberts, A.M., M.D. Reprint. 1893.

Catalogue of the Exhibits in the Museum of Hygiene, Medical Department of the United States Navy. Washington: Government Printing Office. 1893.

Cholera: Its Causes, Symptoms, Pathology and Treatment. By Roberts Bartholow, M.D., LL.D., Emeritus Professor of Materia Medica, General Therapeutics and Hygiene in the Jefferson Medical College of Philadelphia. Philadelphia: Lea Brothers & Co. 1893.

Lecture.

LECTURES ON THERAPEUTICS.

V. Belladonna, Etc.[1]

[illegible]

[illegible]

The subject which I have selected to study with you to-night is the mydriatics; and as time is so short I propose especially to take up belladonna as a type of these mydriatics, occupying a few moments at the end of the hour, if time suffice, with a discussion of certain other remedies of the group.

Belladonna, as you know, depends for its activity upon the presence of the alkaloid atropine. If the hundredth of a grain of atropine be taken internally the only symptoms which it produces in the average individual is a certain amount of dryness of the mouth and perhaps a little acceleration of the pulse. A sixtieth of a grain produces these symptoms to a more marked extent. A fiftieth or fortieth of a grain develops very pronounced symptoms. Now the mouth is extremely dry, the pupils are slightly dilated, the pulse is distinctly increased in its rate, and at the same time becomes hard rather than soft. After the full toxic dose of belladonna or its alkaloid the symptoms are pronounced. Intellection is affected. At first a little confusion of thought, then delirium, not stupor but delirium — a delirium in which the patient is wrapt up in his own thoughts, oblivious, indeed, unconscious of the world about him, carried away by the stream of his own ideas; a delirium in which probably the patient has hallucinations, but out of which when the delirium is passed comes no memory of these hallucinations. You may have read how the British soldiers near Jamestown in Virginia partook of the stramonium and how they became delirious, and stripped naked; in the words of the old chronicler, they "played a merry comedie." At the same time the pupil is widely dilated; respiration is usually but not always somewhat hurried; the pulse is always rapid (110, 120, 130, 140 a minute), small, corded. The bodily temperature now rises, and there comes out an efflorescence resembling the rash of scarlet fever, not so distinctly punctated as the true scarlet fever rash, a more erythematous blush; and so the hours pass by in delirium until the second stage is developed, when the forces begin to fail. The pulse continues its rapid beat, but the hardness and power is gone out of it. The bodily temperature falls. The dry skin becomes covered with sweat. The pupils keep dilated. The respiration maintains its rate, but grows more shallow. Convulsions appear or the patient sinks into quiet stupor and at last through collapse and coma, the patient passes gradually into death, all functions being obliterated with such extreme equability and so gradually that you scarcely know whether the man has died from failure of the circulation or of the respiration.

It might seem here natural, in accordance with the course I have pursued in past lectures, to say a word in regard to the diagnosis in doubtful cases of belladonna-poisoning. There is one very simple and very sure method of diagnosing poisoning by one of these mydriatics. It consists simply in withdrawing some of the patient's urine, and dropping a little of it in the eye of a brother or of a sister or of the family cat. Under these circumstances if the case be one of mydriatic poisoning there will be dilatation of the pupil. I shall pass by for the present, till I see how my time holds out, the discussion of the diagnosis between poisoning with this mydriatic and with other mydriatics and proceed immediately to the consideration of the physiological action of the remedy.

We find that belladonna produces on the whole very similar symptoms in the lower animals to those which it causes in man, with certain exceptions, however; and I note these exceptions because they bring us face to face with laws of physiological interpretation of which, unless my memory fails me, I have not spoken to you. Some of the lower animals are entirely insusceptible to the action of belladonna. The ordinary goat, so dear to the inhabitants of the outskirts of some of our great cities, rolls the stramonium cud under his tongue with especial delight; and though the infants receiving his milk may feel the effect of the stramonium, the goat himself does not. Now I believe this lack of susceptibility to be the result of inherited narcotic habit. We know perfectly well that the ordinary human individual can become accustomed to the use of a narcotic, and I believe myself that the goat of to-day loves the stramonium because the goat of yesterday was nurtured upon stramonium. It is a very curious fact that the Virginia deer eats tobacco without feeling any of its effects. I have recently seen it stated in an East India journal that certain races of monkeys will feed on the bean of nux vomica and receive no poisonous effect. It does seem as though it were possible for animals to have an acquired drug habit which could pass from individual to the race. A second exception is in regard to dilatation of the pupil, and this especially in regard to birds. Some years since I noted it as an extraordinary fact that the irides of the bird are not affected by atropine or belladonna. I came to the conclusion that there must be an anatomical difference between the iris of the bird and mammal; and I ventured the prediction that some time it would be found that the muscle fibres of the bird's iris were striated, because we know that atropia does not affect striated fibres. Some years after I had published this conjecture Bernstein and Dogiel by actual anatomical examination demonstrated that the fibres in the irides of birds are striated. They also showed that the fibres of the œsophagus of the rabbit are striated and are not affected by atropine. The cat has certain parts of its œsophagus with striated muscular fibres, other parts with non-striated fibres, and where the striated fibres come belladonna has no effect; where the non-striated fibres are belladonna paralyzes the œsophagus. Passing by these thoughts without more detail, let us study first the action of this drug upon the circulation.

Taking up the frog's heart, we find that there has been a good deal of contradiction among investigators. Some have asserted that the frog's heart has its activity increased by atropine; others that it is paralyzed by atropine. When we come to look into this discord, certain facts come out plainly. In the first place, it is absolutely certain that after toxic doses of atropine the heart is arrested in diastole, and that the heart is at this time not susceptible to the action of galvanic or other stimulant. Now, unless a drug acts through the pneumogastric nerve, it is, I think, an unquestionable fact that when it arrests the heart in diastole it acts as a paralyzant of the heart, and we have positive evidence of this fact in regard to atropine. A large dose of atropine brought in contact with the frog's heart paralyzes it at once, and we learn as a settled positive fact that an enormous dose of atropine paralyzes the heart muscle. The question concerning which there is doubt is as to the action of the small dose upon the frog's heart. We have the experiments of Bowditch and Luciani, which seem to indicate that the small dose stimulates the heart of the frog; also those of Ransom made upon the octopus, of Furbringer made upon the apex of the frog's heart, in which it was found a little of the atropine would start movement in the apex after it had ceased to beat. Then we have the experiments of Beyer upon the heart of the terrapin — all going to show that atropine in minute amount does stimulate the heart; and I think we must conclude that this alkaloid has some stimulant action upon the heart muscle, but that in man this stimulant influence is subordinate to action upon other parts of the system, so that we cannot use belladonna or atropine as a primary cardiac stimulant. One of the most marked phenomena of poisoning by atropine is the extreme rapidity of the pulse. This rapidity of the pulse is probably in part due to the action I have spoken of upon the heart muscle, but it is much more largely due to the influence of the drug upon the pneumogastric nerve. Bezold and Bloebaum were, I think, the first to point out that if you cut the pneumogastric nerve in the atropinized animal there is no increase in the rate of the heart. These investigators also performed an experiment which has been repeated many times since, namely, poisoned the animal, exposed the pneumogastric nerve, galvanized the nerve, and found that it had no control whatever over the heart. We know, therefore, that atropine is a paralyzant of the peripheral pneumogastric, and that the great rapidity of the heart's action under its influence is chiefly the outcome of pneumogastric paralysis; and we see now why it is that belladonna enormously increases the pulse-rate in the hound and increases it very little in the ordinary domestic rabbit. The ordinary domestic rabbit has a very feeble pneumogastric. Its pneumogastric has lost its functional activity through the years of confinement. The hound keeps down the action of the heart in the chase by its pneumogastric nerve, and so when we paralyze the pneumogastric nerve with atropine we get an enormous increase in the rate of the heart. Paralyze the pneumogastric of the rabbit, and we get only a feeble effect. I found when you took ordinary city dogs you increase the rate of the heart, but do not increase it nearly as much as you do the hound's heart. It is simply a question of the activity of the pneumogastric nerve in the life of the animal. The slight increase in the activity or power of the heart and the great increase in the rapidity of the heart in a measure account for the rise of the arterial pressure which takes place under the influence of this drug. We will find that the action of this drug upon the circulation gives us a curve something like this [drawing on the board]: a very rapid pulse, great rise of pressure and then, if the dose have been large enough, a fall. I have found, however, that if you cut the spinal cord high up and thus separate nearly the whole vasomotor territory from the upper dominant vaso centre, that atropine will not increase the arterial pressure to any marked extent, although there is an increase of the pulse-rate. This proves that belladonna has an enormous influence upon the vaso-motor centres in the medulla, and we get here one great action of belladonna, namely, that it is a very powerful centric vaso-motor stimulant. Finally the blood-pressure falls. This final fall is the result of paralysis of the vessel walls. When in sufficient amount, atropine paralyzes all non-striated muscle fibres, and hence after atropine poisoning there is always retention of urine, because the bladder is paralyzed by the atropine in the urine lying in the viscus. The secondary fall, then, is partly the outcome of increasing cardiac weakness and partly the outcome of paralysis of the peripheral vessels, probably, also, the vaso-motor centre feels waning power following excessive primary stimulation.

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[1] [illegible]

I have spoken to you, I think, sufficiently at the previous lecture in regard to the action of atropine upon the respiration; I content myself now with simply saying that it acts as a powerful respiratory stimulant. Passing by the nervous system for a moment, for reasons you will appreciate later, let me call your attention to the action of this drug upon peristalsis. Under the influence of belladonna there is at first an increase in the activity of peristalsis, and then a decrease, and finally a paralysis of the intestines. The first increase in the rapidity or extent and power of peristalsis is undoubtedly connected with the action of the drug upon the splanchnic nerve. It seems to follow from the experiments of Pflüger that the splanchnic nerves are the inhibitory nerves of the intestinal tract, and it has been proved by Keuchel that galvanization of a splanchnic nerve in an atropinized animal does not affect peristalsis; in other words, the splanchnic nerves are paralyzed. The nerves of inhibition in the intestines are paralyzed by this drug; as the nerves of inhibition of the heart are paralyzed, and then as the heart muscle is paralyzed and as the bladder muscle is paralyzed, so finally are the intestinal coats paralyzed.

Now, in regard to the action of the drug upon the pupils. The action of this drug upon the pupil is that of a mydriatic. The first point I want to make is that when you put atropine in the eye of the man or animal and dilate the pupil you get an action which is local and not centric. It has been proved abundantly that you can take the humors out of an eye paralyzed with atropine and put them in a second eye and get a second dilatation; and we know, therefore, that this drug atropine dilates the pupil when it is put in the eye by acting locally upon the peripheral nerves or fibres in the eye-ball itself. Of course, we may get dilatation of the pupil by paralysis of the oculo-motor nerve or dilatation of the pupil by stimulation of the antagonist to the oculo-motor, the so-called sympathetic fibres going up with the carotid. It has been proven by several investigators that the oculo-motor nerve is paralyzed by atropine. Galvanize the oculo-motor nerve in the atropinized animal, and you get no result. We have, therefore, dilatation from oculo-motor paralysis; but I think if there be any oculist in the room he will bear me out in asserting that the dilatation of the pupil by this drug is more active than passive, that you can tear and rend exudations by it if these exudations be not too firm. It would seem, therefore, that not only does atropine paralyze the oculo-motor nerve, but that it also stimulates the antagonist of the oculo-motor nerve; this belief is further strengthened by the fact that you can get much wider dilatation from the use of atropine than you get in any ordinary oculo-motor paralysis; moreover, I have put atropine into the eye which was in the condition of oculo-motor paralysis, and seen the drug still further dilate the pupil. I believe, therefore, that the local action of atropine in the eye is twofold, — oculo-motor paralysis, sympathetic irritation. The next point I want to make is that the action of atropine is the same, whether it be given through the circulation or whether it be put in the eye. It is a local action after all. This seems so natural as scarcely to require proving. I cannot go over the experimental evidence to-day. Suffice it to say, that a man came under my care who had been so smashed in a railroad accident that the whole temporal bone had been driven in and all the nerves going to the eye were cut. Under these circumstances I found that giving that man atropine in the leg dilated both pupils, the pupil on the uninjured side, and the pupil which was separated from the centres; and it seems to me, therefore, demonstrated that the action of atropine is a peripheral action even when the atropine is given hypodermically. You can readily see why a study of the pupil in opium-poisoning is no guide to the use of atropine. The opium contracts the pupil centrically; the atropine dilates it peripherally. There is a seeming, but not a real, antagonism in the action of the two drugs; and, therefore, in the case of narcotic poisoning when you are using atropine you are not to select the pupil as a guide to the amount of atropine which may be used. I have seen the pupil widely dilated, and atropine fail to influence the respiratory function. You use the atropine for its effect upon the respiration, and it is scarcely worth while even to look at the pupil.

And now in regard to the action of atropine upon the nervous system. In the first place the symptoms which it develops show at once that this drug has a very strong sympathy or influence upon the cerebral cortex. It is a delirifacient, but it is not a sleep-producer in the proper sense of the term. Albertoni made a series of experiments to determine whether it has relation with the motor zone of the cortex. He exposed the cortex in dogs poisoned with atropine, and found that the ordinary responses to galvanization of the cortical centres came; and we learn that this drug affects the centres of intellection and conscious life, but has little or no influence upon those cerebral centres which are connected with motion.

When we come lower down in the nervous system, we find ourselves in the presence of difficult problems. Many years ago Botkin found that in a frog poisoned with this drug after a certain time there is a general paralysis or muscular relaxation, that if he tied the artery to a leg before giving the poison so that there could be no access to the nerves, that leg retained power long after the other legs were paralyzed. This, of course, could only be explained by the theory that the action of the drug in producing paralysis is peripheral upon muscle or nerve. So Botkin opened the frog's leg and tested the condition of the nerve, and found when he put the poles of the battery upon the muscle it contracted, but when he brought the poles in contact with the nerve there was little or no contraction; and he reached the conclusion, which has since been abundantly confirmed by others, that atropine is a powerful depressant to the motor nerves. It has been proven by the experiments of Meunot and of Bezold and Bloebaum, that the drug also has slight relations with the sensory nerves. Perhaps the most conclusive of these experiments were made by exposing the nerve, and putting on it a weak solution of atropine. It was found under these circumstances that very soon irritation of the nerve above the point of contact failed to produce response in the tributary muscles. For some time after this impulses would reach up toward the centre; but by and by the impulse would fail to reach the centre showing that the drug had at last blocked the afferent pathway and that it has an influence upon the sensory or afferent fibres, although it acts upon those fibres much less powerfully than it does upon the motor fibres. This was supposed to be the end of the problem, until one day Professor Frazer, of Edinburgh, found that some atropinized frogs he had put aside the day before in his laboratory as dead were in a condition of excessive life, every one in tetanus. That led to research, in which it was proven that there is a certain dose of atropine which may be given to the frog which produces complete apparent death, but in which, when the animal is left for a little time, he comes up out of this condition and passes into a state of violent tetanus. Frazer, thinking over the explanation of this, came to this conclusion, that the drug is a violent tetanic poison, acting as does strychnine upon the motor cord, but that so long as there is paralysis of the motor nerve-trunks this condition of stimulation of the nerve centres was masked by the condition of the nerve. No impulse could get out from the surging spinal sea because the channel-ways were blocked, and so the sea surged on until the ways began to be open, and then the raging waters got out and made the violent convulsions. This was a very reasonable theory: Professor Frazer supported it by various experiments bearing on it; so that it was believed to be the correct explanation until Ringer and Murrell challenged it. They found in the first place that there were certain frogs in which the paralysis never became complete, frogs in which the channel-ways remained open all the time, though there was great weakness and yet strychnine-like convulsions did not come until late. They argued if the chocked-up channelways had sufficient permeability to allow a normal impulse and movement to come through, there was sufficient permeability to allow tetanic impulses to come through. So that the fact that there was no tetanus proved that at that time there was no spinal excitement. They further found that if they tied an artery so as to shut off from the poison access to the nerve of a leg and poisoned the frog, that that leg went through exactly the same stages as did this whose nerves had not been protected from the drug. They proved in this way that masking of spinal irritation by paralyses of the nerves cannot be the explanation, of the phenomenon but that both the paralysis and the convulsion must be centric in their origin. Finally, they proved by watching certain frogs that sometimes there is a stage in which the dead frog begins to creep, but is not tetanized, only to become tetanized a little later; therefore, Ringer and Murrell said both paralysis and convulsion must be spinal and must come from one action on the spinal cord, and now I am going to ask you, in order that you may understand this matter, to leave the whole subject of belladonna for a few moments, working our way back to it.

Many years ago a very curious phenomenon was noticed in regard to the action of quinine. It was found that under the influence of quinine there is a condition in which there is complete suspension of reflex activity in the frog, so that when the impulse is sent up an afferent nerve it produces no reactions.

Nothing extraordinary in that; but the extraordinary discovery which was then made was, that if the spinal cord be divided reflex action comes back at once. Now, I know no other possible way of explaining this phenomenon except by the supposition — which to me is more than a supposition, is an established theory — that there is in the brain an inhibitory centre which dominates the motor cord, and that when you give quinine you so stimulate this inhibitory centre that it absolutely arrests action in the spinal cord, and that when you cut the spinal cord you remove the influence of this inhibition and allow the normal reflexes to return. Several other theories have been invented to explain this phenomenon: none of them are proved; all of them are complicated; and I think all are accompanied by fatal defects. I believe, therefore, that there is a centre high up in the dominant region above the spinal cord, and that quinine stops reflex activity by stimulating that centre. Now, let us return to belladonna. The theory of Ringer and Murrell is simply that belladonna paralyzes both sides or both functions of the spinal cord. Suppose, for the purpose of illustration [drawing on the board], we take this yellow line to represent the inhibitory function, the white line the motor function. He says both these lines are paralyzed. You have complete relaxation; but the action of the drug is more permanent on the yellow line than on the white, on the function of depression or inhibition than on the function of motion, and so there comes a time in the restoration of the frog when the function of motion has been restored to the spinal cord, but the function of inhibition has been, as it were, dissected out or removed. Ordinarily, when the impulse comes up to the spinal cord from the periphery, strikes a spinal cell — which we may metaphorically speak of as a bell — ordinarily, then, the impulse has a tendency to run from spinal cell to spinal cell, all through the chime of bells in the spinal cord; but it meets the restraining influence of inhibition and is so confined that only the bell rings that is needed. Atropine takes off the restraining hand of inhibition, and the impulse plays at will up and down the spinal cord ringing the whole chime; and so wild tetanic movements are developed because there is no hand to check them. I believe, therefore, that the theory of Ringer and Murrell is correct.

Again let us travel a little more afield, if you will, to certain experiments of my own during the last few months. You know the problem of chorea in the child; and the problem of the choreic movement has been one concerning which there has been a great deal of discussion and very little light. Some years since I divided the spinal cord high up in a choreic dog below the point of section and found that the movements still went on, and thus demonstrated that the choreic movement may, at least, arise in the spinal cord. I do not mean to say that every choreic movement arises in the spinal cord, but that the choreic movement may arise in the spinal cord. Without occupying more of your time, I am well assured that whilst there may be cortical choreic movements the ordinary choreic movements of childhood are largely spinal. I believe the whole motor tract is affected in the child, but that the motor cells or the spinal cord are especially connected with the choreic movement. As I was thinking over this matter, it occurred to me that when the child attempts to seize the tumbler of water and the hand goes here and there, the reason is that the motor impulse is not arrested at the proper time. We have had a great deal of discussion in our physiological books and in our works on nervous diseases about the motor impulse going to the muscle. Probably, few of us have thought that the arrest of the motor impulse at the right time is as important a part of the physiological process as the original formation of the movement. Why does the muscle in one case go to a certain point and suddenly stop? Because the inhibitory force comes down and shuts off the impulse, so that according to my belief, the inhibitory force is as active — counts for as much — as the originating impulse. The reason the child with St. Vitus dance cannot stop the movement is because its inhibition is weak. It cannot get the arrest quick enough; and the foundation of the choreic movement is, according to this thinking of mine, weakened inhibition. Then I set my wits to work to see how I should test the matter, and I thought of this action of quinine and belladonna. I got a choreic dog, and found that a little quinine thrown into a vein would stop the choreic movement. It stimulated the weakened function of inhibition, and put a hand on the choreic movement. I took another dog and injected atropine into its vein and got this result: inside of a minute the choreic movements were quadrupled by the action of belladonna, and I therefore was emboldened to put it forth as the theory that paralysis or weakness of inhibition is the basis of the choreic movement. Now, that naturally led me, of course, to the study of the action of quinine upon chorea. I have not had enough cases to speak positively; but, certainly, my results indicate that we ought to make further trials of quinine in this respect. My studies have been in all points first upon dogs, second upon human beings. The surgeons at the Veterinary Hospital of the University of Pennsylvania, have told me that they had never cured a case of chorea in the dog in the hospital. We have had seven cases, and five of them cured by quinine. In human chorea, I have seen cure in two very bad cases, one of four years' standing. Each of these cases was so bad that the child could not feed itself. The action of quinine was immediate in checking the movements; and one of the cases was finally, without any other medicine except quinine, cod-liver oil and tonics, absolutely cured. The case of two years' standing went out after six or eight weeks with simply little evidence of choreic movement in one hand. Now, I have no doubt that in those cases quinine did have some action. We have had nine cases in dispensary practice, and six of them cured by quinine in from one to two weeks. The action of quinine seemed to be somewhat temporary unless cod-liver oil and tonics be added. In other words, other remedies such as iron and cod-liver oil often have to be used to assist in permanently removing the choreic tendency. Another thing that astonished me was the amount of quinine these children can take without effect. To the child eight years old, who had had chorea two years, we gave seventeen to twenty-four grains a day for five weeks, and we never had one symptom of quinine action. There was no ringing in the ears, no deafness, no apparent influence at all from the quinine, except the child getting better. I think, therefore, that matters have gone far enough to indicate that we have in quinine a remedy that ought to be tried in chorea, probably acting upon the spinal cord in the manner in which I have spoken.

And now, gentlemen, let us return to the immediate subject of the present lecture, belladonna; and let me give a little summary of the action of atropine. We know, in the first place, that it is a peculiar stimulant of the intellectual cerebral cortex, finally paralyzing the cortex; that it is a respiratory stimulant; that it has certain actions upon the spinal cord; that it paralyzes inhibition in the spinal cord and inhibition of the heart and inhibition in the splanchnic nerves, that is, in the intestines; that it acts as a powerful centric vaso-motor stimulant; that in some way it raises the bodily temperature; and that it produces an efflorescence of the skin. The similarity of the action of this drug to scarlet fever led, on the homeopathic principle, to its use in scarlet fever, especially as a prophylactic. It is hardly necessary to say there is little or no true or close resemblance between the action of the scarlet-fever poison and that of atropine. Many years ago the Professor of the Theory and Practice of Medicine in Jefferson College taught that belladonna is a powerful prophylactic in scarlet fever. Prof. George B. Wood, in the University, taught the opposite. There was a certain boarding-house in which both sets of students boarded. Scarlet fever broke out. Every Jefferson student took belladonna, and every University student let it alone. Many of the Jefferson students took scarlet fever, and not one of the University students got it. Reasoning as many people reason on this circumstance, we would conclude that abstinence from belladonna is a prophylactic in scarlet fever.

Now, gentlemen, we use this drug for various purposes, and all our uses are in strict relation with its physiological action. We employ it to relax spasm, and long before the physiologist worked out the problem, the clinician learned that it best relaxed spasm when he used it locally. In asthma, we give it in cigarettes. If you have a wry neck from sterno-cleido-mastoid spasm, inject the atropine into the belly of the muscle. If you have whooping-cough, give it by atomizer. Wherever you want to relax spasm, you apply it locally, and the reason is not far to seek. It acts not upon the centres, but upon the nerve, and when you bring the belladonna in contact with the nerve at the point of irritation, you relax your spasm, and hence we learn this, that this drug is not a suitable drug in those cases in which the spasm is the outcome of a general stimulation of motor centres. Formerly, belladonna was used as a hypnotic. I was taught when a student that it ranked almost with opium. Knowledge of its physiological action is borne out by the later clinical experience that this drug has no influence as a hypnotic save only in certain cases in which it puts aside spasm or pain or some disturbing influence. Then the drug was used very largely for the relief of pain. In accordance with our knowledge of its physiological action, it is of no value in relieving pain save only by relieving the spasm which produces the pain, except in certain cases as in cancers or in painful ulcers in which you can put it on the spot and affect the peripheral sensory nerves, then you get the action referred to earlier in the lecture.

A use of the drug which is perhaps not altogether appreciated by the profession is for its influence upon the blood-vessels. I want to express my conviction of the value of belladonna in the treatment of sore throats, when given in the dose of five to ten drops of the tincture every two, three or four hours, according to the susceptibility of the case. Whether it acts by impressing the blood-vessels locally or in some specific manner upon the mucous membrane, I do not know. The great value of it for the purpose of impressing the blood-vessels is seen in shock conditions. In the condition which we commonly call shock we have a state which is allied to the syncopal state, but is not the same thing. In the first place, you can kill an animal by a single blow through shock. It has been demonstrated that this occurs through irritation of the pneumogastric nerve. If you hit a man upon the stomach and he falls dead, he falls dead with heart in diastole relaxed from excessive inhibition. If you cut the par vagum of the animal, it is impossible to produce this death by shock. After the first pneumogastric stimulation of a sudden shock, often, no doubt, without this primary state, the one centric feature of shock, you have vaso-motor paralysis. The collapse and fall of temperature are but the garments that clothe over and often conceal the real centric phenomenon of the condition, namely, vaso-motor paralysis. The temperature falls, for reasons I have already explained. When I was a student in the hospitals, we used to have cases of shock in abundance, and we would pour alcohol into them and wonder we got no more effect. It seemed like pouring alcohol into a rat-hole. Alcohol is probably of no value whatever in shock; indeed, I am perfectly sure that a large dose of alcohol in shock puts one nail in the coffin of the patient, and if you want your patients to come out of shock you will be very careful in giving them alcohol. Alcohol stimulates the heart, but it paralyzes rather than stimulates the blood-vessels. It is under these circumstances that atropine becomes a remedy of the great value. Give digitalis, if you please; it helps. Give strychnine; it helps. But the one remedy which we have, which will summon any power there may be in the vaso-motor centre into immediate action, is atropine.

And now may I say to the medical men that the treatment of shock is not the prerogative of the surgeon as some believe? I believe patients sometimes die because we are not quick enough in understanding that this condition is frequently developed as a result of disease and not of injury. Not long ago I was called in consultation in a case of the puerperal variety of confusional insanity. I met the doctor, one of our best practitioners. He said to the husband: "Your wife is a good deal better this morning." As soon as my eye lit on the face, I knew she was dying from shock. The temperature was 95°, and before we could do anything 93°. In confusional insanity, whether after childbirth or surgical operations, or in the form known as delirium tremens, in all this group of insanity there is lack of nerve power as the centre of the condition; and shock or a condition allied to shock is apt to come on suddenly, and you know its presence by this fall of the bodily temperature if you cannot recognize it by your eye. In pneumonias in children, shock is a very common condition. You see it sometimes after severe rheumatism or any severe disease. When I used to see children's diseases more than at present, I noted shock at the time of the crisis or a little later, in a large proportion of severe cases of pneumonia; and under those circumstances I always used to tell the parents to get belladonna or atropine and keep it in the house so that there need be no loss of time in an emergency. When the child's temperature suddenly falls much below the normal, the sweat pours out, and the pulse weakens almost to a thread during the third stage of pneumonia, you know you have vasomotor paralysis; and under these conditions belladonna is the hand that will lift the child up out of the grave.

My hour is more than up and so I must leave the subject at this point. A word before we separate. It is one of the results of the remorseless march of time that that which is to be will be, and that which will be will have been; and now our time has gone, and that which came to me so unexpectedly has passed. My lectures before you are over. I only want to say that among the memories which will seem to me most precious, as crowning a life of labor, will be the picture of your intelligent faces earnestly interested in the little that I have had to say. I thank you from the bottom of my heart for your courtesy and from this time forth shall always claim with you that I have had some little part in the greatness of the Harvard Medical School.

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Original Articles.

IS GERMAN MEASLES (ROTHELN OR RUBELLA) AN INDEPENDENT DISEASE?[1]

BY CHARLES P. PUTNAM, M.D.

MEASLES and scarlet fever have been distinguished from each other only in modern times. West retained even in his edition of 1873, the following: "These two diseases present many points of resemblance; so many, indeed, that they were long supposed to be but varieties of the same malady, and the essential differences between them were not recognized until within the last eighty years.[2] It is, however, on many accounts, important to distinguish between them; for not only are they not attended by the same degree of danger, but this danger arising from dissimilar causes, the treatment they require is, in many respects, different."

Now a great many physicians believe that another eruptive disease ought to be distinguished from both measles and scarlet fever, and the distinction is important for the same reasons.

A suggestive sentence in Evanson and Maunsell, edition of 1838, gives the first intimation I have seen of any division of measles. "An eruption precisely similar in appearance to that of measles is occasionally seen, especially in young infants, and runs through a regular course without catarrhal symptoms. This has been denominated rubeola sine catarrho. It requires no particular treatment, being merely a local affection, but it is generally believed by authors that it does not, like true measles, offer an immunity from future attacks."

German measles, rötheln or rubella, if there is such a disease, is not generally severe in character, but there are reasons, not only of theoretical, but of practical importance, why its differentiation should not be neglected. When we are called to see a child with an eruption, the question at once arises: Is this disease likely to be severe, or is it likely to lead to severe disease in others, and, on the other hand, from what disease will it be likely to give future protection? If we can distinguish between a regular measles and rötheln or German measles, we can answer this question much more satisfactorily. It has often happened to me to be obliged to answer the question in private families, and I will relate an instance which occurred in a large institution for children.

The Superintendent asked what should be done in view of an eruptive disease which had broken out. One child taken sick three or four days earlier had been sent to the City Hospital by another physician, as having measles, and one or two new cases had appeared.[3]

It was a matter of especial importance to the Home at that moment, for a few days later, the anniversary meeting was to be held, and many children and adults were to visit the Home. Besides, a few days later, a large number of the children were to be sent out West to be given in adoption, and both of these plans must be entirely broken up if measles had appeared. The differential diagnosis of the disease was also important on account of the individual children who were to take the disease. Would there not be a risk in sending them, as they were successively attacked, to a hospital where they would be exposed to undoubted measles?

I thought the disease was clearly not measles, but asked one day more before deciding positively. Next morning I advised them to go on with the festival and with the plans for sending the children out West on the theory that the disease was rötheln. Between May 17th and July 26th there were thirty-two cases closely resembling each other. None were sick enough to be in bed. No case was followed by any serious sequelæ. In his zeal to keep children of the same family together, the Superintendent sent off several to the West in the midst of their eruption and I believe that some broke out with the disease and went through with it while on the journey. If I had decided that the disease was measles the work of the Home would have been seriously impeded for a long time.

Each child was sent to the isolating-room as soon as any eruption was noticed, which usually happened at dressing-time or sometimes at meal-time, so that they had from four to twelve hours during which they had not been observed.

Generally the eruption was found over the whole body and almost invariably over the whole trunk. In many instances it grew thicker after admission and this was especially marked on the lower extremities. It generally lasted three or four days. Though in some cases it faded quite rapidly at first, the fading at the end was so gradual that it was hard to say exactly when the eruption disappeared and the skin became quite normal. In two or three cases it seemed almost gone, then freshened up a little and lasted a day or two more. In one case the skin did not seem quite normal until after six, and in one, not till after ten or eleven days, but in these long cases the rash did not continue bright and gave the impression that the skin had acquired a hyperæmic habit.

In each case the post-auricular, and in general, also the cervical glands were enlarged and tender. There was always more or less eruption on the soft palate and fauces, though often very faint. A little cough was noticed in some cases, though not severe in any. Headache was not infrequent, but never severe enough to give any impression of suffering. Moderate malaise was not uncommon. The temperature curves, with certain exceptions, did not go above 101°, and often not above 100°, the morning temperature being a degree or a half a degree lower; but among the thirty-two charts there were a few where it would appear that some other influence had come in, either at the beginning of the disease or at the middle of it, and there was then an exceptional temperature of 104°, 103° or 102°, for a short time. During this time there was no case of measles with the ordinary symptoms, nor any other eruptive disease.[4]

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[1] Read before the Boston Society for Medical Improvement, March [illegible]. [illegible] in Germany, and because it [illegible] German measles in [illegible] used as the English name, [illegible] that has been used, but in this paper I adhere to the original name to avoid any possibility of confusion.

[2] Dating evidently from his first edition.

[3] I am informed that the child that was sent to the City Hospital went on May 15 and returned May 25, 1892. The diagnosis was rotheln. Eruption was gone on the 17th. She appeared perfectly well at the end of five days, stayed in the hospital, however, five days longer; discharged well.

The great majority of writers believe rötheln to be an independent disease, never giving rise to any other disease, nor being derived from any other. It is mainly because a few years ago, in another society, I unexpectedly found myself the only advocate for its independence, that I thought it would be interesting to bring the subject up again. Those who do not recognize rötheln as an independent disease and consider it a mild form of measles, maintain (1) that repeated attacks of measles may occur; (2) that some epidemics are light and some are severe; (3) that in any one epidemic there is great variety in the severity of the attacks, some being so light as hardly to be recognized; and (4) that if the diseases are not identical, they see no diagnostic points by which they can be distinguished.

There is a general impression that measles often attack an individual more than once; but I think this impression is much stronger than is justified by the facts. Many writers speak of one attack of the measles giving immunity from future attacks, and do not even mention that repeated attacks sometimes occur. Those who mention the possibility of repeated attacks almost always say that they are rare.

Baginsky says they seldom occur, although he has observed them a small number of times (*einige Male*), as have also Hennig, Kassovitz, Prunac and others. Hennoch says that the re-occurrence of measles is much over-estimated, and that it is exceptional. Thomas says "extraordinarily unusual." Strümpell and Gerrhardt say that it is of the greatest infrequency, and many others use similar expressions.

My own experience has been the same. Although I have several times seen patients who said they and their friends had had it twice or three times, I have never been so fortunate as to see any one go through two attacks. On the other hand, I am not in the least disposed to deny that repeated attacks have occurred.

Of course those who believe that measles and rötheln are the same disease, have many more cases of repeated measles than those who differentiate between the two. They claim that the so-called rötheln is but a weakened measles, just as varioloid is a weakened variola. If there were but one disease, should we not find attacks varying in all degrees between the weak and the strong types, so that in some cases it would be difficult to say which is which, and yet this is not the case; for unquestionably whether we believe that these attacks must be divided into two diseases, measles and rötheln, or that they are the same disease, now in a severe type, now in a light type, it must be admitted that we can always distinguish this particular light type from the severe, if opportunity is given for a reasonably lengthy observation.

It is certainly true of all epidemics of the contagious diseases that some cases are severe and some cases are light, but this statement, as applied, for instance, to scarlatina, means that with similar symptoms the degree of severity varies very much. Epidemics in measles also vary greatly in severity, but an attack of measles may be exceedingly light and yet not present the picture given by this mooted disease. To believe in its identity, we must say there are (1) light cases of measles which resemble the severe cases closely, except that they are light, and that these light and severe cases run into each other by imperceptible degrees; but (2) that there is also a set of light cases, which differ from the severe cases in so far as they are light, but also in a variety of other ways, and do not run into the severe cases by imperceptible degrees.

The differentists do not necessarily claim to know that rötheln is caused by a different germ (for they do not know what causes either disease), but only that they can distinguish the collection of symptoms to which they give this name, from the collection of symptoms to which they confine the name of measles; and that they can tell beforehand whether the former or latter collection of symptoms will occur, as the result of contagion in another person. The identicists claim that there is no such collection of symptoms by which they can characterize a disease separate from the measles; nor do they confess to be able to tell, if these peculiar symptoms occur, whether they will, by contagion, give rise to the same mild symptoms or to the most severe symptoms of measles.

Must we then adopt this latter view and admit that no differential diagnosis can be made, either because there is but one disease before us, or because, there being perhaps two diseases, there are no diagnostic points by which they can be distinguished? Certainly those of us who have prophesied that one case would be followed by measles of unknown severity and another by an illness sure to be mild, and who have found their prophesies always fulfilled, will not be willing to accept this view.

It has been claimed that the variations and discrepances in the histories of rötheln make it impossible to make a diagnosis, and that the variations in the course of cases of measles make it possible to include all the supposed cases of rötheln under the head of measles. But the variations of rötheln seem to me to be of a non-essential kind, while the similarities are essential. Both rötheln and measles are contagious, but I have not had reason to suspect of any one case of either, that it had come from the other disease. The incubation of rötheln is apparently variable, and the limits are greater than in the case of measles. In most cases (not in all) no prodromal stage has been observed. The first symptom is usually an eruption of small, pinkish spots, which are noticed unexpectedly when a patient happens to come under more close observation than usual, as when he is bathed, when he appears at a meal, etc. Sometimes in an unusually severe case, there is a complaint of discomfort of some slight kind for twenty-four hours or possibly more, and occasionally in looking back, a patient will say that he has had some discomforts for a day before, or has noticed pain and swelling of cervical and post-auricular glands. An attack of the measles may, of course, be very light and the symptoms may be very mild, but the prodromic symptoms almost always bear a very large proportion to the other parts of the disease. A physician is not called to a case of measles to find a large part of the body covered thickly with eruption and yet learn that this was the first notice of its existence that the disease had given.

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[4] [illegible]

The difference between the two diseases as regards the spread of the eruption is very well marked. You are called to a case of rötheln and told that the patient has been examined carefully a short time before and that the eruption was only on the face. But you ask to have the clothing removed and behold it has already covered nearly the whole body. With the measles, the eruption comes on tentatively in the form of isolated papules, which enlarge and coalesce and slowly go down over the body in the course of two or three days.

The color of the eruption of rötheln is rose, that of the eruption of measles is more purplish. In rötheln the papules are smaller and do not have the maculate appearance. Red patches sometimes result, but they seem rather to arise from a sympathetic hyperæmia than from coalescing of separate papules, as in case of measles. In the duration of the eruption, there is also more variation than in measles, for while three days is the usual duration, it sometimes remains visible for a longer time, but the appearance of these cases suggests that the blood-vessels have lost their true size and remain dilated rather than that the eruption is still there.

Rötheln, apparently, also has its light and severe epidemics, for some writers report cases having more severe symptoms and more severe sequelæ than others.

Stone and Davis tell of an epidemic that occurred in an orphan asylum in St. Paul; a double epidemic, rötheln appearing first, but it was soon followed by the genuine measles. Although they found in certain stages that it was difficult, by comparing the eruptions, to distinguish between them, nevertheless, they found the difference between the two diseases, taken as a whole, extremely well marked. Some of the children had both diseases, and the one or the other came first quite indiscriminately.

Variations occur in the different stages of all the eruptive diseases. Undoubtedly, in measles, it occasionally happens that the prodromic symptoms are so slight that they are overlooked. But to say that this fact prevents the differential diagnosis between measles and rötheln without regard to the other marked differences, is as illogical as to say that there is no differential diagnostic value in the short prodromic stage of scarlatina as compared with measles, because measles is sometimes not suspected until six hours before it breaks out.

In measles the fauces are sometimes so much inflamed before the eruption appears that a physician may well be in doubt for a short time whether he has before him an anomalous case of measles with an ill-marked cough, or an anomalous case of scarlatina with an accidental cough, but under such circumstances he does not hesitate to say that the future development will quickly clear up the doubt. And likewise, at any given moment, it is sometimes difficult to say whether a case is an anomalous case of rötheln, or an anomalous case of measles, but the further development makes the differential diagnosis as plain as between scarlatina and measles.

I wish to emphasize the fact that a typical rötheln does not in the least resemble a mild case of measles. A patient's skin may be covered with a brilliant rash, yet this eruption will have come in a flash and will disappear almost as fast after a very short stay, whereas the similar appearance in measles would have come on slowly, have remained longer, and have disappeared by slow degrees.

More is said about the resemblance of rötheln to measles than about its resemblance to scarlatina, but in some cases, for a short period, its resemblance to scarlatina is more striking. Scarlatina usually appears at outset in very fine red points as if, as has been said, red pepper had been sprinkled on the skin, but sometimes these spots are not so very fine and more pink than red, and then the eruption looks quite like rötheln. This resemblance, however, does not last long as the disease develops.

As Henoch has been quoted as being sceptical with regard to the independence of the disease, I quote his words: "My own experience does not justify me in coming to a decision in this question. Although I have here and there seen a couple of children in one family with a disease corresponding to rötheln of the authors, and not infrequently observed cases that left me doubtful about the diagnosis, yet I have never hitherto had an opportunity to observe epidemics or endemics of the kind such as have been described by others. So long as this is the case, I am not able to decide in the favor of the independence of rötheln."

I will add a short account of an epidemic that occurred in a family in December, 1880, and January, 1881.

On Sunday, December 26, 1880, A. L., about seventeen years old, had a slight headache and felt a little hot. After dinner an eruption of pink spots appeared on his face and spread generally over his body. By Monday morning there appeared a red blush, especially on his back and shoulders, which faded out during the day, and on the third day was almost invisible. I took it for an anomalous case of scarlatina, not being, at that time, well acquainted with rötheln, although there was but slight elevation of temperature; and, to his disgust, kept him in his room, though he seemed perfectly well, and though the eruption had faded almost as soon as it appeared, expecting to see the attack followed by desquamation; although I was obliged to confess to the family that I had never known scarlet fever to behave in this way before. This expected event, however, did not occur.

On December 30th, E. L., his sister, about thirteen years old, was found covered with a fine papular eruption, with little or no elevation of temperature, and no constitutional disturbance except a little headache and a slight weakness of the eyes. She was kept in bed from Thursday until Sunday, when the eruption was entirely gone, and she was apparently well. As with all the patients in this group, I kept her in bed, as I was not, at that time, familiar with the peculiarities of the disease. Then, after an interval of eleven days and during the next following month, there appeared eight more cases of precisely similar character.

On January 10th, H. L., was found covered with a fine papular eruption, but had little or no fever, and made no complaint except to swelling of post-auricular and cervical glands. He was in bed for two days when the rash disappeared and he got up entirely well.

On the 12th of January, the mother of the family found herself thickly covered with a similar eruption. During the day before she had noticed that the glands of her neck were tender, and she was slightly hoarse. On the same day at noon, M. L., about eight years of age, on the next day, J. L., and four days later, R. L., eighteen months of age, were attacked; each one was ill two or three days.

M. S., a housemaid, had it on the 26th of January. She had a cold at the time and some cough, nevertheless she was entirely well in three days.

An aunt who had been a constant visitor at the time, had a similar attack, beginning January 19th.

All of these patients had had measles except the two youngest children, and of these two, the elder one had measles a little over a month later, and the youngest has not had it.

To sum up, I believe that rötheln is an independent disease with its own characteristics. Though at a given moment an anomalous case of rötheln may closely resemble an anomalous case of scarlatina or an anomalous case of measles, yet this similarity rapidly disappears. Taken as a whole, rötheln differs from any other disease in its incubation, its prodromes, its invasion, its eruption (and other symptoms of the eruptive stage), its complications, its sequelæ, and finally, in the results of its contagion.

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THE TREATMENT OF SENSITIVE SPINES.[1]

BY ROBERT W. LOVETT, M.D., BOSTON.

I WISH to call to your attention and to speak of the mode of treatment of an affection of the spine, the proper name of which I am unable to give. The condition is manifold, and is surrounded by much neurological obscurity as to pathology, etiology and nomenclature.

To the surgeon it appears as a sensitive and painful condition of the spine, manifested by sensitiveness most often over the spinous processes of the vertebræ, pain in motion and manipulation; and in most of the cases that I have seen it has been associated with a certain amount of general neurasthenia. The painful condition of the spine is evidently not the result of organic disease of the spine or cord, for the patients recover in most instances under proper treatment. On the other hand, with temporizing measures, the condition persists for years, varying but little, and leading generally to a bedridden and helpless condition in the severer cases.

It seems wiser for me not to attempt to speak of this condition by any other term than a sensitiveness of the spine. If I use the name, irritable spine, or any similar one, I may commit myself to some definite neurological theory without being conscious of it; and I wish merely to speak of the condition in its practical surgical aspect.

But in looking over the literature, I have found described, under various names, a condition which in some instances was identical with this and which was classed under the names, spinal concussion, spinal neurasthenia, spinal weakness, spinal irritation, functional disease of the spine, hysterical spinal disease, and the like.

In the cases that I have seen, in most instances it has been possible to trace the beginning of the symptoms to some injury, but in other cases the same symptoms have been present without any traumatic origin; so that it seems to me that the name for this condition should not be one which asserts anything about its causation. The injury causing the trouble was in most cases a fall, more or less severe, jarring the spinal column. In one instance, a railroad accident was the cause, in another, a wrench of the back in playing foot-ball; but in general the spinal sensitiveness was a remote rather than an immediate result of the accident. In other cases it began slowly, perhaps after some exhausting disease, as in one case after typhoid fever.

The symptoms are local and general. Locally, one finds pain and sensitiveness sometimes spread over the whole back, but at most times limited to a certain area over the vertebral column. It may be cervical or it may be confined to the sacrum and coccyx; and a fairly common situation is over the sacro-iliac joints, but in my own experience it has been most often situated in the dorsal or lumbar region. This sensitiveness is to both deep and superficial pressure. It is often sharply localized, and the pain is generally limited also to the area affected. Standing aggravates the pain, as do also riding in a carriage or car and sitting in an uncomfortable chair, so that relief is sought in recumbency. At times, the pain persists during recumbency, but even in these cases it is made worse by sitting, standing or walking.

On examination, one finds in the lighter cases a perfectly flexible spine, but motion may be voluntarily restricted in certain directions on account of the pain caused. In the severer cases the spine may be, and generally is, held quite rigid over the affected area either by voluntary or involuntary muscular effort. This stiffness is a most perplexing matter in the diagnosis at times.

There is no angular deformity such as one finds in Pott's disease, although unnatural attitudes may be assumed on account of the sensitiveness, such as a rounding out of the whole back in the dorsal region or a slight lateral deviation. The connection of lateral curvature and this spinal sensitiveness has been but little referred to. Indeed, this whole condition, so far as I can learn by my reading, has been much neglected from a therapeutic point of view.

The most important local condition has been left to the end, as to the writer's mind it is of the greatest aid in the diagnosis and the chief indication as to proper curative treatment. This condition is muscular weakness, both general and of the spinal muscles. It is to be noted on inspection and by measuring the strength of the muscles of the back by manipulation. This theory of muscular weakness, for which I am indebted to Dr. Bradford, explains the pain on the supposition that in the absence of proper muscular support the body weight comes more upon the posterior spinal ligaments and the fasciæ and aponeuroses of the back than it should, and that this is the immediate and primary cause of the pain. Just as in flat-foot, when first the muscular support gives place to ligamentous support, intolerable pain is to be felt in the ligaments. This does not, and cannot be assumed as the cause of every case of spinal sensitiveness, for it occurs at times in patients with muscles of normal strength, as measured by an apparatus for testing the back muscles. The theory simply serves to explain to the surgeon the cause of most cases and to suggest to him the proper line of treatment.

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[1] Read at the Boston Society for Medical Improvement, Ma[illegible] [illegible]

This theory of insufficient muscular support does not in any way assume that congestion of the affected areas may not be present or that the blood-supply of the spine may not be seriously deranged. It only states the fact that muscular weakness is almost invariably present, that increasing the muscular support in most cases cures the sensitiveness. The condition on this supposition would seem more akin to painful flat-foot than to anything else. It is upon this theory of insufficient muscular support, generally in connection with neurasthenia, that the treatment about to be described is based.

The general condition of these patients is of the utmost importance and significance. In most cases they show marked symptoms of neurasthenia. They are, for the most part, young and middle-aged women of nervous temperament and poor development. They have such symptoms as the globus hystericus, basal headache and a stiffness at the nape of the neck, ovarian tenderness, prickling of the hands and feet, confusion in talking, and the whole class of symptoms grouped as neurasthenic. They may or may not have uterine trouble severe enough to be of account; but their symptoms of spinal sensitiveness are almost invariably worse when they are menstruating than at other times. The general condition is always poor, and, as a rule, the patients are badly nourished. They walk feebly and stiffly, and often they are entirely bedridden.

The diagnosis is generally easy from Pott's disease, which is the condition for which it is very often mistaken. But cases may occur where the diagnosis is impossible for a time.

There is no angular deformity as in Pott's disease. There is, however, extreme sensitiveness of the spine to superficial pressure, which is almost never present in Pott's disease. Flexibility of the spine is the rule; whereas in Pott's disease rigidity is marked. The presence of neurasthenic symptoms would lead one to assume the presence of the less serious disease.

In a word, the disease has no angular deformity, neurasthenia is generally present, the spine is sensitive to the touch, and flexibility is not impaired much except in advanced cases; and advanced cases of Pott's disease always show unmistakable deformity.

To illustrate the difficulty of diagnosis I may mention one case. A young man from another city came under my care last summer who had been under the care of one of the leading orthopedic surgeons of the country. He had diagnosticated Pott's disease two years previously, and had applied a steel back-brace. The young man wore it for a year or so, gradually discontinued it, had a relapse, reapplied it, and on taking it off had another relapse. Seen by a surgeon of national reputation, he was told to throw away the brace and exercise. This brought on much pain; he was crippled and bedridden, and when he came to me could scarcely walk. At this time I believe that a diagnosis was impossible. There was a suggestion of neurasthenia, and I put him to bed and overfed him. He responded at once. I gradually increased the exercise until he took an hour a day. Massage restored the flexibility to the spine and the diagnosis became clear. There was not, and probably never had been, Pott's disease. After nine months he is quite well, rides horseback and dances, and never feels any pain in his back.

The treatment which I wish to describe is not, I fancy, in any way new; but I do not know of any place where one can find it formulated for these cases, and it has in my hands yielded the most satisfactory results.

The severer cases and those in which the general condition is markedly poor should, I believe, be put to bed for some time and treated by the Weir Mitchell plan of rest and feeding. This, it seems to me, is indicated, both as a means of improving the general condition and also to quiet and rest the irritated spinal ligaments by removing the strain from them. The patients are kept entirely recumbent, and are made to use the bed-pan in the more severe cases. They are fed every hour or every two hours, taking in the twenty-four hours eight to fourteen eggs beside milk, beef-tea and meat. They are massaged gently every second day; and after a few days of this treatment, the use of faradic electricity is gradually begun on the day when massage is not given. The back is excessively sensitive, and the current is mildly applied, avoiding at first the sensitive spots. Massage and electricity rapidly diminish the sensitiveness of the spine.

After a continuance of this treatment for days or weeks, according to the general condition of the patient, she is allowed to sit up in an easy chair for five minutes, with the back supported; and then the time is rapidly increased.

At this time one begins upon exercises calculated to develop the erector spinæ muscles. These exercises have in my experience invariably aggravated the pain which is generally much diminished by the recumbency. The exercises prescribed are arch flexions of the spine when sitting; then resistance is offered to backward flexion of the trunk with the arms behind the head; and finally, when the patient is much stronger, she lies on the face and the feet are held while with the arms on the hips she flexes the trunk. It is merely, I believe, a question of prescribing easy motions which cultivate the erector spinæ muscles, and addressing them particularly to the region most affected, whether cervical, dorsal, or lumbar. One of the most successful cases that I have treated in this way was a young woman where the pain and sensitiveness were limited to the sacrum and coccyx; and it required the most intimate knowledge of the Swedish movements on the part of the masseuse to apply them so as to reach the proper muscles.

As the exercises are prescribed the patient is encouraged to walk a little; and if spinal motion is very painful, a supporting brace is allowed, which consists of a steel waist-band and two tempered, steel uprights fastened to shoulder-straps. This is used merely to support the spine until the muscles are able to do so; and is to be regarded as a temporary measure, to be abandoned at the earliest possible moment. The patient is gradually encouraged to do more each day without regard to her sensations, except during menstruation when she is kept in bed.

Personally, I always have cases where there is any question of uterine trouble examined by a gynæcologist, to be sure that no uterine displacement exists, which might cause the backache. The patient is encourged to progress as fast as may be, and to leave invalid ways behind her. The treatment is, in a word, first rest, and then muscular development in connection with the most effective measures addressed to the general condition.

But a great many patients do not need such stringent measures as these, nor, on the other hand, can every one give up entirely for weeks or months; and a treatment which can be pursued at home and which is perfectly suitable for lighter cases must be found. These patients should be encouraged to lie down at least part of the day; even working people can save two or three hours by going to bed early. If possible, they should lie down both morning and afternoon, and should get up late. In short, the same aim of resting the back should be kept in mind as in the severer cases, and this should be accomplished in every way.

In such cases as these I apply the elastic brace almost as a routine treatment; and in one or two of the severer cases I have used a rigid steel back-brace to prevent spinal motion when the sensitiveness was severe, taking it off only for the exercises.

The general condition is most carefully looked after, the bowels are regulated, the appetite is stimulated, and eggs (from six to ten daily) are prescribed, often with a little alcohol. Walking and riding are almost invariably painful; and it is always a question how much of these should be done. It seems best at first, during the period of rest, to limit them as much as possible and to increase them very gradually, laying the chief stress upon exercise directed to the muscles affected.

Many patients cannot afford, or for some reason cannot have, massage and electricity; and yet they do well, only they progress more slowly. If attainable they are, I believe, of the utmost importance. Hot douches to the spine have often been of use in such cases. The exercises are the same as those used in the severer cases; and for the best results the cases should, I believe, be in the hands of some person skilled in massage and Swedish gymnastics. The tendency is certainly to err on the side of encouraging these patients to do too much, to walk too far and to overexercise, and one has to remember continually how great is their disability and how carefully they must be handled.

The brace is gradually discontinued, the amount of exercise increased, and the period of recumbency diminished. It is the same plan of treatment as before — first rest, and then graduated and progressive exercise; and these are no more important than is the general routine of treatment addressed to the general neurasthenia; either alone accomplishes little.

It is hardly necessary to call attention to the fact that a positive diagnosis must be made before this treatment can be successfully carried out. It is just opposite to what one would desire to do in Pott's disease; exercise always increases the pain, and a certainty on the part of the surgeon is necessary to secure the proper morale on the part of the patient.

The treatment, then, may be dismissed as consisting of general measures along with rest to the irritated ligaments, followed by active muscular exercise addressed to the supporting muscles of the spine. Electricity and massage by themselves are to be regarded only as subordinate measures to be used when practicable, and by themselves as affording very incomplete treatment. The need of counter-irritation to the back, and burning with the cautery, is not felt with the above-mentioned measures.

Clinical Department.

A CASE OF EXTRA-UTERINE PREGNANCY.

BY P. E. BAKER, M.D., NEWTONVILLE, MASS.

The patient, twenty-four years of age, was first seen at my office in January of this year, when she complained of pain in the stomach, flatulence, rumbling of flatus in the bowels, weight and soreness in the lower abdomen. She was nervous and anæmic. She had been married five years, and four years ago had had a miscarriage at six months. She had been in ill-health much of the time for years, suffering from backache, vague pelvic pains and constipation. Tonic treatment, including iron, improved her flesh and color. Menstruation was regular until January 28th, when it failed to appear at the proper time. When nearly a week overdue, she began to complain of pain along the rectum when standing, with the feeling that the bowels ought to act; but defecation failed to give the expected relief. There was some tenderness in the left iliac region. The breasts were sore to the touch.

Examination by the vagina showed the uterus enlarged, pushed to the right and somewhat forward and lower than normal. At its left a mass, oval in shape, slightly movable and tender to the touch, could be distinctly outlined. The diagnosis of probable extra-uterine pregnancy was given the patient; and she was charged to remain in bed, as the pain and pressure were so marked when on her feet.

On examination thirteen days later, the mass had enlarged considerably and was felt lower and more behind the uterus. Sensitiveness on vaginal and rectal touch was greatly increased. Meanwhile there had been an irregular flow of dark blood from the uterus. The tumor was thought to be an unruptured tubal gestation, and the patient warned of the danger of hæmorrhage and inflammation, and advised to have the mass removed.

The next day Dr. Wood, of Waltham, saw the case in consultation and concurred in the diagnosis and the necessity for immediate operation. By courtesy of the Waltham Hospital, the patient was at once removed there for operation.

March 17th, the patient was etherized by Dr. Winslow, Drs. Wood and Cutler assisting in the operation. The abdomen was opened by an incision three inches long. No blood was visible upon entering the peritoneum; but in disturbing adhesions at the left of Douglas's fossa, a few drops of dark, extravasated blood were sponged out. A mass the size of a lemon was isolated from the left ovary and rectum, to which it adhered, and delivered through the abdominal wound, the Fallopian tube ligated, and the tumor cut away. The right ovary presented a cyst the size of a walnut, which was dissected away from its bed, and the resulting raw surface closed by sutures of fine silk. The hæmorrhage was insignificant and the shock but slight.

The patient rallied well from the ether, but for three days had a severe bronchitis, with profuse expectoration, at first mucous, later muco-purulent in character, accompanied by cough and pain in the right side. Digitalis was freely given with the nutrient enemata until the moist râles throughout the chest had cleared up and the pulse came down to 50. On the 18th an enema of salts, glycerine and water was given to relieve the distention and slight colicky pain in lower abdomen. Much flatus escaped and large fæcal discharges resulted; and thereafter the bowels were moved by licorice powder.

Convalescence was rapid after the first four days. There was no fever nor untoward symptom aside from the chest disturbance following the anæsthesia. The stitches were removed on the ninth day; the patient sat up in fourteen days, and left the hospital at the end of three weeks. She is now in better health than before for several years.

Dr. F. B. Mallory, of the Harvard Medical School, reported upon the specimen as follows:

"The tumor received formed an oval mass five centimetres long and three centimetres in diameter. From the slightly smaller end hung the fimbriated end of the Fallopian tube. The oval tumor consisted of a thin-walled sac, containing a solid mass of dark clotted blood covered with a very thin membrane. This mass was adherent to the inner wall of the sac at its larger end toward the proximal extremity of the tube over an area two centimetres in diameter. The lining membrane of the sac was smooth, glistening, unstained by blood and apparently extended up over the solid mass at its point of attachment. A probe passed into either end of the Fallopian tube passed directly into the sac. The specimen when received had been cut into, and the sac retracted. In its retracted state it was from one to one and a half millimetres in thickness. Externally the tube and sac were covered with numerous fibrous adhesions. A fragment from the base of the solid mass, at its point of attachment showed on microscopic examination, typical chorion villi in a condition of marked fatty degeneration. No fœtus was found. The case is one of tubal pregnancy, with hæmorrhage into membrane."

This is the second case seen by the writer within six months. The first, diagnosticated in consultation with Dr. Carroll and advised to enter the Waltham Hospital for operation, is No. VI of the series reported by Dr. Worcester in the Journal for February 2, 1893.

I recall a case I treated early in 1885 as an hæmatocele, which I now think was a tubal pregnancy. The case was a long and tedious one, complicated by recurring hæmorrhage and suppuration. I should now prefer to treat such a case by abdominal section. In none of the cases where I have opened the abdomen were the required manipulations easier to perform than in the case here reported.

An early operation, when the symptoms become threatening, clears up many anxious doubts and gives the physician control of the issues at stake as it can be obtained in no other way.

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TREATMENT OF LOSS OF SEXUAL POWER BY LIGATION OF VEINS.

BY ALFRED KING, M.D., PORTLAND, ME.,
Surgeon to Maine General Hospital.

The loss of sexual power, or rather deficient erections of the penis, render so many men miserable mentally and physically, that any new method of treatment promising a radical cure merits investigation and trial.

Three immediate causes of deficient erections may be specified: destruction of the erector muscles, loss of nerve power, and a change in the circulation. The first of these is so rare and so easily determined that it needs only a passing notice. The second cause, loss of nerve power, seems to me to have received more prominence than it deserves, as it is the basis on which almost all treatment is founded. While its force in many cases is undisputed, yet the frequent failure of treatment based upon it leads me to direct attention to the importance of the third cause, that is, a change in the circulation. This change takes place in the veins, especially those which do not pass beneath the pubic arch, or are not acted upon by the erector muscles. Repeated engorgement of the penis renders their calibre larger and, consequently, there is a more rapid escape of blood through them. When, therefore, an erection takes place, it cannot be maintained on account of the escape of blood through these channels. Thus we have the history of a gradual shortening of the duration of erections, and, finally, scarcely none if any, as these veins grow larger.

The remedy for such a condition, especially when far advanced, is not in the use of drugs, but may be brought about speedily and safely by the ligation of some of the larger of these veins.

The following case is given to illustrate this cause and its successful treatment:

Mr. M., aged thirty-five, a laborer of powerful physique, came to me about a year ago with the following history: For several years he had been losing the power of maintaining an erection, during the past year its duration having been so short that sexual intercourse had been rendered impossible. There was a loss of sexual desire and great mental depression. Excessive use or abuse was the cause of this condition.

I gave all possible encouragement to the patient; advised total abstinence from sexual intercourse, cold baths (especially to the spine and external genitals); prescribed bromides, cannabis indica, cantharides, damiana, phosphorus and salts containing it; pushed strychnine as far as it could be borne; gave various tonics; used electricity; and, in short, tried everything which offered any hope of success, but all to no effect so far as producing any stronger erections was concerned.

Careful study of the case convinced me that the immediate cause of the trouble was a physical one, due to a leakage, as it were, or to a too rapid escape of blood from the penis when erected. I, therefore, determined to ligate a couple of the larger subcutaneous veins at the base of the penis and watch the effect.

This was very easily done by the use of cocaine. A vein on each side of the penis was exposed, ligated in two places and severed between the ligatures. A dressing was lightly applied and held in position by a strip of adhesive plaster placed longitudinally. The result was immediate. In less than five minutes after leaving my office he had an erection. That night he was awakened by a powerful erection which made the bandage so painfully tight that he was obliged to jump out of bed onto the cold floor to subdue it. Primary union was prevented by the frequent erections, but the success of the operation was certain.

Two months later he reported himself well, mentally and physically; his sexual appetite had returned, and since the operation, his power of maintaining erections had been as good as ever.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

[illegible] BOWEN, M.D., SECRETARY.

Regular meeting, Monday, March 27, 1893, the President, Dr. C. F. Folsom, in the chair.

Dr. C. P. Putnam read a paper on

IS GERMAN MEASLES (ROTHELN OR RUBELLA) AN INDEPENDENT DISEASE?[1]

Dr. E. G. Cutler: If there remain any doubt in the mind of any person present as to the dissimilarity of these two diseases, I think he ought to be convinced by consulting these charts of temperature passed about. Of the thirty-five cases, there are but two in which the temperature has reached 101°. I should think that was sufficient to stamp the dissimilarity of the two diseases. I do not recall a single instance of measles where the temperature was not elevated. In all of these cases in which there was eruption, if it were measles it seems to me that it is impossible that it could have been otherwise than that many should have shown a very considerable degree of elevation of temperature. The temperature curve is so characteristic of the true form of measles that within two or three days you can be sure of it, and the color and shape of the eruption, the place where it begins, the way it spreads, and the way it terminates are characteristic in measles; and the greater amount of enlargement of the glands, the sequelæ and the absence of any desquamation of any kind are characteristic of the other form. I had at one time a large number of children under my charge; and as one after another was admitted to this institution the history was taken off on a card or in a book, and the number of cases which had had some form of the eruptive diseases was very large. At one time we had an epidemic in this institution of what I considered to be German measles. It ran through quite a large number, and it did not spare quite a number of children who had been reported to have already had the true measles. The proportion was so great that it was not at all likely they had suffered a second attack of the true measles. I do not remember ever to have distinguished the odor in German measles that many authors speak of as so characteristic in true measles. It is quite distinct in true measles. I remember to have had three children at one time with true measles in quite a large room, and the odor was so characteristic that it was noticed by several persons who were uninstructed. At the time I had this number of German measles in the institution there was nothing characteristic about the odor.

Dr. Harold Williams: I am sorry to say that my view is a different one from that of the gentlemen who have spoken. Before I came here I looked up the literature of the subject. I have been struck with the different descriptions given by different authors. I never have seen a case in which I could satisfy myself that rubella was a distinct disease. I have seen severe and mild measles, but never have seen a case I could say was a different disease from the mild type of measles. Now, it is a question of great practical importance whether these diseases are different. If we have measles we adopt certain very marked precautions against the dissemination of the disease, but if we speak of rubella people think it is a very mild affair and do not half carry out preventative precautions and the disease is spread. It [illegible] that, practically, we are dealing simply with [illegible] measles, and that it is unwise to make this distinction until more differentiated, or a distinct bacillus is found.

Dr. E. M. Buckingham: The reason that there is any question as to the identity or non-identity of these classes of diseases is probably that the so-called German measles is so mild in character that it is not well observed. The patients are not sick enough to be followed up in private practice, and they rarely get into the hospitals. It is only when such favorable opportunities occur as Dr. Putnam has had that we can conveniently study them.

We are said to have two diseases, each with an incubation and a prodromal stage, but in rubella the incubation is larger and the prodromal stage milder. Now, first, the incubation differs in measles as it does in scarlet fever; and, second, the beginning of a mild prodromal stage is likely to be overlooked, leading to the assumption of too much time as being occupied by the incubation. This is a matter of scientific consequence though seldom of practical use in making a diagnosis.

The prodromal stage in these two diseases is the same, with the difference that one is more severe than the other. That is the view that is generally taken. I had the opportunity through the kindness of Dr. Putnam, to see some of the cases he reports, and although, as he says, the prodromal stage was very slight yet there was a certain amount of catarrhal symptoms in some of them. I have also been shown other cases in which there were a set of catarrhal symptoms likely to be overlooked because of their mildness. The eruption is much alike in these two diseases. As for the eruptive stage being so mild that the case is only accidentally discovered, I have discovered scarlet fever in that same way, where, nevertheless, no one would have doubted the diagnosis. A difference in the color of the eruption is sometimes made much of as a distinguishing mark. Last summer there was an epidemic of *something* that came to the City Hospital, and I had the opportunity to point out again and again, that in a given case you would have one shade of color on one day and another on the following day. It is a fact that the color of measles does vary from day to day. Something has been said about the crescentic form of the eruption in measles as distinguishing it from German measles. I have seen two children in the same house at the same time, one with crescentic eruption and the other without, and I have seen this more than once. I am not yet prepared to speak of the size of the papules, another supposed diagnostic mark. The gland which is so generally spoken of as being found enlarged in German measles — perhaps I am not a good authority because I cannot make the diagnosis — I have seen enlarged in many cases of severe measles, and, on the other hand, this gland as it has been pointed out to me in many cases of so-called German measles, has been so small that I could with difficulty find it.

Failure of desquamation is another point relied on to prove the existence of a second disease. There are, however, a considerable number of cases of measles that would be accepted by any one as such, in which the desquamation is so slight that unless you take special pains to find it you will miss it.

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[1] See page [illegible] of the Journal.

Dr. Putnam spoke of the hospital where they had both diseases at once. I do not see really why if one child had a light and then a severe case and another child a severe and then a light one, why that could not have been reinfection. The statement has been made that we must have two diseases because we do have two attacks. It seems that that is assuming more than we know, and it does not account for third attacks. The third attack is not particularly uncommon. You can have second attacks of scarlet fever, and of small-pox, perhaps of syphilis. I do not see why measles should not have second attacks also.

With reference to the matter of one attack protecting against another, or one of these diseases protecting against another disease, Dr. Townsend read a paper a few years ago in which he reported the results of observations where he had unusual opportunities to observe, which seemed to show that these very mild attacks do, to some extent, protect against the more severe cases, and *vice versa.*

Furthermore, I have myself seen very severe cases and very light cases of measles in the same room at the same time, one with severe and one without appreciable catarrhal symptoms.

I think that there are two arguments in favor of distinct diseases worthy of respect. One is the argument Dr. Putnam has made, that we do have epidemics in which all the cases are very light. It seems to me that when the question of there being a separate disease came up, and some one observed an epidemic in which all his cases were very light he was warranted in asking: "Is it the same disease?" and in trying to learn to make a diagnosis. That was a scientific thing to do. Years have passed, and it does not seem to me the question has been answered. Still the fact that epidemics confined entirely to light cases do exist is certainly suggestive of there being possibly two diseases; but on the other hand, it is not an unknown thing to have epidemics of other diseases which are different from each other. We do not always know the reason, but some epidemics of typhoid are more severe than other epidemics. I think the same thing is true of the whole list of contagious diseases.

There is another argument which might be offered, and that is that the majority of physicians do believe in the non-identity of these two diseases. I think that where you find a mass of intelligent men deciding on any question in their own profession, even if their reasoning is not sufficiently clear to be expressed in words, yet that the mere fact that they have a strong impression tending in one direction, as there seems to be an impression of the non-identity of these two diseases,—I think that that is an argument we have to respect; but it does not prove to my mind that they are right. It seems to me, on the whole, that the weight of argument at present is the other way; and certainly, although I am open to conviction, I cannot see that it has been proved that there are two diseases. I suppose the question may be settled in the future by the bacteriologists.

I wish Dr. Putnam would tell us how in an individual case to make the diagnosis.

Dr. H. Jackson: I think the charts which Dr. Putnam has shown us are extremely interesting. It would certainly be rare to observe 35 cases of measles in so few of which there was any rise of temperature. In one or two cases the temperature rose to 100°. In another case the temperature was on a single day 104°, but it was in the middle of the attack, so it seems to me as if the temperature must have been due to some other cause. But more interesting to me than the temperature charts was the absence of prodromal symptoms in these cases. This winter there have been a good many cases of measles, and I have been interested in noting the prolonged and often marked prodromal symptoms which preceded a very mild case of measles, notably two cases that I have in mind. The children were quite sick for three days. On the first day high temperature, less on the second and third days, and on the fourth day the full measles eruption. In one case there was no fever after the appearance of the eruption; so that the cases I have seen this winter have been mild as far as the eruptive stage and subsequent course went, but the prodromal stage in all was quite as marked as in severe cases. Also the temperature of the prodromal stage is peculiar, the temperature being high on the first day or two, and on the second or third days much less high, the temperature often being normal on the second day.

Dr. Putnam spoke of enlargement of the glands in two of his cases in private practice. I should like to ask whether any observations were made as to this point in the cases in the institution. It is spoken of by Osler as quite marked in German measles. He is very strong in his feeling that German measles is a distinct disease. He speaks of the color of the eruption, the glands, the longer course of the existence of the eruptive stage in rubella than in measles and then of its being more common in adults.

Dr. Abbott said that he fully agreed with Dr. Putnam that measles and rötheln are distinct diseases. He well remembered the first case he ever saw, that of a man, many years ago, who consulted him as physician to out-patients at the Massachusetts General Hospital. The patient had walked to the hospital with the eruption of German measles fully developed on him. This had led him to seek advice, the constitutional symptoms being insignificant.

Since that time he had occasionally met with cases; and in some instances the diagnosis was puzzling and not to be confidently made out at the first interview. He had lately seen two cases, the patients being sisters, who had had measles in earlier life. In this instance the disease was communicated from one to the other. Neither of them required any constitutional treatment. In both of them, on each side of the neck, was a chain of small, enlarged glands, from the size of a small pea up to that of a cherry-stone; concerning which an attempt has recently been made to regard it as a pathognomonic sign of rötheln as distinguished from measles.

As to the possibility of measles occurring three times in the same individual, discussed by Dr. Putnam, he could say from personal experience that it may happen. In a family which he had attended for years he had treated three sisters for three attacks of measles, one communicating the disease to the others in each instance. The last attack was several years since, and was extremely light, with very little eruption. The catarrhal symptoms, however, were marked, and the source of the infection was positively determined. In conclusion, Dr. Abbott asked if Dr. Putnam had noticed in all his cases the chain of enlarged cervical glands which he had spoken of.

Dr. C. W. Townsend: I have been very much interested in Dr. Putnam's cases, that at first sight seem to be very conclusive of the existence of rötheln. I was surprised, however, at his statement that there were no degrees between rötheln and measles, — that there were no cases that seemed half-way between the two. I think that that is a very erroneous statement, as is shown by the examination of most epidemics. The epidemic Dr. Buckingham referred to, an account of which I published, I examined with special reference to the subject of rötheln. There were 76 cases of undoubted measles, some of them of the most severe type; and at the same time with those of severe type there were some of the mild type; and a great many of the mild type were exactly like the cases described as rötheln. The prodromal stage was absent in a good many of these cases. Out of 66 where this prodromal stage was carefully noted, in 17 it was twenty-four hours or less. In eight or ten of these I believe nothing was noticed before the eruption. The catarrhal symptoms were extremely mild in many of the cases; little or no conjunctivitis in some; fever very slight. In one case, on the second day of the eruption, the temperature was 99.4°. On the third day, though the eruption was quite thick, the temperature was 100.4°; and the child also had had measles before. Another case still more striking was one I had seen two years before, in an epidemic where nearly all the cases were of the severe type. In this case the child, who had had measles before and was exposed to measles at this time, developed an eruption without any previous symptoms at all, and the eruption lasted only two days. The spots were of light pale pink color, and were not confluent. The color, I think, depends a good deal on the intensity of the eruption; and the confluence also depends on that.

Just before I came here to-night a medical student brought his brother to my office for me to make the diagnosis of measles. I promptly took him out of my office, but I saw him long enough to see that he had conjunctivitis, that he had apparently a measles eruption on his face, and the glands of his neck were swollen. He had had measles five years before, had been exposed to measles lately in Cambridge. He is feeling a little poorly, but had no symptoms before the rash appeared this morning. Temperature 100.4°. It seems to me that was a typical case of rötheln. Yet it arose from exposure to measles. We see all degrees between that case and the severe case of measles; and even the typical cases of rötheln, so-called, are not so different from the severe measles as mild scarlet fever differs from severe scarlet fever or mild typhoid fever from severe typhoid fever.

As to the enlarged glands and sore throat which are said to be characteristic of rötheln. In that epidemic where I made special note of this point the enlargement of the glands was a very varying factor. It occurred in the mild case and also in the severe case. There seemed to be no rule about it. In other words, we have all grades between typical rötheln and typical measles.

Now, as we cannot make the diagnosis from a single case — I think Dr. Putnam would admit that; even Strümpell admits that you cannot make the diagnosis very often from one case — and the chief faith in the separate existence of rötheln is founded on the fact that previous attacks of measles give no protection — the question comes how many second attacks can we have in an epidemic. There was a small epidemic at the McLean Asylum in Somerville at the same time I was studying this epidemic in Boston, occurring in ten adults who had had measles before. Measles at that time was common in Somerville. I went out and saw some of the cases, one a medical student who found the eruption coming on without any prodromal symptoms while he was in Boston. He had enlarged glands in his neck and groin; but, instead of a mild eruption like the ordinary eruption of rötheln, it was a confluent and crescentic eruption like measles. He had a temperature of 102°. The other cases were more or less severe like measles or rötheln. Now we might say this was an epidemic of rötheln as they all had measles before, or an epidemic of measles with an unusually large proportion of second attacks; but the question is where are we going to draw the line. Suppose only five of these cases had had measles before, we should then be more inclined towards the diagnosis of measles. It seems to me this almost brings the question down to a *reductio ad absurdum*. I do not mean to say that I do not believe that rötheln exists. I simply see no proof of its existence, and I should like very much to hear Dr. Putnam give us some definite way in which we can distinguish the disease.

Dr. Putnam: About the discrepancies in the description of the disease. It should be remembered that if discrepancies exist in so-called rötheln, and rötheln is a part of measles, it shows there are many more discrepancies when we take measles together, if measles includes both. There are variations in all diseases. I compared to-day two accounts of measles by different writers, and they sounded very different from each other. I believe that the essential points show similarity.

Answering Drs. Buckingham and Townsend, who say they have seen cases of undoubted measles come on where the first thing discovered was the eruption, and where the patients could give no history of prodromic symptoms of any moment, I can only say that I have not had this experience. I have lately had a mild case of measles where the eruption was so slight that it appeared only in a few spots on the skin, but the prodromic symptoms were well-marked. I have never seen a case of measles which went over the whole body in the course of a day. Measles is generally set down in the books as taking three days to go over the body. I never saw one that swept over the body in a few hours. Dr. Buckingham has seen a scarlatina where the eruption was the first thing discovered. But it is well known that in scarlet fever the prodromal stage is markedly short, whereas in measles it is markedly long.

I want to say a word about the gradations from what are spoken of as these very mild cases called rubella, and the more severe cases of measles as Dr. Townsend spoke of them, as if cases of rötheln were always like mild cases of measles or that they were always mild cases. In rötheln, the whole body, or a large part of it, may be a brilliant red, and yet the symptoms are mild. In measles, that is never the case as far as I know. When measles is light the eruption is light.

As to desquamation, I don't think much of that. I think the desquamation of measles can be avoided by keeping the patient's skin clean. I have patients with these eruptive diseases washed twice a day, and the desquamation in all of them is reduced to a minimum. I cannot say I have seen any desquamation in rötheln, but often do not see it in measles and do not say anything about it.

Dr. Abbott has reported a case of measles occurring three times, but it seems to me the fact that it is recorded shows it is a rare occurrence. I should be glad if any member would tell us what personal experience he has of having seen measles occur twice in the same patient. I think it would be a very small number. I think very few of us can report any considerable number of these cases.

All the cases in this institution had enlarged glands. But I do not lay any stress on that because though more marked in rötheln they also occur in measles.

I stated that these two types of disease did not run into each other, and I cannot agree with Dr. Townsend that they do so; and I do not see how we can avoid thinking possibly some of those cases were German measles that occurred in that epidemic in the North End. It so happens that of these particular cases in this institution, the first case that was taken was sent to the hospital for measles. But I was convinced that these cases were not going to put the children in bed or give them any serious bronchial catarrh or any other serious symptoms, and the event proved that I was right. The same question has come up several times in private practice where there were two or three children, and I have said to people: this second one will have regular measles, or this other one will not have an illness which need be taken much into consideration.

I do not admit that I cannot make the diagnosis, and I am not willing to admit what Dr. Townsend says, that the chief refuge of the differentists is that measles does not protect from the other. I think there is no doubt that measles does occur more than once. The cases which Dr. Jeffries gave were very striking cases as relapses.

Is it possible that you should have thirty-two cases in an institution containing some hundred children where none of them had any prodromic symptoms that could be discovered except one, that no one should have had a confluent rash, that not one should have had a cough worth mentioning, or that they should be taken to have their photographs when they had been sick, and taken on a journey to the West, and some take it on the way and get well on the journey?

Dr. R. W. Lovett read a paper on

THE TREATMENT OF FUNCTIONAL AFFECTIONS OF THE SPINE (IRRITABLE SPINE).[2]

Dr. G. L. Walton: I have been very much interested in Dr. Lovett's paper. He strikes at the root of the matter in recognizing irritable spine as a symptom of neurasthenia, rather than a disease in itself. His general line of treatment is consistent with this theory. The various local remedies it has been the custom to try, such as ether-spray, hot bags, ice-bags, the cautery and iodine generally prove only temporarily useful, and it is satisfactory to have a methodical line of treatment laid out which reaches the underlying cause. Whether the symptom can be entirely explained by Dr. Bradford's theory seems to me rather doubtful. The pain in many of these cases persists even when the recumbent position is maintained, which would militate against the supposition that stretching of ligaments should be regarded an important factor in these cases at least, though the dragging pain sometimes experienced may be due to this cause. Hyperæsthesia is a common symptom, also a feeling as if the back were broken in two, a "goneness," a crawling, a grating pain, a coldness, and various other anomalous sensations, all of which may be fairly attributed to cerebral irritability rather than to a local condition. I have seen patients with such sensitive backs that the mildest application of electricity in any form would produce fainting. This can hardly be regarded as anything else than a cerebral condition.

Dr. P. C. Knapp: I have listened with much interest to Dr. Lovett's paper. I must admit that I can hardly agree with the views which he has advanced. He has described a condition which is familiar to every neurologist. I do not, however, agree with him in the symptomatology of it. A neurasthenic spine, in my experience, is not attended with that muscular rigidity of which he speaks. You get that in a certain number of the traumatic cases; but where you get the muscular rigidity it is not a true neurasthenic spine, but more of a traumatic lumbago. Furthermore, the theory which Dr. Bradford has suggested as an explanation of this pain I do not think is tenable. In the most pronounced cases of weakness of the muscles of the back, especially in the various forms of atrophy of the spinal muscles, we do not get this pain in the back. The true tenderness of the neurasthenic spine seems to me to be precisely analogous to the tenderness we get in other regions — the tenderness which is not uncommon above or below the clavicles, in the epigastrium, beneath the breasts in women, or the very familiar ovarian tenderness which is so common in hysterical subjects, and for which in times past gynæcologists have done a great deal in the way of interference, with unfortunately very little practical benefit; it is a referred pain of central origin and not due to a local lesion, and therefore I do not believe that in the true neurasthenic cases the use of the spinal brace is advisable. In the traumatic cases, where there is muscular strain the brace may often be of service. In all cases, the important thing is the general treatment, and in addition to the general treatment there is a method of treatment which Dr. Lovett has not mentioned which certainly is of the greatest benefit — the application of the galvanic current to the spine, beginning with a very mild current. In the very severe forms of neurasthenia it is necessary to put the patient in bed and to carry out Weir Mitchell's treatment to its fullest degree, but in the milder cases and in many of the cases we see in hospital practice that often becomes impracticable. The women have to keep about doing their work, and in those cases I have found that galvanism has been of the very greatest benefit.

Dr. E. G. Brackett: I would like to bear testimony to the success that certainly attends this form of treatment in a certain class of cases that Dr. Lovett has described. There certainly are very many cases which come under the head he has described, and which are attended by the symptoms he has described, which are benefited very markedly by the line of treatment he has carried out. I have had the opportunity of seeing quite a number in the last four or five years, and have followed out very much the same line of treatment, and I think it does give some of the most satisfactory results that I have seen. There is a class of cases which he has described, and I think he has very wisely said that he should not give it any particular name — anything more than irritable spine. They are attended with neurasthenic symptoms. Perhaps I have been inclined to look at them a little more as due to local symptoms of a general neurasthenia rather

[2] See page [illegible] of the Journal.

than general muscular weakness, but they differ from the cases usually called neurasthenic spine, and undoubtedly require rather a different treatment than when the neurasthenic symptoms are extreme and the local less so. Most of these cases I have seen have been practically invalids for one to three years, and in that length of time there has come on a condition of chronic invalidism in which the inhibitory power of the patient has been almost entirely lost, and they have given up practically to their disease. In the treatment, it seems to me that muscular development is only a part. It is a good deal to regulate the life of a person who has lost nearly all power to practically care for themselves, as the healthy, well-regulated person should do. These are, by this method of treatment, practically put into a healthy routine; put into a way of improving their general condition. It is done by first regulating their life for them, and later allowing them to take up the reins as before they were ill; and, finally, their condition returns to health practically.

Dr. Goldthwait: I have seen comparatively few cases of this sort, but I recall three very distinctly in which exactly this condition was present; and in each one of these cases there was a slight deviation of the spine and a very marked stoop-shoulder, to be explained, I think, in large part by lack of tone of the muscles and ligaments. Each of the three cases was treated in much the same manner as outlined by Dr. Lovett: two were kept in bed a few weeks, and the other was put on to exercises immediately; the symptoms very quickly disappeared. I should disagree with Dr. Knapp as to the wearing of the brace, as I think that some form of back support is advantageous. A good many of the spines are so irritable that patients on assuming the erect position complain of so much pain that they cannot go about. Some light apparatus gives them the support they need, and they are enabled to get into the open air and get the desired exercise. No doubt the cases would get well under galvanism and rest in bed, but the convalescence would be much prolonged, and I think the course of the disease is very much shortened by the application of some form of brace that allows the patient to be about.

Dr. W. E. Webber: There are one or two points I think might be added. In regard to causation, I have found some cases where flat-foot has caused pain in the back and a condition similar to that described by Dr. Lovett, and by removing that, the trouble in the back has been relieved. I have one case in particular, in mind, in which the plates were omitted and the pain in the back returned. On resuming the use of the plates the pain in the back disappeared again. In addition to the remedies already mentioned, I have found a good deal of advantage in many cases from dry cups. I have used the rest in bed, feeding and galvanism and massage, and I think gymnastics is to be commended. I think Dr. Lovett did not mention one of the causes — lateral curvature of the spine, which is, perhaps, not a cause of the irritable spine, but one of the results of the muscular weakness, and in remedying that by gymnastics and exercise and by proper means, the pain has been relieved as well as the spine straightened.

Dr. Lovett: With regard to muscular rigidity in non-traumatic cases, I have said repeatedly that there has been a very decided rigidity of the muscles in cases where there has been no traumatism. I recall a case I saw lately in a girl of twenty years, where the trouble came on without any cause whatever. The rigidity of the spine was extreme, not perfectly stiff, but very marked, so much so that the young woman who gave the Swedish movement, said she never had seen anybody so completely tied up in every direction, but with three months of Swedish movement she has become flexible in every way.

EXHIBITION OF PATHOLOGICAL SPECIMENS.

Dr. W. T. Councilman: The first case which I shall show is a very remarkable and inexplicable case of injury of the heart and lungs from violence. These specimens which consist of the heart, a portion of the right lung and of the right kidney, were taken from a strong, heavily-built man, thirty-two years old. He was cleaning the snow from a roof, and fell to the ground, a distance of about thirty feet. A large amount of snow fell with him, and it was not ascertained whether he fell on any prominent hard object on the ground. He was brought into the hospital unconscious. He partly recovered from his unconsciousness and showed symptoms which were thought to indicate cerebral injury. He died after forty-eight hours; and at the autopsy the following condition was found:

There were some old cicatrices in the brain, the result of old injury. They were found in the temporal and in the parietal lobe on the left side. They had nothing to do with his symptoms. On opening the thorax there was evidence of extensive sub-pleural hæmorrhage, more particularly on the right side. There were a few adhesions between the right lung and the pleura along its posterior border. The entire anterior and lateral portions were free from adhesions. Along the posterior part of the lower lobe of the right lung, the pleura was elevated and a large amount of blood was found beneath it. On cutting through this, there was a distinct laceration of the lung substance with an intact pleura, the lacerated portion of the lung and the lung tissue all around it, being infiltrated with blood. The laceration of the lung was irregular and about seven centimetres long. The hæmorrhage from the lung at this place had dissected up the pleura, extending to the root of the lung. Beneath the parietal pleura the hæmorrhage extended up to the apex of the cavity and into the posterior mediastinum and even to a slight extent, beneath the pleura of the left lung. Apart from the hæmorrhage into the lung, its tissues seemed absolutely intact, and on microscopic examination, no lesions were found in it. The case was apparently one of hæmorrhage and laceration of tissue in a perfectly normal lung. In the abdominal cavity there was an extensive hæmorrhage beneath the posterior peritoneum, which extended from the diaphragm into the pelvis. There was a great quantity of blood beneath the peritoneum. The source of the hæmorrhage is the right kidney. As you can see, there are a number of fractures in it. Most of these fractures are small and extend at short intervals across the kidney. The other portion of the kidney which was preserved for another purpose, had another very much larger and deeper fracture extending completely across it, and from this the most of the hæmorrhage probably came. The heart also presents interesting lesions. It is of the ordinary size, and looking at it from without, there appears to be no lesions, save a hæmorrhage, which is visible beneath the pericardium in the region of the left auricle. On examining the interior of the heart we find in the right auricle, just above the valve, there is a distinct rupture of the endocardium. On examination you can see a torn, irregular slit of about one and one-half centimetres long, which extends for a short distance into the myocardium. This is clearly the source of the hæmorrhage which appears on the outside. A large thrombus was adherent over this fracture. A portion of this thrombus had washed away during life and there was an embolus filling up the artery of the left kidney, producing a complete infarction of this. The thorax was intact. There was no fracture of the ribs, nor of the vertebræ, nor of any of the bones of the body. There had been a little vomiting of blood shortly after he came in, and a good deal of blood was aspirated into the other lung. It is almost impossible to understand how such extensive injury as we have had here, could take place without any injury to the osseous structures of the thorax. The cases in which we have injury to the lungs are usually accompanied with fracture of the ribs. We have, however, a certain number of cases reported in which various injuries of the lung, pneumonia, and, in some cases, gangrene, have followed on severe blows of the chest, apparently without any injury to the thorax wall. A careful search here shows that there had been no previous aneurism of the pulmonary artery. It is probable that the hæmorrhage came from the ruptured lung. It could hardly be supposed that the hæmorrhage could have been the primary lesion and have produced the rupture of the lung, because at the place where the rupture has taken place, close beneath the surface of the pleura, the single arteries are not large enough to have produced by rupture, a tearing apart of the pulmonary tissue. The injury to the heart is fully as inexplicable as that of the lung. How was it possible to have this tear in the endocardium produced? The fracture of the kidney is not very uncommon, and we can very readily see how it may take place.

The next specimen is a heart which shows an interesting lesion which is due to diseases of the coronary arteries. This case comes from an individual who died at the age of eighty. He had previously enjoyed good health, but latterly had had several very severe attacks, one of which terminated in his death. The two layers of the pericardium were found tightly adherent over the apex of the left ventricle. The left ventricle, as you can see, is quite large. Its general cavity is enlarged, and the wall shows a decided increase in thickness. A great part of the enlargement of the ventricle is due to an almost perfectly circumscribed dilatation in the apex of the ventricle. This large cavity in the apex of the ventricle was almost filled with laminated clot and represents a perfectly typical aneurism. On cutting through its wall we find that the muscular substance of the heart at this point has entirely disappeared, and its place is taken by fibrous tissue. This extends over all the wall of the aneurism and into the surrounding cardiac tissue on all sides. In some other places, close beneath the endocardium, we also find some of this fibrous myocarditis. The arteries of the body generally, with the exception of a few, especially the renal artery of the left side, were comparatively intact. An interesting condition is seen in one of the coronary arteries, and to this, it is almost certain, that the aneurism is due. The artery which is affected in this case is the descending branch of the left coronary artery. Of the two coronary arteries, the left is probably the most often diseased, and the disease is generally more common in this descending branch than in any of the other branches.

The artery, as you see, is greatly thickened. There are a few patches of calcification here and there, and the lumen is almost entirely occluded. We now know that that condition of the myocardium, which we call fibrous myocarditis, is due directly to these lesions of the coronary arteries. There is an interference with the circulation of the heart over the area supplied by the diseased artery. A necrosis of the tissue is brought about. This necrotic tissue disappears and its place is taken by fibrous tissue. This gives way to the pressure of the blood within the heart and we have a cardiac aneurism.

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MAINE MEDICAL ASSOCIATION.

FORTY-FIRST ANNUAL MEETING, PORTLAND, JUNE 14-16, 1893.

THE Association met, as usual for a number of years, in the Common Council Chamber, City Building, and was called to order, at 10 o'clock, A. M., Tuesday, June 14th, by the President, **PROF. ALFRED MITCHELL**, of Brunswick.

Prayer was offered by the **REV. W. S. AYRES**.

The Treasurer's report showed a cash balance of $1,198.66 — an excellent showing, considering the fact that during the past two years over $800 have been paid out in litigation over the Medical Registration Bill.

DR. G. A. PUDOR, of Portland, read a paper on

DERMAL MEDICATION.

The points emphasized were the use of fats in preference to mineral oils, as a basis for ointments when penetration of the medicament was desired, and the application of powders by a spoon instead of the usual pledget of cotton or the puff-ball.

DR. S. P. WARREN called attention to the uniformly good results following the use of icthyol ointment, one drachm to one ounce of lanoline or cosmoline, in facial erysipelas.

DR. J. L. HERSOM, of Portland, read a paper upon

DIABETES MELLITUS,

laying special stress upon nervous conditions as causes, and citing illustrative cases.

In the discussion, **DR. S. C. GORDON**, of Portland, took positive ground against an exclusive diet, except that he excluded potatoes absolutely, because of their tendency to produce flatulence. Saratoga chips were considered the least objectionable form of this vegetable. He did not believe in starving diabetic patients, and would forbid as food only such articles as they could not digest. Among drugs his choice was arseniate of iron.

DR. H. T. TWITCHELL, of Portland, mentioned syphilis as a cause of the disease.

The essayist, in closing the discussion, said, in response to a question, that in her experience the disease was most infrequent in children, but more rapidly fatal.

The following were elected to membership: Drs. H. J. Patterson, Portland; John Z. Shedd, North Conway; S. B. Overlock, Steuben; A. R. Smith, Freeport; Ch. C. Larrabee, Gouldsboro; R. S. Gove, Biddeford; John S. Fogg, Biddeford; G. M. Elliot, Brunswick; J. D. Cochrane, Saco; F. I. Brown, South Portland; J. L. Fortier, Waterville.

Reports were received from the Boards of Visitors to the Portland School for Medical Instruction and the Maine Insane Hospital.

The latter stated that the present over-crowded condition of the hospital, from the failure of past legislatures to give the needed relief by necessary appropriation for a new hospital, was an imposition upon the institution, an outrage upon the patients and a disgrace to the State. The greatest capacity of the institution is, at the most, 550 patients; yet it is burdened with over 700. The report concludes: "We believe it to be the duty of every good citizen, and the especial duty of every member of this Society, to so cultivate public opinion that another legislature will not dare to longer leave this matter in such disreputable condition."

AFTERNOON SESSION.

New members were elected as follows: Drs. J. W. Conedian, Lewiston; F. L. Davis, Biddeford; J. A. Randall, Old Orchard; Wm. H. Bradford, Portland; W. D. Williamson, Gorham, N. H.; F. N. Whittier, Brunswick; George W. Weeks, Cornish; Owen P. Smith, Portland.

Delegates from other State societies were introduced and invited to participate in the discussions of the meeting. There were present Dr. Jas. F. Noyes, of Providence, R. I., and Dr. Hayden, of Connecticut.

The President, **Prof. Alfred Mitchell**, of Brunswick, then delivered the Annual Address, treating the question of

THE VALUE OF READING AS A SOURCE OF PROFESSIONAL INFORMATION.

The address was a most admirable presentation of the value, to the professional man, of the habit of daily systematic reading of standard authors in medicine and surgery, as an indispensable supplement to any course of clinical instruction or professional experience. Especially was this practice commended to those who, having passed to the middle and later years of professional life, look with almost envious and regretful eyes upon the broadened educational systems which are arranged for those who are to come after us. In no other way can we better adjust ourselves to the disadvantage which attends the former lack of special college training, laboratory instruction, the longer period of study, the graded system and the written examinations, or the inability, from whatever cause, to again undertake the curriculum of the student.

The speaker disclaimed any argument for mere bookishness, but urged that close familiarity obtained by studious association with the best professional literature was inseparable from the best equipment for professional work. It offered the best method of anticipating emergencies, and preserved us from the danger of lapsing from studious habits.

In accordance with the prescribed custom of the Association, reference was made to the state of the profession, and certain recommendations were offered. Most important was a suggestion that the Association should increase the value of its membership by some system of special requirements or professional examinations, and later this was referred to a special Committee for report at the next annual meeting; the Committee consisting of Drs. L. W. Pendleton, Chas. D. Smith, and Wm. Lawrence Dana, of Portland.

Dr. I. T. Dana, of Portland, spoke upon

THE SEQUELÆ OF PNEUMONIA,

inclining to the view that all phthisis, as well as chronic pleuritis, was essentially tubercular, the dormant germ only awaiting the proper preparation of the soil by such acute disease to begin its development.

Dr. A. K. P. Meserve, of Portland, thought these cases did not originate by the pneumonia, but were the outcome of predisposition. In his experience, pneumonia, although a not uncommon disease, was not commonly followed by phthisis.

Dr. C. G. Adams insisted upon the contagiousness of phthisis, and agreed with Dr. Dana. No communicable disease can arise except from contagion.

Dr. O. St. C. O'Brien, of Rockport, Mass , thought if this theory were true it would do away with our accepted views upon heredity, as in the case of syphilis.

EVENING SESSION.

Dr. Chas. Mabry, of North Vassalboro, was elected to membership.

All of this session was devoted to the discussion of

APPENDICITIS,

and brought out an unusually large attendance.

A paper by **Dr. S. H. Weeks** presented the various indications for operation, and the technique.

Dr. Alfred King detailed some contra-indications for operation, arising from the condition of the patient or his surroundings or the limitations of his attendant in the way of practical experience.

Dr. A. K. P. Meserve, presented a report of several cases treated without operation, resulting in complete restoration to health. The plan of treatment was that formerly regarded as the only one admissible, — perfect rest, liquid food, opiates, counter-irritation and catharsis induced by enema.

Dr. S. C. Gordon in speaking upon "operation during the intervals," reiterated his well-known views upon the desirability of treating the peritonitis by salines, and when recovery has been secured to remove the cause and results of the inflammatory action. He could find no justification in always proceeding upon the assumption that to remove the cause is to cure the disease. In peritonitis from appendicitis this is conspicuously untrue, and by operation we only add new elements of danger, from more shock and sepsis, to the disease from which the patient is already suffering. He cited eight cases operated upon within the past year, during the intervals of attack, with uniformly perfect recovery.

Dr. J. A. Donovan, of Lewiston, questioned the efficacy of Dr. Gordon's plan, and thought if adhered to in cases of suppurative appendicitis we should have many fatal cases.

Dr. Gordon said he would always first try salines, even if pus did exist. If after thorough trial of this plan the elevation of temperature persisted, or it rose after once falling, he should operate; but when he could, he preferred operating during the intervals as giving the best results.

Dr. N. M. Marshall thought he had lost patients by waiting for the action of salines.

Dr. Meserve, in reply to a query, said he had used salines not for depletive effects but simply to unload the bowels.

SECOND DAY. — MORNING SESSION.

Dr. J. E. Tuell, of East Machias, read a paper reporting some surgical cases illustrating the

WORK REQUIRED OF THE COUNTRY DOCTOR.

It was valuable as showing what could be done, and what must be done by the man who cannot at any time summon the help he wishes.

Dr. C. A. Peaslee, of Wiscasset, made an interesting report of his visit as a delegate to the meeting of the Massachusetts Medical Society of 1893.

Dr. Chas. D. Smith, of Portland, presented a paper upon

THE SIGNIFICANCE OF HÆMATURIA,

mainly clinical in character, and dealing with differential diagnosis. A point insisted upon was, that too much value should not be placed upon so-called typical cell elements in determining by microscopical examination the source of the hæmorrhage. It is often impossible to distinguish between deep urethral and vaginal cells, between the latter and superficial vesical cells. Transitional cells are often misleading, and the typical caudate cell from the renal pelvis depicted in books is rarely seen. The physician who sends urine for clinical examination, is supposed to desire information; for this reason he should give the examiner all facts bearing upon the case. Few do this, and wonder that diagnosis cannot be made from examination of urine alone.

Dr. S. W. Pendleton, of Portland, reported cases of hæmaturia from use of chloral hydrate, from malarial poisoning and another following *la grippe*. In the latter, coagula in the bladder were prevented by injection of pepsin in dilute hydrochloric acid.

Dr. S. P. Warren, of Portland, reported a case of hæmaturia which was checked by simple lavage of the bladder. A few weeks later death occurred, and the cause of hæmorrhage proved to be carcinoma of the bladder.

Dr. J. A. Donovan, of Lewiston, read a paper on

SEPTIC POISONING: A FATAL CASE,

of interest to members, because it detailed the progress of the fatal illness of Dr. Orren A. Horr, of Lewiston, an ex-president of the Association and member of the State Board of Health. Dr. Horr died in one week after receiving a needle wound at an autopsy upon a man who died as a result of alcoholism. A curious commentary upon theory and practice was the fact that after wounding himself he gave the cut no further attention than to suck it for a moment, and then bind it up in a fragment of cloth torn from the sheet which had enveloped the body for forty-eight hours.

Drs. Geo. P. Emmons, of Lewiston, and Daniel Driscoll, of Centre Sidney, were elected to membership.

AFTERNOON SESSION.

Dr. A. P. Richmond, of Dover, was introduced as a delegate from the New Hampshire Medical Society.

The annual election of officers resulted as follows: President, Dr. J. A. Donovan, Lewiston. First Vice-President, Dr. A. E. Besse, Waterville. Second Vice-President, Dr. O. H. Merrill, Corinna. Treasurer, Dr. Aug. S. Thayer, Portland. Corresponding Secretary, Dr. G. A. Wheeler, Castine. Board of Censors; Drs. C. A. Ring, Portland; M. B. Cobb, Biddeford; J. L. M. Willis, Eliot; F. J. Robinson, Fairfield; A. G. Young, Augusta. Committee on Publication: The Secretary, *ex-officio;* Drs. W. L. Dana, Portland; A. H. Burbank, Yarmouth; J. H. Neal, Sanford; W. T. Goodale, Saco. Business Committee: Drs. J. F. Thompson and W. B. Moulton, Portland.

Dr. F. H. Gerrish, of Portland, presented a paper upon

THE TREATMENT OF PROSTATIC HYPERTROPHY,

accompanied by an improved device for permanent drainage after suprapubic cystostomy. The paper was a plea for "the establishment of a permanent fistula in the bladder above the pubes, — suprapubic cystotomy," in place of the more serious operation of prostatectomy. The advantages claimed were: "It puts the inflamed organ at rest, gives a ready opportunity for cleansing and treating the diseased mucosa, frees the patient from pain, and removes the danger of extension of the inflammation to the kidneys."

The apparatus consists of a metal plate, with rubber-ring shield and a globular chamber (fitting over the aperture), from the lower portion of which the urine, as fast as it exudes, is conducted away by a flexible tube to a convenient receptacle. The plate is secured by broad body bands.

Dr. Alfred King thought that sepsis too frequently followed the removal of the prostate. He had found an advantage in the use of a glass syphon-tube after the operation described by Dr. Gerrish.

Dr. S. C. Gordon said he had no doubt the procedure of opening the bladder to relieve prostatic trouble would be rapidly adopted. For stone, the suprapubic operation was the coming one. In an obstinate cystitis he would operate early.

Dr. B. B Foster, of Portland, suggested the advisability under certain circumstances of making two operations instead of completing the opening at one sitting. His plan was first to make incision down to the bladder, secure union of the vesical to the abdominal wall, and enter the bladder after an interval of several days.

Dr. Gerrish thought the condition of most patients demanded immediate relief, and had seen no ill effects from completing the operation at once.

Dr. Addison S. Thayer, of Portland, called the attention of the members to the advantages of hypodermatic injections of saline solution, over transfusion of blood, in cases of hæmorrhage.

Dr. Alfred King, necrologist, reported the deaths during the year of Dr. Henry M. Harlow, for many years Superintendent of the Maine Insane Hospital at Augusta; Dr. D. N. Skinner, of Auburn; Dr. S. A. Nash, of North Berwick; Dr. C. E. Webster, of Portland; and Dr. Orren A. Horr, of Lewiston; and presented for publication biographical notices of each.

EVENING SESSION.

This was devoted to the Annual Oration by Dr. Samuel J. Bassford, of Biddeford, upon the subject of

AIDS TO SUCCESS IN MEDICINE.

These were considered under the several topics: The influence exerted by observation of the success or failure of others, the assistance of intelligent and honorable consultations, the stimulus of association with medical societies, the advantages to be gained by familiarity with carefully selected medical literature.

Following the oration, the members of the Association, the visiting delegates and their ladies, were entertained at a reception tendered by the physicians of Portland.

THIRD DAY. — CLOSING SESSION.

The Association met at 10 o'clock, A. M., and was called to order by **Dr. J. L. Horr**, of Westbrook, first Vice-President.

As usual, the closing hours were devoted to the sweeping up of odds and ends of unfinished business.

The Board of Censors made its final report making the assignments for the year, and fixing the date and place of the next annual meeting, as follows:

Orator: Dr. H. H. Smith, Machias. Visitors to Maine Insane Hospital: Drs. C. A. Ring, Portland; W. T. Goodale, Saco; C. D. Hill, Bethel. Visitors to Portland School for Medical Instruction: Drs. M. C. Wedgwood, Lewiston; G. M. Elliott, Brunswick. Visitor to Medical School of Maine (two years): Dr. A. K. P. Meserve, Portland. Necrologist: Dr. Alfred King, Portland.

The next annual meeting will be held in Portland on the second Wednesday, Thursday and Friday in June, 1894.

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Recent Literature.

Third Biennial Report of Vital Statistics of Minnesota, for the years 1890, 1891. Minneapolis, 1893.

Very few new States have advanced so much in the matter of registration of vital statistics in the course of five years as the State of Minnesota. Much of the creditable work in this direction is due to the energetic and persevering registrar of vital statistics, Dr. C. N. Hewitt.

From this report it appears that the number of living births in the State in the census year 1890 was 32,202; and the deaths in the same year were 14,492, in a population of 1,301,826. These figures indicate a birth-rate of 24.76 per 1,000 and a death-rate of 11.13 per 1,000, the birth-rate being more than twice as great as the death-rate.

The statistics for five years were as follows:

	Births.	*Deaths.*
1887	28.015	13.010
1888	33.191	15.018
1889	31.587	14.807
1890	32.202	14.492
1891	34.107	14.714

The deaths from infectious diseases in 1891 were as follows: measles 136, scarlet fever 205, whooping-cough 224, diphtheria 720, typhoid fever 534, influenza 204, diarrhœa of children 1,126, tuberculosis of the lungs 1,268, pneumonia 897.

Traitement chirurgical des Affections inflammatoires et néoplastiques de l'Utérus et de ses Annexes — Hystérectomie abdominale et vaginale — La Castration totale par le Vagin. Par E. Doyen (de Reims). Paris, 1893.

The object of this brochure of one hundred and twenty pages is evidently to bring more prominently than heretofore before the profession the author's views of and experiences in the operations of vaginal hysterectomy and complete castration by the vagina, not only in the treatment of neoplasms of the uterus and ovaries, but also of inflammatory affections of these organs. It is his rule when both appendages are diseased to remove the uterus and tubes and ovaries by the vagina. This he has done eighty-nine times where other surgeons would have performed cœliotomies.

For neoplasms he practises both abdominal and vaginal hysterectomy, and uses clamps for the broad ligaments in both operations. Some very good drawings illustrate both methods. The book is an interesting one, though we imagine few surgeons would agree with the author in his views.

Ventilation and Heating. By John S. Billings, A.M., M.D., LL.D., etc. Pp. 500. New York: *The Engineering Record.* 1893.

Dr. Billings's new work contains much of the substance of his former excellent treatise of 1884, corrected and amplified and brought up to date. It is, however, substantially a new work, with numerous illustrations of recent practice. It will be found especially valuable as a hand-book and work of reference for boards of health, physicians, engineers, school authorities, and all persons who are or should be interested in this important subject. Technical expressions have been avoided as far as possible, and only simple formulas employed.

Of the twenty chapters contained in the work the following are some of the topics: The composition and properties of the atmosphere; carbonic acid; moisture and its relations to ventilation; quantity of air necessary for ventilation; the forces concerned in ventilation; examination and testing of ventilation (this is an especially practical chapter, and details the newer and more convenient methods in use for examining the quality of the air of inhabited apartments); methods of heating; sources of air-supply; foul-air shafts; ventilation of mines; ventilation of hospitals, public buildings, theatres, churches, schools, dwellings, tunnels, ships, prisons, etc.

The chapters on hospitals, schools and public buildings are especially useful and instructive, and like all parts of the book are fully illustrated.

On Snake-Poison: Its Action and its Antidote. By A. Mueller, M.D. Sydney: L. Bruck. 1893.

This book represents the study and experience of an Australian practitioner, extending over thirty-five years. The author likewise reviews the work of others on this subject. He holds that all of the snake-poisons exert their action by "depressing and more or less suspending the function of the motor nerve-centres throughout the body," and further that strychine is the antidote above all others, but it must be administered subcutaneously and in sufficient quantity. The writer gives an outline of fifty cases in which it was used in Australia, and notes of eight cases where it was used by R. P. Banergie, B.A., India. The Indian cases required more strychine than the Australian. Two of the former were given as much as three grains of strychine within a few days. The writer condemns the use of alcohol.

The Structures in the Mesosalpinx: Their Normal and Pathological Anatomy. By J. W. Ballantyne, M.D., and J. D. Williams, M.D. Edinburgh, 1893.

This little pamphlet contains the results of the examination of the mesosalpinx and the structures lying in it from two hundred and twenty broad ligaments. It comprises both the gross anatomy and pathology, and the histology, and is a valuable contribution to our literature of the subject.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JULY 13, 1893.

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EHRLICH'S URINE TEST FOR TYPHOID FEVER.

GEORGE M. BERINGER[1] has made a series of experiments to discover to what extent various substances are likely to interfere in this reaction; especially those which from internal or external administration are apt to appear in the urine, or are known to be normal or abnormal constituents. In the experiments one-per-cent. aqueous solutions were used where the solubility would permit, otherwise saturated solutions.

In applying the test, the author used the contact method, and the following modification recommended by Dr. Simon of the Johns Hopkins Hospital: "Solution 1, a saturated solution of sulphanilic acid in five-per-cent. hydrochloric acid; solution 2, a five-per-cent. solution of sodium nitrite; forty cubic centimetres of solution 1 is mixed with one cubic centimetre of solution 2, and an equal amount of urine is added and mixed. One cubic centimetre of ammonia is now carefully run down the side of the test-tube; at the junction of the two liquids there will be observed a ring of the characteristic color varying from an eosine rose to a deep garnet red."

Neutral liquids, such as alcohol, methyl alcohol, acetone, aldehyde, paraldehyde, ether, chloroform and turpentine were found to have no effect. The mineral acids and their salts, and organic acids such as lactic, oxalic, acetic, tartaric and citric acid and their salts, also gave no reaction. Salicylates and benzoates gave an orange-colored reaction, the line having a distinct green tint.

The following alkaloids and neutral principles gave also no reaction: quinine, strychnine, cinchonine, cinchonidine, morphine, codeine, cocaine, atropine, caffeine, salicin, piperine, propylamine and phenacetine.

Upon adding a few drops of a one-per-cent. antipyrine solution to the mixed reagents, there is produced at once the well-known green coloration produced by this substance with nitrites. The supernatant ammonia assumes a yellow color, separated sharply from the green solution by a brilliant red line.

Urea, uric acid, glucose and saccharose were all found to have no effect. Albumin gave an orange to a red line, depending on the amount present; two drops of a one-per-cent. solution gave a reddish orange reaction, which became a distinct red on increasing the amount of albumin. While pepsine gave but a green line, the addition of a very small quantity of peptone resulted in the production of a distinctly pale red line. The most minute quantities of phenol and creasote gave a dark red at once, and a single drop of a one-per-cent. phenol solution gave a reaction identical with that obtained from typhoid urine. Sulpho-carbolates of sodium and zinc gave a pale eosine red line, gradually darkening. Beta-naphthol gave a brilliant magenta color and resorcin a dark reddish-brown at once. Thymol and eugenol likewise produced the red line. Gallic acid and pyrogallol produce a dark red, the entire layer of ammonia quickly assuming the same color. With tannic acid the reaction is peculiar. The mixed test solutions assume an orange coloration and the ammonia becomes red, a green-colored line sharply marking the separation.

The author, in accord with others, questions the claims that have been put forth for the value of this test. While the absence of the reaction may indicate the absence of typhoid, the presence of the reaction does not warrant the diagnosis of typhoid unless supported by other evidence, as many of the substances producing the reaction, notably phenol and peptone, may be present in the urine from other causes.

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THE CERTIFICATION OF REGISTERING THERMOMETERS.

THE Thermometric Bureau of the Observatory of Yale University has continued during the last year (1892–93) its comparisons of clinical thermometers and the issuance of certificates. According to the report of the Bureau, just received, only a small percentage of the instruments sold are sent for certification. Those sent for this purpose by the manufacturers are probably carefully selected, and, therefore, more reliable than the average of those sold without certification. Nevertheless, twenty-five, fifty and even seventy-five per cent. of those thus sent are sometimes rejected, and this not without these rejected instruments receiving double the care and time required by the large majority of those to which certificates are accorded.

The cost of certification adds a large percentage to the manufacturers' prices, hence, when he has succeeded in continuously producing, for a season, instruments with few and uniform corrections, the manufacturer is tempted to point to these conditions as justifying his customers in accepting his instruments without other certification than his own. The Bureau has noticed, however, in cases of this sort which have come under its observation that apparently the workman, when he no longer has occasion to expect his work to be traversed by a disinterested authority, soon relaxes his efforts at an accuracy which is hardly yet fully appreciated by the ultimate consumer, and his instruments, when they come to it from his customers, are not quite up to the standard maintained when he was continuously, or at short intervals submitting them to such tests. Possibly, the Bureau suggests, the workman is not making due allowance for his changing standards.

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[1] American Journal of Pharmacy, 1892, page 559.

The Bureau concludes its report by again calling attention to some points in the construction of registering clinical thermometers, frequently overlooked by the makers and users of these instruments, for the details of which we refer those interested in this matter — one of some little importance to medical men — to the report itself.

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THE UNITED STATES MAILS A PARTNER OF EVIL QUACKS.

A valued correspondent writes us the following in regard to the above subject:

> "I received a pamphlet the other day which, under the pretext of showing the recipient how he could be cured of the effects of self-abuse (by applying to some central office for remedies), gave an illustrated list of the effects of such practices, which included every physiological function or condition from respiration up and down.
>
> "Believing that the circulation of such matter is far more demoralizing than a postal distribution of lottery tickets, I enclosed the pamphlet to the Postmaster-General and asked if the Post-Office Department could not put a stop to it.
>
> "I received the within courteous reply a few days later. It would seem as though the leading medical journals and medical societies might unite in pressing the demands of the Department for legislation upon Congress, and strengthen its hand. Do you not feel inclined to take up the work in the *Medical and Surgical Journal*, asking your contemporaries to join you?"

> Dear Sir: — I have the honor to acknowledge the receipt of your letter, submitting to me a pamphlet received by you through the mails.
>
> The Department has frequently submitted such pamphlets to United States attorneys for prosecution, but has been unable to obtain any action whatever, or conviction of the parties mailing such publications. The attention of past Congresses has also been called to the matter, and bills introduced with the view of enabling the Postmaster-General to refuse the admission of such matter to the mails; but as yet they have failed to become laws. It is hoped that some action will be taken at the next session of Congress, which will relieve the mails of these obnoxious pamphlets. Very respectfully,
>
> Frank H. Jones, *First Assistant Postmaster-General.*

The Journal shares the sentiments expressed by this correspondent, and would be glad at any time to aid in strengthening the hands of the Post-Office Department in its efforts to rid the mails of such a pestilential nuisance. We fear, however, that with the silver and tariff questions to the front there is small chance in the next Congress for the mere moralities.

MEDICAL NOTES.

Vacancies in the Army Medical Corps. — There are at present five vacancies in the United States Army Medical Corps, to be filled at the next examination.

A New Biennial Prize. — M. Frederic Chevallier has bequeathed to the French Academy of Medicine a sum which will afford a prize of six thousand francs, to be given every two years to the author of the best work on phthisis and its treatment.

Cholera. — Reports from Cairo show that the cholera, which appeared in Mecca June 9th, is increasing, there being over 200 deaths daily. In Southern France there have been 704 deaths since May, 138 deaths having occurred in Marseilles in the last four weeks.

Influenza.—The New York State Board of Health reports a yielding in the epidemic of influenza, which caused during the last few months an increase of about 500 deaths a month over the average.

The End of Medical Graduates. — The following from the *Medical Age* has been extensively circulated in the medical journals, and, as might be expected, has been used as a text by British journals to instruct their readers in the condition of things over here. "The writer traced after graduation 100 of his friends, especially in the first five years, and found that 75 had to resort to other employment; 23 received a salary either additional to practice or separate therefrom; 15 became proprietors of drug stores; 3 were insurance agents; 4 'loaned money'; 1 sold real estate; 1 was an agent for drugs; 1 an agent for books; 1 dealt in patent medicines; 2 were farmers; 1 a manufacturer; 2 gave massage treatment; 1 sawed wood, and subsequently suicided; 12 gave up in disgust, and 1 never tried to practice at all — 29 graduates only in 100 devoted themselves to medicine, of whom 11 associated themselves with other practitioners, and in some cases succeeded to their practice."

Medical Gallantry. — The following shows the warmth of style of medical commencement parts prevailing farther South. No longer can the medical student be called lacking in grace and courtesy. "To the grand old city of Baltimore we must bid adieu, and to her daughters fair, for none more fair than they. (Yes, they are fair and, 'fairer than that word,' of wondrous virtues.) Sometimes 'from their eyes we do receive fair speechless message.' With us these gentle people's wishes are commands and their words law, for 'ingenious Fancy, never better pleased than when employed to accommodate the fair;' and they give us for our pains a 'world of sighs.' 'The wide world is not ignorant of their worth, for the four winds blow in, from every coast, renowned suitors,' who for many years have considered the Monumental City as the home of beautiful women. To all these we lingeringly say good-bye."

THE HARVEY TERCENTENARY. — On June 21st, the Master and Fellows of Gonville and Caius College, Cambridge, commemorated the tercentenary of William Harvey's admission to the college, by a dinner to about 130 leading physicians and scientists. A number of interesting relics and early works of Harvey were shown. The guests included the Harveian orators of the Royal College of Physicians. Speeches were made by the President of the College, Rev. B. H. Drury, M.A., Sir James Paget, Dr. Clifford Allbutt, Sir Andrew Clark, Professor Gairdner and Mr. Huxley.

A PASTEUR INSTITUTE IN THE HIMALAYAS. — A Pasteur Institute is to be established in the Punjab Himalayas for the care and study of hydrophobia. Its benefits are to be open to the whole of India, by arrangements to convey patients free of charge, when necessary, from any part of India to the Institute.

OBSTETRICAL HABITS.— Dr. Scheel, former head of the Maternity Hospital at Nancy, states that in his observation of cases of repeated childbirth, the interval between deliveries becomes shorter on the average as the number of deliveries is greater. In any one woman the same presentation occurs in 91.7 per cent. of all deliveries. The same presentation and position of the child at every delivery of a woman occurred in 51.6 per cent. of the cases. The ratio of occiput left anterior in all of a woman's deliveries, to a position of occiput right posterior was 5.07 to 1; the ratio of similar positions in all cases observed was only 2.1 to 1.

A TRADE-PRESS CONGRESS. — Among the innumerable congresses to be held in Chicago during the World's Fair, there is announced one of the trade papers. Among the questions to be discussed are the following: "What should be our relation to advertising agents?" and "What is the result of our experiences with sample copies?"

EXCISION OF AN HYDATID CYST OF THE LUNG. — Delagénière reports the following case: A woman seized with intense pain in the left side of the chest, was found to have considerable effusion in the left pleura. Puncture gave issue to a greenish puriform liquid. On incision, the lung was found adherent to the thoracic wall; the incision was carried several centimetres through lardaceous tissue bounding a cavity; this was freely opened and drained; on the following days fragments of hydatid cyst were discharged. A solution of sublimate was injected several times, but there being no improvement in the patient's condition, a large opening in the chest wall was made, twelve centimetres of the seventh and eighth ribs, and ten centimetres of the sixth, being resected; the cyst, which formed a cavity of the size of a man's fist, was then easily stripped away. The result was a complete cure.

"LONGINGS" OF PREGNANT WOMEN. — From a study of over three hundred cases, Giles, of the London Obstetrical Society, divides the healthy "longings" of pregnancy into three classes: those due to desire for something to check the sense of nausea, those which express the physiological desire for certain kinds of food, and those due in many cases to an auto-suggestion prompted by popular belief. The frequency of longing decreases as the number of conceptions increases.

A NEW SOURCE FOR CATGUT. — Dr. Dario Vigezzi, in *La Médecine Moderne*, describes a new source for animal ligatures. He proposes to use the many long tendons of dogs' tails as his source. After cutting off the tails high up and dissecting the tendons, he subjects them to a carbolic or corrosive preparation for forty-eight hours. He has used them for sutures in enterorrhaphy and on the stomach with success. Its advantages are said to be greater strength and slower absorption than are found in catgut.

NEW ENGLAND.

PUBLIC BATHS. — During the last month, 134,686 men and 25,085 women made use of the public baths of Boston, a total of 159,771, as compared with 248,847 in June, 1892. The decrease was owing to the cooler weather this year. The following are the numbers at the different houses:

Males. — At Craigie Bridge, 21,622; Malden bridge, 8,443; Dover Street bridge, 11,434; L Street, 21,334; Charles River bridge, 19,367; Maverick Street, 7,245; Mt. Washington Avenue, 8,851; Border Street, 8,467; West Boston, 19,670; Commercial Point, 1,015.

Females. — Commercial Point, 1,896; Chelsea bridge, 1,155; Malden bridge, 1,237; Dover Street, 2,522; M Street, 4,560; Border Street, 4,594; Charles River bridge, 9,121.

MASSACHUSETTS GENERAL HOSPITAL. — By the will of the late Abbot Lawrence, the Massachusetts General Hospital receives a bequest of ten thousand dollars for the establishment of free beds.

A CASE OF SMALL-POX AT NEW HAVEN. — A case of small-pox is reported from New Haven, Conn., having arrived on a schooner from Brunswick, Ga.

NEW YORK.

IMPROVED CROTON WATER. — It is gratifying to learn from the reports of the chemists of the Board of Health that the Croton Water is now in a purer condition than has been the case for many years. Nitrates have entirely disappeared from it, and it contains only trifling impurities which are the result of decayed vegetable matter. These, moreover, are constantly diminishing. This satisfactory result is said to be due in part to the heavy rainfall during the past four months, and in part to the removal of long-standing nuisances from the water-sheds of the Croton.

CABLE CAR ACCIDENTS. — Since the cable cars have been running on Broadway two persons have been killed by them. The first was a lad nine or ten years old, who was run over. The second was a man by the name of Stapleton, who was knocked down by a cable car on June 30th. He was taken in an ambulance to the New York Hospital, where he was pronounced to be suffering from a *slight contusion of the* *knee*, and discharged. The next day, however, he was found dead in his room, and the Coroner's jury which investigated the case rendered a verdict, founded on the results of an autopsy made by Deputy Coroner Weston, that the deceased came to his death by being crushed between two Broadway cars, which resulted in the fracture of five ribs and of one of the cervical vertebræ.

Electric Car Accidents. — Since the introduction of the trolley system in the street railways of Brooklyn there have been a very large number of accidents (many of them fatal), and so numerous have these become of late that the Board of Aldermen have felt called upon to establish a set of strict regulations for the running of the cars.

Jumping from Brooklyn Bridge. — On July 3d a young Irishman by the name of Dennis McCarty, while in a state of intoxication, leaped from the Brooklyn bridge. He remained under water for a considerable time, and when he arose to the surface was picked up by a passing tug-boat. He was taken to Chambers Street Hospital, where it was found that he had been seriously injured. He appears to have struck the water on his right side, which was severely contused, while two of the ribs were broken. Within a day or two pleurisy developed, and it was feared that pneumonia would also result. McCarty is the fourteenth person that has jumped from the bridge.

Mortality. — Owing, no doubt, to the comparatively cool weather, the health of the city continues to be remarkably good. During the week ending July 1st the number of deaths reported was 702, which is no less than 178 below the average for the corresponding week of the past five years. During the week the number of births reported was 1,010, an excess of births over deaths of 317. There were only two cases and two deaths of typhus fever during the week, the smallest number since the outbreak of typhus commenced at the beginning of the winter. Since the 30th of November there have been reported in all 489 cases, with 208 deaths, a mortality of 42.5 per cent.

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Miscellany.

MEDICAL WITNESSES AND EXPERT TESTIMONY.

Judge Hammond, of the Superior Court, at the twenty-fifth anniversary of the Cambridge Society for Medical Improvement held at the Hotel Vendome, Boston, Monday evening, June 26th, made the following pointed remarks: "The medical expert has been a poor representative of the medical profession, because of his inability to serve as a good witness. A physician's knowledge of man is very different from the knowledge of a layman; and it is very difficult to present this knowledge so that a layman can understand and appreciate it. The physician is often hampered by the stupid questions of the lawyer who frequently puts on so many conditions that it may be impossible to answer many of his questions, and no attempt should be made to do so in the form in which they are presented. The physician is often biased at the start from the fact he is retained by one or the other party. This is not a right condition of things. The physician should look the matter over and then state to the jury what, in his opinion, are important and what are not important facts in the case, without any prejudice whatever, and in as simple language as possible, so as to aid the jury as much as he can in forming their decision, much in the same manner as the judge in his address to the jury. In order that the best results should be obtained in this direction, men of special ability should be selected by the profession to act as experts, and appointed by the bar to examine and give evidence in cases requiring medical expert testimony. Action on the part of medical societies to favor and bring forth some such class of medical experts would be of great service not only to the medical but also to the legal profession."

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AN EPIDEMIC OF TYPHOID FEVER.

An epidemic of typhoid fever broke out at Ironwood, Mich., a town of about 12,000 inhabitants, May 13th, and has steadily increased. There are now about 400 cases, and an average of eight deaths daily, with no signs of cessation.

The Secretary of the State Board of Health reports that on examination he found the reservoirs of the general pumping-station overflowed and the filter-pipes clogged. Water-soaked logs and the privy buildings of the engineer's family were floating in the immediate vicinity and the collected excreta had been largely washed away. Owing to the clogging of the filter-pipes a break had been made in the reservoir and the contaminated water allowed to enter the distributing reservoir, to be pumped into general circulation. This occurred between the 10th and 15th of May — the first case of typhoid fever being reported May 13th. The contamination of the water-supply was still allowed to go on till the middle of June.

A sample of the contaminating water, contained pathogenic micro-organisms which caused the death of white rats into which they had been injected, the rats then having inflamed intestines and enlarged spleens.

On cleaning the stand-pipe several tons of filth, with dead fish and crabs were found.

Although this outbreak seems to have been caused by the general water-supply, later reports show that the wells throughout the city have become contaminated and a source of danger, and that water is being brought from Milwaukee. The armories and schoolhouses have been turned into hospitals.

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HYSTERICAL HÆMATEMESIS.

The not infrequent cases of hysterical hæmatemesis have been made the subject of study by M. Josserand.[1]

These cases, he says, though at first somewhat puzzling, have so distinct a characteristic, that the examination of the blood may be almost as pathognomonic as the expectoration in pneumonia. The more regular and early morning occurrence is of some value in the diagnosis; but the chief test is the examination of the expectoration itself. The liquid is less red than pure blood, it is more viscous, being diluted with saliva. This is especially seen when a single drop is placed on a piece of linen. The stain is not so deep and does not spread so rapidly. The blood does not, as a rule, coagulate, and is not frothy. On standing in a wine-glass it deposits three layers: An upper, red, colored by dissolved hæmoglobins; a middle, containing red globules, and a lower, which is largely made up of epithelial cells. The saliva acts as a solvent for the hæmoglobin and is present in about ten or twelve parts to one of blood. The source of the blood, chiefly from the stomach or œsophagus, may be the pharynx or base of the tongue.

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[1] Lyon Médical, No. [illegible], [illegible].

The phenomenon is found most often in cases of hysteria associated with dysmenorrhœa.

◆

LYMPHOMA OF THE CONJUNCTIVA.

M. Goldziehei[1] has reported to the Royal Society of Physicians at Buda Pesth, a case of lymphoma of the conjunctiva. It began as an intense conjunctivitis accompanied by great development of the follicles and the appearance of lymphomata in the neck. The conjunctiva of both lids was much swollen and hyperæmic. The cul-de-sac formed enormous projecting pads, œdematous and congested, and scattered with many follicular tumors and vegetations. There were also many smaller gelatinous follicles resembling highly-developed granulations. The nodules varied from the size of a lentil to that of a bean. There were no ulcerations. In the neck, on the same side, were masses of glands as large as a child's fist.

All these conditions distinguish lymphoma of the conjunctiva from trachoma, as does the slower progress of the latter. From tuberculosis it was distinguished by absence of ulceration and curability.

In this case surgical removal, with constitutional treatment, was successful.

◆

HÆMOGLOBINURIA COMPLICATING PNEUMONIA.

Dr. W. G. Nash, in the *Lancet* of June 24th, reports an interesting case of acute pheumonia accompanied by hæmoglobinuria.

A girl of sixteen, with pneumonia of the left lower lobe, on the third day passed urine of a dark yellow color, specific gravity 1,030, but with no albumen. The following day the water was distinctly bloody in color and scanty. Two days later it still being dark like porter, it was examined, as being thought indicative of more than a nephritis. Under the microscope no blood-cells were found, but numerous small red granules, a few casts and débris. The guiacum test gave a blue color. The crisis in the pneumonia occurred on the eighth day; and a few days later, the urine became normal.

There were several interesting features in the case: (1) On the fourth day only was there any expectoration; (2) the very marked anæmia and breathlessness, the latter being quite out of proportion to the amount of lung affected, and evidently due to the great blood destruction; (3) the very distressing aching all over the body, especially affecting the loins, which lasted several days and was no doubt due to the blood change; and (4) the fact that on the fifth day the temperature in the axilla was 98.2°, and in the mouth 103°, this being apparently due to the contraction of the peripheral vessels.

◆

CRYPTOPHTHALMUS.

Fuchs[1] recently showed to the Royal Society of Physicians at Vienna, a case of cryptophthalmus. The child, who was born of healthy parents, had no eyelids, but in their place, a continuous covering of skin on which were no lashes or eyebrows. Careful examination detected no tarsal cartilages. There were, however, some muscular fibres corresponding to the orbicularis, since a strong light caused the child to wrinkle the skin over the eye. The child was also web-fingered.

This is the fourth case thus far recorded.

◆

HÆMORRHAGE IN THE CENTRUM OVALE.

Affections of the centrum ovale have few constant or characteristic symptoms. Many cases are quite latent; the signs of others bear reference to the cortex or adjacent basil portions of the brain. In the case of hæmorrhage, the indirect symptoms give additional difficulty to the diagnosis. Bamberger has had the observation of four cases, all similar in character, in two of which the autopsy confirmed the ante-mortem diagnosis. The other two were not examined after death. The cases were characterized by deep coma, markedly flushed faces, hæmiplegia, epileptic convulsions in the paralyzed side, and gradual cessation of life.

The Jacksonian epilepsy distinguished these hæmorrhages from all others. The differential diagnosis lay between cortical hæmorrhage and hæmorrhagic pachymeningitis. The diagnosis of hæmorrhage in the centrum ovale has a bearing on the prognosis, and especially on the care of the case as regards trephining.

◆

PARENCHYMATOUS INJECTIONS IN THE TONSIL.

Von Ziemssen[2] reports that he has found the injection of carbolic acid into the parenchyma of the tonsil, useful not only in the treatment of scarlatinal diphtheria as recommended by Traube and Heubner, but also in ordinary simple tonsillitis whether follicular or suppurative. He bases his treatment on the belief that nearly all cases of tonsillar angina are of an infectious nature, inasmuch as the presence of streptococci, staphylococci and diplococci are constantly found in the crypts of the tonsil. An abrasion of the epithelium is all that is needed to give them pathogenic entrance.

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[1] Le Bulletin Medical, No. 49, 1893.

[1] Deutsche Medizinal Zeitung, No. 50, 1893.

[2] Beilage Zum. Centralblatt fur klin. Medical, 1893, 25.

In catarrhal tonsillitis his treatment consists in the injection of one-half a cubic centimetre of a two-per-cent. solution of carbolic acid into the substance of the tonsil. The pain and difficult deglutition are at once lessened and the temperature falls to normal or below. As a rule, one injection is sufficient. Sahli of Bern and Heubner concur in the statement of Von Zeimssen as to the value of this treatment.

◆

THE BACTERIOLOGY OF SUPPURATIVE MENINGITIS.[1]

Zorkendorfer reports a case in support of the theory advanced by Fraenkel and others of the etiological relation of the pneumococcus to purulent meningitis. Autopsy in this case, which was one of purulent meningitis uncomplicated by any pneumonia, showed greenish-yellow pus in the sphenoidal cavities, and a suppurative pharyngitis. The pus taken from the meninges and from the sphenoidal cells was found microscopically to contain pneumococci. Cultures and inoculation also showed their presence in the meninges, in pure cultures and elsewhere with other cocci. Section of the brain showed the diplococci only in the purulent meninges — in no instance in the brain substance or the blood-vessels.

◆

INFANTILE DIABETES.

In the various text-books on children's diseases very little is said about diabetes except that it is exceedingly rare in children. The difficulty of obtaining the urine of very young children for examination, may be one reason for the failure of early diagnosis in such cases as do occur, and the marasmus is referred to other causes. In spite of its rarity the disease is not so infrequent as might be supposed; and Duflocq and Dauchez's report[2] of such cases occurring in very young children is not without interest. The patient, a boy of eighteen months, had always been well, save for a tendency to constipation. For a fortnight previous to observation, he had had great thirst, drinking two and a half litres of sterilized milk daily. Micturition was frequent. He was peevish, and groaned in his sleep. The loss of weight and fretfulness was attributed to dentition. The temperature was 37.8° C. The pulse was feeble, and there was some cyanosis. During the night the child failed much, became cyanotic, moaned, and vomited several times; temperature 36.5° C. From this condition he rapidly passed to one of coma, with quick respiration, dilated and immovable pupils, and died during the day. From examination of dried napkins a considerable percentage of sugar was found.

There was heredity in the case, a great uncle having died of diabetes.

In examining this and other cases the following conclusions were reached: Among the earliest symptoms is the change in disposition — a wearied querulousness, unaccountable sobbing in the midst of play. Constipation appeared not infrequently. The increased urination is often ascribed to the ingestion of much milk, which is mistaken for a hearty appetite. The occurrence of dentition is looked upon as causing the loss of sleep and wasting of flesh. The course of the disease is rapid; and a sudden unexpected coma may first call serious attention to the case.

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[1] [illegible]

[2] [illegible]

◆

THERAPEUTIC NOTES.

A Case of Antipyrine Habit. — A case of antipyrine habit is reported, in which the patient, a nervous woman of twenty-three, had used the drug for headache. For two years she had taken nearly eight grammes a day. The symptoms were those of great prostration, muscular weakness and insomnia. In the gradual reduction of the dose caffeine was used to meet the functional disturbance. A cure was finally accomplished.

Salicylic Acid for Tape-Worm. — Ozegovski recommends the following treatment for tape-worm. The patient takes no mid-day or evening meal, and at bedtime is given 30 grammes of castor-oil. The following morning at 7 o'clock a second dose of 15 grammes of castor-oil is given. An hour later one gramme of salicylic acid is given, to be repeated every hour to four doses. If the worm is not expelled by this time a third dose of castor-oil is indicated.[1]

Digital Compression in the Vomiting of Anæsthesia. — Dr. Bernard Joos[2] describes a method for the control of the hiccough and vomiting during anæsthesia, which he has found successful for several years. It consists in digital compression of the phrenic and vagus nerve against the sternal end of the clavicle. His method is as follows: As soon as singultus or vomiting begins, the etherizer presses the last phalanx of the left thumb firmly over the sternal end of the clavicle, the body of the thumb being parallel with the clavicle and the hand resting on the chest. The pressure is made with the radial side of the thumb. The vomiting stops at once, as a rule. If needed, or more convenient, the pressure may be made on the right side. Pressure is continued for a few moments to prevent a return of the vomiting. He recommends the trial of this method in cases of sea-sickness.

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[1] Münchener med. Woch., No. [illegible]

[2] Korrespondenzbl. f. Schweizer Aezte 3, 1893.

METEOROLOGICAL RECORD,

For the week ending July 1, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A.M.	8.00 P.M.	Daily mean.	Direction of wind. 8.00 A.M.	8.00 P.M.	Velocity of wind. 8.00 A.M.	8.00 P.M.	Weather.* 8.00 A.M.	8.00 P.M.	[illegible]
S...25	[illegible]	[illegible]	[illegible]	54	[illegible]	[illegible]	[illegible]	N.	E.	3	[illegible]	[illegible]	O.	
M	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E.	E.	[illegible]	[illegible]	[illegible]	[illegible]	
T	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	[illegible]	[illegible]	16	[illegible]	O.	
W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	E.	[illegible]	[illegible]	[illegible]	[illegible]	
T..29	[illegible]	[illegible]	[illegible]	[illegible]	76	87	[illegible]	S.W.	S.	[illegible]	[illegible]	[illegible]	C.	
F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
S.. 1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			S.W.	S.W.		11	C.	C.	

* [illegible]

RECORD OF MORTALITY

For the Week ending Saturday, July 1, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal Diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	[illegible]	702	340	23.80	11.34	10.50	.84	7.42
Chicago . . .	[illegible]	[illegible]	184	18.63	8.74	7.36	2.76	5.52
Philadelphia .	1,115,562	389	159	24.44	10.40	15.86	1.82	3.90
Brooklyn . .	[illegible]	[illegible]	108	27.55	7.54	18.85	—	3.77
St. Louis . . .	[illegible]			—			—	—
Boston . . .	[illegible]	162	40	11.05	16.25	1.30	1.95	3.90
Baltimore . .	[illegible]							—
Washington . .	[illegible]	137	81	25.96	7.30	32.85	.73	2.19
Cincinnati . .	[illegible]	110	47	20.02	13.65	14.56	—	1.82
Cleveland . .	[illegible]	88	31	14.82	6.84	5.70	3.42	3.42
Pittsburg . .	[illegible]	[illegible]	91	37.84	4.62	17.16	3.30	3.30
Milwaukee . .	[illegible]	66	[illegible]	25.84	12.16	6.08	1.52	13.68
Nashville . .	[illegible]	31	15	35.53	16.15	25.84	—	—
Charleston . .	[illegible]	45	12	13.33	17.77	11.11	2.22	—
Portland . . .	40,000	8	3	12.50		—	—	—
Worcester . .	[illegible]	25	10	12.00	8.00	4.00	—	—
Fall River . .	[illegible]	28	15	25.00	10.17	17.85	—	—
Lowell . . .	87,191	33	15	27.27	15.15	27.27		—
Cambridge . .	77,100	19	9	21.04	31.56	16.78	5.26	—
Lynn	[illegible]	[illegible]	6	15.38	23.07	—	—	—
Springfield . .	48,684	21	[illegible]	4.76	28.56	4.76	—	—
Lawrence . .	[illegible]		—	—		—	—	—
New Bedford .	[illegible]	16	6	12.50	31.25	6.25	—	—
Holyoke . . .	[illegible]		—		—		—	—
Salem	[illegible]	17	2	—	35.28	—	—	—
Brockton . .	32,140	7	1		14.28		—	—
Haverhill . .	31,396	11	4	18.18	—	18.18	—	—
Chelsea . . .	30,264	9	0	11.11	—	—	—	11.11
Malden . . .	[illegible]	7	3	14.28	—	—	—	14.28
Newton . . .	27,556	5	1	—	—	—	—	—
Fitchburg . .	27,146	[illegible]	[illegible]	—	—	—	—	—
Taunton . . .	26,972	5	1	—	—	—	—	—
Gloucester . .	26,688	6	0	—	33.33	—	—	—
Waltham . .	22,058	4	0	25.00	—	—	—	—
Quincy . . .	[illegible]	5	0	—	20.00	—	—	—
Pittsfield . .	[illegible]	2	1	—	—	—	—	—
Everett . . .	16,585	4	3		—	—	—	—
Northampton .	[illegible]	3	0	33.33	—	—	—	33.33
Newburyport .	14,073	8	1	—	12.50	—	—	—
Amesbury . .	[illegible]	3	0	33.33	33.33	—	—	—

Deaths reported [illegible]; under five years of age 1,293; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 672, diarrhœal diseases [illegible], consumption 313, acute lung diseases 278, diphtheria and croup 136, typhoid fever 39, whooping-cough 33, measles 31, scarlet fever 31, cerebro-spinal meningitis 20, erysipelas 6, malarial fever 6, small-pox 2, typhus fever 2.

From whooping-cough New York 8, Philadelphia 7, Brooklyn 5, Chicago, Cincinnati and Pittsburgh 3 each, Nashville 2, Boston and Portland 1 each. From measles New York and Pittsburgh 12 each, Chicago 4, Philadelphia, Brooklyn and Cincinnati 1 each. From scarlet fever Pittsburgh 8, Brooklyn 7, New York 4, Boston 3, Philadelphia, Milwaukee and Fall River 2 each, New Bedford, Waltham and Amesbury 1 each. From cerebro-spinal meningitis New York 6, Chicago and Washington 3 each, Cleveland, Worcester and Lynn 2 each, Brooklyn and Milwaukee 1 each. From erysipelas Chicago and Boston 2 each, New York and Philadelphia 1 each. From typhus fever New York 2. From small-pox New York and Chicago 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending June 17th, the death-rate was 19.4. Deaths reported 3,842; acute diseases of the respiratory organs (London) 234, diarrhœa 250, measles 143, whooping-cough 89, diphtheria 81, scarlet fever 74, fever 20, small-pox (London 6, West Ham, Birmingham and Manchester 2 each, Nottingham, Derby, Oldham, Halifax, Bradford, Sheffield and Hull 1 each) 19.

The death-rates ranged from 10.3 in Portsmouth to 32.2 in Swansea; Birmingham 15.3, Bradford 19.1, Croydon 16.3, Hull 20.2, Leeds 15.8, Leicester 18.5, Liverpool 28.9, London 19.1, Manchester 25.0, Newcastle-on-Tyne 14.6, Nottingham 12.1, Preston 15.5, Sheffield 18.9, Sunderland 19.0.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending June 24th, the death-rate was 22.1. Deaths reported 4,377; acute diseases of the respiratory organs (London) 252, diarrhœa 496, measles 128, whooping-cough 95, diphtheria 86, scarlet fever 54, fever 41, small-pox (London 11, Bradford 4, Birmingham, Oldham and Halifax 2 each, West Ham, Birkenhead and Manchester 1 each) 24.

The death-rates ranged from 11.5 in Norwich to 32.9 in Liverpool; Birmingham 21.4, Bolton 20.5, Bradford 19.8, Croydon 18.2, Hull 17.0, Leeds 19.9, Leicester 24.6, London 22.6, Manchester 26.6, Newcastle-on-Tyne 21.4, Nottingham 15.8, Oldham 19.9, Salford 26.9, Sheffield 22.8, West Ham 14.4.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 8, 1893.

James S. Leys, commissioned an assistant surgeon in the Navy.

G. S. Beardsley, medical director, detached from Navy Yard, Washington, D. C.

C. H. White, medical inspector, detached from Smithsonian Institution.

John C. Wise, surgeon, ordered to Navy Yard, Washington, D. C.

C. U. Gravatt, surgeon, ordered to the Smithsonian Institution.

C. D. W. Brownell, assistant surgeon, detached from the U. S. S. "Newark" and granted one month's sick leave.

S. G. Evans, assistant surgeon, ordered to the U. S. Receiving-ship "St. Louis."

C. W. Rush, passed assistant surgeon, ordered before Retiring Board.

THE PAN-AMERICAN MEDICAL CONGRESS EXCURSION TO ROME.

It has been definitely determined that the Pan-American Medical Congress Excursion to the Eleventh International Medical Congress will sail on the S. S. *Werra* from New York, September 9th, the day following the adjournment of the Congress at Washington, and will arrive at Genoa, September 20th, four days before the opening of the Rome meeting.

Round-trip steamer tickets may be procured for $142.50 for inside rooms, and $150 and upwards for outside rooms. Tickets are good for members of the Congress and their families and may be used at option of holder to return on any steamer of the line from Genoa, or on Saturday steamers from Bremen, or Sunday steamers from Southampton, during the months of October, November and December. This exceptional rate is made for members of the Pan-American Medical Congress.

RECENT DEATHS.

Benjamin A. Fordyce, M.D., of Union Springs, N. Y., died June 3d, aged seventy years. During the Rebellion he was assistant surgeon of the 160th Regiment of New York Volunteers. He was at one time President of the New York State Medical Association.

Rev. E. P. Thwing, M.D., died in Canton, China, of typhoid fever. He was a graduate of the Andover Theological Seminary and of the Long Island College Hospital. He was actively interested in starting a hospital for the insane in connection with his missionary work.

BOOKS AND PAMPHLETS RECEIVED.

Twenty-sixth Annual Report of the Massachusetts Infant Asylum. 1893.

Catalogue of the Albany Medical College, Sixty-second Session, 1892–93, and Announcement for Session, 1893–94.

Zur Therapie der Hautkrebse. By Dr. Oscar Lassar. Sonderabdruck aus der Berliner klinschen Wochenschrift. 1893.

Pathology of the Vermiform Appendix. By T. N. Kelynack, M.D. With illustrations and bibliography. London: H. K. Lewis. 1893.

Bibliographie der Klinischen Helminthologie; Ascaris, Oxyuris, Trichocephalus, Ankylostomum. Von Medicinalrat Dr. J. Ch. Huber. 1893.

Colles' Fracture; Illustrated by Splints used in Treatment and by Photographs of Cases. By E. H. Woolsey, M.D., Oakland, Cal. Reprint. 1892.

Nostrums for increasing the Yield of Butter. By Harvey W. Wiley, Chemist of the United States Department of Agriculture. Farmers' Bulletin, No. 12. Washington. 1893.

Traitement des Végétations Génitales Chez la Femme. Du Bleu de Méthylène comme Traitement dans Différentes Maladies Infectieuses et Particulièrement dans la Vaginite Purulente d'Origine Blenorragique. Par G. Richard D'Aulnay. Reprint. 1893.

An Ovarian Tumor Weighing 111 Pounds Removed from a Child of Fifteen, whose Weight was 68 Pounds. The Real Rewards of Medicine. Laparotomy for Apparent Intestinal Paralysis which Caused Arrest of the Intestinal Contents and was Equivalent to Intestinal Obstruction. Case of Cancer of the Hepatic Flexure of the Colon Producing Intestinal Obstruction; Temporary Relief by an Artificial Anus; Later Re-establishment of the Continuity of the Bowel by Ileo-Colostomy by means of Murphy's Button. By William W. Keen, M.D., of Philadelphia. 1893.

Lecture.

TUBERCULOUS PLEURISY.[1]

The Shattuck Lecture for 1893.

BY WILLIAM OSLER, M.D.,
Professor of Medicine, [illegible] Hopkins Hospital, [illegible]

Mr. President and Fellows: — Many members of your ancient and honorable body (Bowditch, Wyman, Ellis, Garland, Sears and others), have dealt with many problems in connection with pleurisy; and without making invidious comparisons it may be said that their contributions, more particularly those of the late Henry I. Bowditch, are the most important which have been made on the subject in this country. While modesty made me hesitate to select any question relating to pleurisy as the topic for the Shattuck Lecture of this Society, I felt that differences of opinion on many points — not the least on those concerning the frequency, varieties and sequences of the form known as tuberculous — would justify the narration of an experience gleaned during the first four years of service in the medical wards of the Johns Hopkins Hospital.

I. INCIDENCE OF TUBERCULOUS PLEURISY IN THE POST-MORTEM ROOM AND IN THE WARDS.

(*a*) *In the Post-Mortem Room.* — A trustworthy estimate of the incidence of tuberculous pleurisy can be had only by anatomical investigation. Uncertainty is inherent to clinical records of an affection such as pleurisy, the diverse etiological factors of which cannot be always discriminated at the bedside, even with the help of bacteriology.

Accordingly, with the kind assistance of Dr. Rupert Norton, and with the consent of my colleague, Professor Welch, I have carefully analyzed the post-mortem records of the 101 successive cases from my wards in which pleurisy — fibrinous, sero-fibrinous, hæmorrhagic or purulent — was found; and the record is of interest as showing the incidence of tuberculous pleurisy in a medical service varying from 70 to 90 beds. There were 32 cases out of 101 in which the pleurisy was definitely tuberculous. I have estimated as such only those in which tubercles were present on the pleural layers, either as fresh miliary granulations, caseous masses or diffuse fibro-tuberculous membranes. Of these cases there were eight with purulent exudate, all associated with pneumothorax, and two with hæmorrhagic fluid. Seven were cases of acute miliary tuberculosis with fibrinous and sero-fibrinous exudate; four were instances of acute miliary tuberculosis with a purely fibrinous effusion; and thirteen were cases of chronic sero-fibrinous exudate with more or less thickening of the pleural layers. In four instances the sero-fibrinous exudate was encapsulated.

There were thirteen cases of pulmonary tuberculosis in which pleurisy was present without our being able to say definitely that it was of a tuberculous nature. In ten of these cases the exudate was fibrinous, and three sero-fibrinous. It will thus be seen that the incidence of tuberculous pleurisy among these 101 cases was a little less than 32 per cent. By far the most common forms of pleurisy are the sero-fibrinous and fibrinous, secondary to acute disease of the lungs, or occurring as a terminal process in chronic affections of the heart, arteries or kidneys.

(*b*) *In the Wards.* — Passing now from the certain and definite data of the post-mortem room, let us turn to the wards and inquire into the etiology of the cases of acute pleurisy which have been under observation. I have thought it better to review only those cases in which there has been a pleurisy with effusion coming on acutely or subacutely, and in which the effusion was sero-fibrinous, not simply fibrinous and not purulent. I have excluded the former from analysis because of the very great frequency, as the post-mortem reports show, of a simple fibrinous pleurisy in so many varied conditions, often overlooked clinically, of which, of course, tuberculosis is one, indeed one of the most common. I have not included the purulent cases, partly because there is here much less dispute, as they have a more definite and well-recognized etiology, and partly from the fact that abscess of the pleura — empyema — is regarded with us as a strictly surgical affection, and the cases are either admitted directly to the surgical wards or turned over at once. This may account for the somewhat remarkable absence of purulent pleurisies in the post-mortem records of cases from my wards, apart from the instances of pneumothorax. Still it must be noted that of 14 cases of empyema operated upon, 12 recovered, exclusive of the cases of empyema with pneumothorax. The cases in the following analysis, then, have been admitted to the wards with well-marked signs of pleurisy with effusion. Of the 58 cases 45 were males, 13 females; 10 were in the colored race, 48 in the white.

In attempting to estimate from the clinical side the tuberculous character of a pleurisy the following points are to be considered:

(1) Mode of onset. In reality this is not a criterion of any moment since it must be acknowledged that an acute tuberculosis of the pleura may come on abruptly with a stitch in the side, or even with a chill. A slow insidious onset is more common, but by no means characteristic.

It is so difficult to obtain from hospital patients accurate information as to the mode of onset, often indeed as to the duration of their illness before admission, that we cannot place very much reliance upon the facts so obtained; but the errors, I suppose, are equally common throughout the entire class. As a general rule, too, the patients do not seek relief until the symptoms have become aggravated. Thus it is interesting to note that in the 58 cases of sero-fibrinous pleurisy the duration of illness prior to admission was given as one week and under in 8 cases; between one and two weeks, 16 cases; between two and three weeks, 7 cases; one month and over, 25 cases.

Of the symptoms for which they sought relief the following were the most striking: In 2 cases no history could be obtained. Of the remaining 56 cases the symptoms for which they sought relief were, as a rule, cough, dyspnœa and pain in the side; more rarely fever or chills and fever. Thus, in 45 cases, the patient complained of cough; in 44 of dyspnœa; in 41 of pain in the side; and in 14 there was a history of chills and fever. Cough and dyspnœa are by far the most frequent causes for which the patient seeks relief in hospital. In two only of the cases did the patient give any definite account of an exposure to cold or of a wetting. As stated, the onset is no etiological criterion, and the claim at present is, that a great majority of the cases of pleurisy *a frigore* are, in reality, tuberculous. In the history obtained from the patient, however, there may be very suggestive features; for instance, cough and loss of weight for some months previous, or hæmoptysis, or a previous attack of pleurisy. Thus, one patient, Case 1 of the series, had had a cough at intervals for three years, and when admitted, the right side of the chest was full of greenish, sero-purulent fluid. After many tappings he improved very much, and, though the cough had persisted for so long, there was no sign of pulmonary disease, but subsequently bacilli were found in the expectoration. Another interesting case, No. 4, had hæmoptysis nine months before, and though he was an extremely robust, vigorous man, the insidious onset of the pleurisy led us to suspect tuberculosis. Bacilli were demonstrated in the exudate. The patient subsequently developed pulmonary tuberculosis. In two instances only the patients had pleurisy with effusion previously; in one, five months before; in the other, eight years before. Both did well, and both were discharged at at the end of three weeks.

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[1] Delivered before the Massachusetts Medical Society, [illegible]

(2) A point, on which more stress has been laid than the facts justify, is the family history; but inheritance is now generally acknowledged to be of a susceptible soil, rarely of the germ itself. Local conditions are probably of most importance in influencing the susceptibility to an infectious agent so widely diffused as that of tuberculosis. Still it is interesting to note the presence or absence of tuberculosis in the ascendants or near relatives; thus in two of the fifty-eight cases the father died of tuberculosis; in four, the mother; in one, the father and mother; in six, a brother or sister; in one, a brother and sister; in four, an aunt or uncle; and in two the wife died of tuberculosis, in one the husband. In 37 of the cases positive questions as to tuberculosis in the family were answered in the negative, and in three it could not be obtained.

(3) The character and contents of the exudate. There is nothing specific in the physical character of the effusion in tuberculous pleurisy, nothing from which on aspiration a definite opinion can be formed. The exudate may be sero-fibrinous, simply serous, hæmorrhagic, sero-purulent or purulent. Of these, hæmorrhagic and the thin sero-purulent may be called suggestive. Of the cases of acute pleurisy with effusion, at the clinic, seven were blood-tinged. Of the cases from the wards in which pleurisy was found post-mortem, in four the effusion was hæmorrhagic; of these, two were tuberculous and two were simple. The thin sero-purulent exudate, a little opalescent, often with a greenish tint, and which microscopically contains a granular, fatty matter and only a few leucocytes, is very suggestive of a tuberculous lesion. The cover-slip and culture-tests, so much practised of late, yield variable results. In the first place it is conceded that the great majority of tuberculous sero-fibrinous effusions are sterile; organisms are neither found on cover-slip preparations nor does anything grow in cultures. Our own experience is in accord with this, except that in one case the tubercle bacilli were definitely determined in the exudate. This was after repeated tappings. A sterile effusion is regarded as a point in favor of the tuberculous nature. In the purulent tuberculous exudates the bacteriological results are also variable. In some of the acute cases, as in one which I shall describe shortly, the bacilli of Koch were abundant. In other instances only pus organisms or the diplococci are present, or there may be no micro-organisms. A more important and more satisfactory test is the inoculation of the exudate into the peritoneal cavity of guinea-pigs, experiments which in the hands of some of the French observers have yielded positive results in the sero-fibrinous and purulent pleurisies of individuals apparently not tuberculous.

When Koch's tuberculin was in vogue, it was hoped that it might at any rate give us a means of positive diagnosis. The report of the German hospitals shows that in the subjects positively tuberculous the great proportion of them present reaction, whereas in suspected individuals about 60 per cent., and in non-tuberculous subjects only about 25 per cent. Subsequently, in speaking of diagnosis, I will narrate an instance in which the acute reaction to tuberculin led us into a serious error in diagnosis.

And lastly, the nature of the pleurisy may not be apparent for months or years, when the onset of a tuberculosis in other parts may indicate clearly the character of the whole process. You are all familiar with the striking statistics published of late years, none more interesting than those by Dr. Vincent Y. Bowditch from his father's records. Such statistics from private practice are of infinitely more value, as a rule, than those from hospitals. The time has been altogether too limited at the Johns Hopkins Hospital to determine, even if we could, the subsequent history of the great proportion of the cases of sero-fibrinous pleurisy which have been under treatment. It is interesting to note, however, in striking contrast to figures from some hospitals, that so far as our records go, only five of these patients have subsequently had tuberculosis. While our hospital figures are by no means in favor of the view that a large proportion of all sero-fibrinous pleurisies are of a tuberculous nature, I must confess that in private practice I have, year by year, been increasingly impressed by the frequency with which the subjects of pleurisy with effusion subsequently become tuberculous. Such cases as the following are not uncommon.

A few months ago I saw Dr. Martinet, a man aged forty, of fine physique and general good health, and excellent family history. In the summer of 1892 he developed, without obvious cause, pleurisy on the right side, and in this attack was seen on several occasions by Dr. W. S. Thayer. He was aspirated twice, and made a very satisfactory recovery, and resumed his work. Three months subsequently, he developed basilar meningitis, of which he died in three weeks. There was nothing in the condition of this patient or in the character of the pleurisy to justify the suggestion of a tuberculous nature; but the onset of a meningitis, which ran a long course like the tuberculous form, with strabismus, etc., rendered pretty clear the nature of the process. A very similar case, I remember, in the practice of my late colleague, Dr. Ross, of Montreal. A young man was admitted with pleurisy on the left side, and the history of having had a previous attack several months before. The effusion gradually diminished, but signs of local disease developed at the apex of the right lung. About three months after admission a purulent otitis media developed on the left side, followed shortly by meningeal symptoms, of which he died in the third week. The autopsy showed greatly thickened pleural membranes on the left side, many tubercles and local tuberculous disease at the right apex, with a tuberculous basilar meningitis.

I have seen recently a young man with an advanced pulmonary tuberculosis, who consulted me first in Philadelphia in October, 1888, when he had the left pleura full to the clavicle with a serous exudate. There is no tuberculous history in his family. The disease set in insidiously with cough. He was tapped but once, and he rapidly gained health and strength. I did not see him again professionally until the autumn of 1892, when he had had attacks of severe prostration and shortness of breath, but very little fever. Since then, signs of local disease have developed and extended, and tubercle bacilli are present in the expectoration. Cases such as these could be paralleled from the note-books of any physician in large practice. The cases from the wards which have developed pulmonary tuberculosis will be described later.

II. CLINICAL TYPES.

Tuberculous pleurisy may be part of a general miliary infection, but it is rare to find the pleuritic symptoms dominating, or even pronounced enough to attract attention. In reviewing any large number of cases, the character of the onset and the quick or slow course offer the most valuable features for classification, and separate two types, to which may be added a third, when the pleurisy forms part of a general serous membrane tuberculosis.

1. *Acute Tuberculous Pleurisy.*

It is difficult to say, in our present state of knowledge, the proportion of instances of acute sero-fibrinous pleurisy due to tuberculosis. The cases are rarely fatal; a large majority recover completely; in a few the condition becomes chronic; a variable number develop tuberculosis. More than this we cannot say, but clinical and anatomical study enables us to separate, at least, three groups of tuberculous cases in which the onset is acute.

(a) *Acute tuberculous pleurisy, with subsequent chronic course.*

There are cases of tuberculous pleurisy in which the disease sets in abruptly with pain in the side, fever, cough, and sometimes with a chill. There may be nothing whatever to suggest a tuberculous process; the subject may be of fine physique and of excellent family stock. Nor may there be anything in the course of the disease, at first, to excite suspicion. The effusion augments and the patient is tapped, perhaps repeatedly, and may get well with evidences of a greatly thickened pleura. Then the pleurisy may recur, and the case is labelled one of chronic pleurisy with thickening of the membranes, and finally the lung is infected, or tuberculosis of other parts becomes manifest. The following is a good illustrative case, of special value from the fact that the death occurred from an intercurrent affection, and we were able to study the condition of the pleura just about a year after the onset of the first illness.

Case I. Pleurisy, with acute onset; chronic course of nearly a year's duration; repeated tappings; acute pneumonia; death; autopsy.

John A., aged forty-five, was admitted to ward F of the Johns Hopkins Hospital, June 18, 1892, complaining of shortness of breath, swelling of the feet and legs.

His mother and four or five of her sisters died of phthisis.

When young, had (he was told) scrofula, and had an operation performed on both hips; the wounds discharged for two years. He was not then, nor has been since, at all lame. Ten years ago he had hydrocele on the right side, which was tapped. After childhood he grew into a remarkably strong, powerful man. Previous to January, 1892, he had been working in the Belt-line tunnel for nine months, and was in perfect health, weighing 235 pounds. He went to Virginia, and while there, in January, his present illness began. While at work on a bridge he felt dizzy, had a severe pain in the left side, followed by cough, shortness of breath, much expectoration, which was not, however, blood-tinged. He went to a hospital in Washington, and was told he had typho-pneumonia. He had high fever, and was evidently very ill. The feet were swollen, and he had at times heavy sweats. He was several months in hospital, and was convalescent only about a month before his discharge on June 2d. He does not give a very clear account of his symptoms while in the hospital at Washington, but he had cough and pain in the side, and he lay principally on his right side. He lost also a great deal of weight.

Condition on admission (by Dr. Thayer). Patient is a large-framed, muscular, fairly well-nourished man. He is propped up in bed, inclining chiefly towards the left side. Lips and mucous membranes of good color; respirations rapid, 32; pulse, 128, regular, tension rather high; radial vessels are somewhat sclerosed. Temperature on admission, 99°; weight, 175 pounds.

Inspection. Thorax; the left side looks larger and movements are much restricted. The cardiac impulse is seen to the right of the sternum.

Percussion gives clear resonance in the right front as far as the third rib, where, close to the sternum, in the fourth and fifth interspaces, it becomes flat. On the left side there is modified resonance below the clavicle, shading into absolute flatness at the second rib, in the erect posture; at the third rib when recumbent. The flatness extends over the whole of the left back. Tactile fremitus is absent over the flat region, and the breath sounds are distant and tubular. On the right side they are clear, loud and breezy. The heart sounds are heard best to the right of the sternum, and are clear, the second loud and sharply accentuated.

Examination of the abdomen was negative. The urine was clear, yellow, acid, faint trace of albumin, no casts. The patient was aspirated, and 1,500 c. c. of a clear, yellow serum withdrawn.

For the first month in hospital the patient's condition did not materially improve. He lost in weight from 175 pounds to 157; the temperature range was constantly between 98.5° and 100°, rarely going to 100.5°, and only once, on the second day after his admission, reaching 101.5°. The fluid gradually reaccumulated, and he was tapped on the 21st, with a withdrawal of 1,280 c. c. of fluid; on the 30th, when 1,000 c. c. were withdrawn; and on July 8th, when 1,100 c. c. were removed. Early in July he began to improve — the appetite increased, and he gained in weight. On the third of August the following note was made: "The patient has been aspirated in all six times, the last time being on the 26th of July. On inspection, there is now very marked flattening of the left front. The expansion is greatest on the right side, on which percussion note is full and clear. On the left side there is flat tympany above the second rib, below absolute flatness. Over the flat areas there is a distant, tubular breathing, of almost the same intensity everywhere. The vocal fremitus is diminished. The breath sounds very nearly absent in the supraspinous fossa." He was aspirated the seventh time on August the 3d, with removal of 800 c. c., and the eighth time on August 16th, when 600 c. c. were removed; the fluid of the last four tappings was blood-tinged. In the latter part of July and the first two weeks in August he improved rapidly and gained in weight, and on the 16th weighed 175 pounds.

The patient was discharged on August 18th, when the following note was made: "The left side of the chest seems somewhat sunken; right side expands fully and well, and looks large. At the left apex there is a flat tympany, which shades into flatness at the fifth rib, just outside the nipple line. At the left back there is a marked dulness, becoming absolute about an inch below the angle of scapula. Above this point the vocal fremitus is felt, below it is absent. Respiration is heard, though feebly, everywhere except at the extreme base. The point of maximum cardiac impulse is not to be made out; the sounds are heard distinctly over the normal area; the second pulmonic sound is accentuated."

The diagnosis of pleurisy with effusion was made. No suspicion was entertained by Dr. Thayer, under whose care he came during my absence, that the process was tuberculous; indeed, there was no evidence whatever to indicate this, except that the last four tappings were slightly blood-tinged.

November 30, 1892. Patient was re-admitted today, with dyspnœa, cough and fever. He states that he has remained well since discharged, August 18th, and has been working on the streets ever since. Three weeks ago he had slight shortness of breath after an unusual exertion, and ever since that has had slight cough, with white, frothy expectoration. He worked every day until November 26th. Last evening he had a heavy chill, in which he shook for an hour. This was followed by fever, which persisted all night. This morning he spat up a little blood. His appetite has been good.

Condition on admission. Weight is 170 pounds. Temperature, 100.4° at 2 P. M., rising to 103° at 4 P. M. He had a profuse sweat in the afternoon, and the temperature fell to 98° at six o'clock. Pulse ranged from 80 to 120; respirations from 18 to 36.

December 1st. This morning patient is lying on his back, face somewhat flushed, lips and mucous membranes and finger-tips somewhat cyanotic. Pulse 104, full, of fair tension. Respirations 32. There is marked flattening in the left side in front; the right side of the chest expands fully. Resonance throughout the right front and axilla, good. There is marked dulness over the left chest, resonance in front having a slight tympanitic quality. There is dulness everywhere over the left chest behind, shading into flatness below the middle of the scapula. On the right side behind, the resonance appeared good, and the respirations were clear. On the left side behind, the breathing was distant, tubular, and in the infrascapular region scarcely audible, vocal fremitus distinct. Dr. Hewetson put in a needle in the left back and obtained clear fluid.

Heart, well marked epigastric impulse. The maximum impulse cannot be made out. The sounds are the best heard in the fourth interspace, four centimetres from the sternum. The spleen is not palpable; liver not enlarged.

The sputum not very abundant, muco-purulent, blood tinged, contained a few distinct tubercle bacilli, and many encapsulated diplococci.

The urine, reddish brown, specific gravity 1,025, moderate amount of albumin, no tube casts.

December 3d. Within the past twenty-four hours the signs of consolidation have appeared in the right side, and have extended rapidly. This morning dulness begins at the third space in front, and is marked to the middle of the back behind. The breathing is of a modified, tubular character, and accompanied with fine crepitant râles. The temperature rose throughout December 1st, and between 6 A. M. and 4 P. M. of the 2d, was continuously between 105° and 106°. For the past twenty-four hours the range has been between 103° and 104°. The pulse range has been from 106 to 120. The cough has been very distressing. The sputum is rusty, brown, tenacious and contains tubercle bacilli. On the evening of to-day a moderate venesection was practised.

December 4th. The dulness has extended on the right side behind, and there is now tubular breathing from the spine of the scapula to the base; pulse is good; the temperature fell last evening to 101°; this morning it is high again, 104°. The respirations are about 40. There is marked leucocytosis, 33,000 white corpuscles per cubic millimetre. During the day, patient sank gradually, the pulse becoming feeble, in spite of the persistent administration of stimulants, ammonia, etc.; the temperature kept up, and he sank and died at 2 A. M.

Autopsy (Dr. Flexner). Body of a large-framed, well-nourished man. Peritoneum smooth. Thorax; universal adhesions, which were readily stripped off on the right side. On the left side, dense fibroid union of the layers of the pleura to a distance of about eight centimetres from the sternal margin. The heart much distended, with firm, gelatinous clots; moderate hypertrophy of the left ventricle, distinct hypertrophy of the right, the walls of which were firm and considerably thicker than normal. No endocarditis.

In removing the left lung, an encapsulated serous effusion was opened, occuping the layers of the pleura over the postero-lateral region of the left chest. The costal pleura was greatly thickened, ranging from one to one and one-half centimetres; at the diaphragm, it was in places as much as two centimetres in thickness. The visceral layer was also thickened, but not to the same degree, only from three to five millimetres. Both layers were smooth, grayish-white in color, in places presenting areas of congestion and hæmorrhage. There was a good deal of grayish-white gelatinous fibrin in places, closely adherent to the visceral pleura. There were no caseous masses, no spots of caseous infiltration on the surface of either layer. On section, the thickened pleura had the appearance and consistence of firm, new connective tissue, and at first sight it seemed as if the process were really a simple, chronic pleurisy, more particularly as no miliary tubercles were noticed on the surface, and no caseous masses. On close examination, however, of the cut sections, particularly in places, grayish, translucent, fibroid tubercles could be seen projecting above the cut surfaces. These were particularly marked in the thickened diaphragmatic layers. At one or two spots there were found small areas, from three to five millimetres in extent, of grayish, yellow, tuberculous infiltration. The left lung was very considerably compressed, but still it everywhere contained air, except at the extreme base. There were no miliary tubercles, no caseous masses. The right lung was large, voluminous, retained its shape, did not collapse and was everywhere airless, except at the extreme apex and the antero-lateral margin. The pleura was a little thickened and covered with tags of old adhesions; no tubercles were seen. On section there was at the apex an area of caseation and softening the size of a walnut, surrounded with tubercles and smaller areas of caseation. This communicated directly with a good-sized bronchus. The lower part of the upper lobe, the greater part of the middle lobe, and all of the lower lobe, were in a condition of red hepatization. There were no miliary tubercles, no caseation. The bronchial and tracheal glands were greatly swollen, tumefied and presented here and there small caseous masses. There was nothing of special note in the abdominal organs; no tubercles. In the right testicle there was a fibroid and cartilaginous, cyst-like structure containing cholesterin.

There was a marked tuberculous history in the patient's family, and the latter tappings were blood tinged, points upon which in a less robustly built man, we would doubtless have laid greater stress. On his return with an acute pneumonia, tubercle bacilli, as well as pneumococci, were found in the sputum, and the former gave us, for the first time, a definite clue to the nature of the pleurisy, now chronic, but in process of healing. It is interesting to note that the tubercle bacilli came from a very small focus of caseation and softening in communication with a bronchus.

(To be continued.)

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Original Articles.

ABDOMINAL HYSTERECTOMY FOR FIBROIDS, WITH CASES.[1]

BY F. W. [illegible], M.D.

The indications for operating on fibroids generally agreed on by the best men of the day are:

(1) Hæmorrhage.
(2) Pain.
(3) Large size of the tumor.
(4) Rapid growth.
(5) Pressure symptoms, especially of bladder and ureters.
(6) Presence of ascitic fluid.

To just what extent any of these symptoms must be present, to call for an operation, is an open question. With considerable pain, for instance, in a medium-sized tumor growing slowly, some men would operate much earlier than others. There are two important sides to this question which, considered separately and in relation to each other, will, I am sure, improve our judgment in this matter.

First, Can these symptoms be controlled? If not, to what do they lead?

Second, How successful is the operation? When is it most successful? When is it least successful and most fatal?

As to controlling the symptoms; hæmorrhage is the one symptom that has been most successfully treated by palliative measures. Curetting, ergot and galvanism have proved useful, and should be tried when the tumor is small. But these remedies are usually only partially successful, and are not without danger. The cause is still present, and will soon reassert itself. If the palliative treatment is unsuccessfully persisted in a little too long, the patient comes to operation anæmic and debilitated, and must, therefore, be transferred into a class of less favorable operations. Whatever good has come from electricity in these cases, we know also of a great amount of harm. Patients have told me that they did not suffer as much from the operation as they did after each application of electricity. I have seen peritonitis follow this treatment, and we are all familiar with the reported cases of septicæmia from the same cause. Many operators have complained of the adhesions found when patients who have been treated by galvanism come to operation.

Pain has sometimes been relieved by galvanism, but it is usually due either to contractions of the uterus, or to pressure on the pelvic nerves or other organs, in which case no palliative treatment could be advised. Large size, rapid growth and pressure symptoms evidently cannot be relieved.

Thus we see that with the exception of hæmorrhage, and that not very certainly, the symptoms indicating the operation cannot be relieved. If not relieved, they usually lead to slow death, or to a hopeless invalidism. Beside these symptoms, there are other more treacherous complications which lead in the same direction. The tumors often become malignant. They break down and suppurate inside. Their presence causes dangerous diseases of the Fallopian tubes, and other complications difficult to recognize without operation, on account of the prominence of the tumor itself. It is not at all unheard of for the blood, or other discharge from the tumor, to become infected and to cause a fatal septicæmia. I have just seen, in consultation, a very sad case of such an accident. Curetting a very large, irregular uterine cavity already filled with germs, or plugging such a cavity with a vaginal tampon, is evidently not devoid of danger.

Now, as to the other side of the question; for the more successful the operation, the earlier we should advise it.

Statistics are so misleading that no one can say exactly what the mortality of this operation is. But we know that is much lower in the last five years. Thornton, Bantock, Meredith and others have been having very good results of late, also men in our own country, so I think it is fair to infer from the late reports that the mortality of the best operators is below ten per cent. This is such an improvement on the thirty-per-cent. mortality, which pertained ten years ago, that we must reconsider our point of view, and advise the operation earlier and oftener.

The operation is most favorable, when the tumor is small, and the health has not been seriously affected by the hæmorrhage, pain, etc. The operation is least successful when the tumor is very large, for then the operation is most severe, and the patient, debilitated by the long standing disease, is least able to stand it.

From all this, and my own favorable experiences, having had eleven operations with one death, and that in a large tumor of long standing, I have decided to advise the operation as soon as any of the above symptoms can be said to have become persistent. If the tumor is small, I should first remove the ovaries (I have also had several very favorable results from this operation), but if it is as large as a cocoanut, and any of the symptoms above mentioned are persistent, I do not advise curetting or removal of the ovaries, but hysterectomy, because the tumor, already too large to carry with comfort and safety, will, in all probability, increase in size.

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[1] [illegible] Apr[illegible]

As to the method of doing the operation: it depends wholly on the size and position of the tumor and the strength of the patient. I have never had a death from the extra-peritoneal treatment of the pedicle with a wire or rubber ligature. I am sure that in a large tumor in a debilitated patient it is the best operation, for it is much the quickest and least severe of all the operations. Such patients may die of shock, if the operation is too severe, but they are used to the torture of the tumor and can stand the extra-peritoneal treatment of the stump with patience. The operation advocated by Kelly, that of sewing the stump together and then fastening it into the abdominal wound seems to me less advisable than simply sewing the open stump into the abdominal wound. This I have done with a good result. It has the advantage of taking the open uterine canal out of the abdominal cavity and placing it where it can be dressed with gauze. Convalescence is quite as short as in any of the other operations. It is disappointing to find that convalescence is not materially shortened by these newer operations; for when the stump is sewed into the abdominal wound it usually suppurates and takes about as long to heal as when it is crushed in the ecraseur. Bear's operation seems to me a good one, if it will give good results, which remains to be seen. In the only case of mine that died, I was trying to do his operation. It was a severe and complicated case, and I am sure it would have been better to do that particular case with an ecraseur. I do not favor taking out the cervix except for cancer as it weakens the pelvic floor.

HYSTERECTOMY FOR FIBROIDS: CASES.

Case I. The patient, a single woman, thirty-seven years old, was sent to me by Dr. Johnson. She had first noticed the tumor in the abdomen fourteen months before I saw her. It had grown rapidly, and was then causing her so much pain that she found it difficult to continue her occupation as a weaver in a mill. She was much reduced in strength, and was annoyed by frequent micturition. Menstruation was not excessive.

The tumor was indistinctly fluctuating, and seemed to move independent of the uterus. The diagnosis was doubtful.

The operation was done November 5, 1886, at the Free Hospital for Women. The tumor was delivered through an incision from symphysis pubis to umbilicus. It proved to be a general fibroid enlargement of the fundus, with a long, narrow cervix. The broad ligaments were tied, and the pedicle, consisting of a small cervix uteri, was held in a wire ecraseur, and treated extra-peritoneally. The ovaries were not removed. The peritoneum was stitched to the stump below the wire. There was a good deal of shock. The temperature rose to 102°, but fell to normal on the third day. The stump was dressed with iodoform gauze, and was not looked at for six days, when it was found to be dry and hard. The wound healed by first intention, and the wire was removed on the fourteenth day. The patient was up and about at the end of a month.

The specimen weighed four pounds, and was a general fibroid enlargement of the uterus, with four inches of uterine cavity, which was large enough to admit two fingers. It contained many dilated lymph-spaces, and large blood-vessels, which had given it a semi-solid feel.

Six months later, the patient was seen and found in good condition. She had resumed her work in the mill, but complained of hot flashes and other discomforts which usually occur at the change of life.

Case II. The patient was a negress, age thirty. She had been well until one year before I saw her, when she noticed a small lump in the lower abdomen, about as large as an orange. This had steadily increased in size, and was then three inches above the umbilicus. Nine months before I saw her, she began to flow much more than usual; later the flow came three or four times in the month; at last it became continuous and profuse. She had frequent micturition, but no pain, except a dragging feeling and a sensation of weight. She had become short of breath, and was beginning to be troubled by hæmorrhoids. She was well nourished, but the mucous membranes were pale. She had a systolic heart-murmur at both base and apex, with accentuation of the second pulmonic. The tumor was firm and irregular in shape, and moved with the cervix.

The operation was done June 5, 1888, at the Massachusetts General Hospital. The tumor was delivered through a four and a half inch incision. The broad ligaments were tied off, and the pedicle, consisting of an enlarged cervix uteri, was held in a wire ecraseur, and treated extra-peritoneally. The Fallopian tubes were greatly dilated (about two inches in diameter), and bound tightly to the ovaries, which could not be removed. The peritoneum was stitched to the pedicle below the wire. A drainage-tube was placed in the pelvis, behind the stump. The stump was dressed with iodoform gauze, and was not examined until the fifth day, when it was found dry. The drainage-tube was removed on the second day. The patient made a slow recovery. On June 24th, a fluctuating mass was detected in Douglas's fossa. This was aspirated, and proved to be the remains of the dilated Fallopian tubes, which had refilled with clear fluid. July 2d, this was laid open, and drained through the posterior vaginal cul-de-sac.

The patient was discharged well, July 24th, seven weeks after the operation.

Case III. The patient, a single woman of thirty-nine years, was referred to me by Dr. Fifield, of Dorchester, who had found a fibroid tumor the size of an egg two years previous. She was unable to walk, and had great trouble with the bladder. At times, was unable to hold her water; at others, she passed it every twenty minutes. Micturition was difficult and painful. She suffered a great deal of pain, was unable to work, and therefore could not support herself. There was partial obstruction of the bowels. The catamenia were regular and not profuse, but very painful. A hard tumor was found, extending nearly up to the umbilicus. It evidently grew from the posterior uterine wall, and extended deep into Douglas's fossa. The operation was done May 20, 1890, at a private hospital, assisted by Dr. A. K. Stone. The tumor was found to be a fibroid as large as a child's head, growing in the posterior uterine wall. The uterus and fibroid were so locked in the pelvis that it was absolutely impossible to lift the mass out of the pelvis. The ovarian arteries were then tied, and the capsule of the fibroid was split over its top and posterior surface. The tumor was enucleated from the posterior wall of the much-enlarged uterus, leaving a ragged hole from fundus to cervix. An attempt to close this cavity with stitches was given up on account of the critical condition of the patient. The whole uterus was then drawn up and enclosed in a wire ecraseur and amputated low down on the cervix. The stump was treated extra-peritoneally.

The operation was severe, and caused much shock, but the patient soon rallied. The temperature rose to 100°. The wound was dressed on the sixth day, for the first time, when it was found moist and sloughy. The wire was cut on the tenth day. The stump sloughed, and discharged pus freely. On the eleventh day, the patient was doing well; but at 2 A. M. she sat up in bed, bathed in perspiration, and gasping for breath, called the nurse to open windows. The pulse became imperceptible, and she was thought to be dying. With stimulants and digitalis, this critical condition passed. The next day, the pulse was very rapid, and the temperature was subnormal. This attack must have been embolism in the lung. She gradually gained strength, and was discharged at the end of six weeks. September 19, 1890, the patient was much improved in general health. The cervix uteri was found to be free from the abdominal wall.

May 21st, she had had whooping-cough for nearly three months. This cough had caused a hernia at the point where the stump had been attached to the abdominal wall. It was controlled perfectly by an abdominal bandage.

Case IV. The patient, thirty-six years old, had been married twelve years; had had one child, and one miscarriage. She had had profuse and constant flowing, also pain and vomiting at each menstruation. She had had two attacks of peritonitis; had been confined to her bed for several months the year before, and had, when I saw her, been in bed for thirteen weeks. An enlargement of the abdomen, beginning eight years before, had increased steadily ever since. She was unable to attend to household duties, and desired to have the tumor removed.

Examination showed a hard, rounded tumor, the size of a child's head, just above the pubes, freely movable and not tender. The sound passed two and one-half inches. There was a trace of albumen in urine.

The operation was done September 18, 1891, at the Massachusetts General Hospital. The bladder was dissected from the tumor in front, and a wire ecraseur was passed around the cervix, which formed the pedicle, and was treated extra-peritoneally. The tumor weighed four and one-half pounds. The patient recovered well from the operation. On the following day, there was a smart hæmorrhage from the stump, which was controlled by tightening the wire.

The wire was removed on the sixteenth day. The patient went home well in seven and one-half weeks.

Case V. The patient was a widow, age thirty-seven, having no children. She first noticed an enlargement of the abdomen eight months before I saw her; since then it had gradually increased in size. About the same time, she flowed for four weeks steadily, having three or four severe hæmorrhages during that time. Since then menstruation had been very profuse. When I saw her, she was very white, and looked sick. Her temperature varied from 100° to 101°.

The tumor was a hard, rounded mass, rising from the pelvis to near the umbilicus, appearing about as large as a man's head. The cervix was small, and moved with palpation of the tumor, being evidently in intimate connection with it.

The operation was at the Massachusetts General Hospital, September 26, 1891. The tumor was delivered by a seven-inch abdominal incision. The broad ligaments being tied off, and the bladder dissected away, a wire ecraseur was slipped over the tumor. The cervix formed the pedicle, and was treated extra-peritoneally. The wire broke, in tightening on the fourth day. The patient made an uninterrupted recovery, and was discharged in five weeks, with a small sinus still unhealed.

Case VI. The patient, a single woman, of forty-four years, suffered from profuse flowing. The abdomen had been enlarged for four years. She had had difficult micturition for one year. She suffered principally from the size of the tumor.

The abdomen was found to be greatly enlarged. The tumor was elastic, but not fluctuating; was fairly movable, and seemed not connected with the uterus.

Operation, January 18, 1892, at the Massachusetts General Hospital. The incision extended from the pubes to the ensiform cartilage. The tumor was very large, and grew from the fundus uteri. A large part of its blood supply came from the mesentery. The mesentery had evidently become attached to the top of the tumor, and had itself disappeared, leaving a large plexus of arteries and veins to nourish the tumor. Thirty or forty vessels as large as a lead pencil were tied off: the broad ligaments contained very large vessels, and were tied off. The uterine arteries were tied, and the tumor cut away. The pedicle was then sewed into the abdominal wound, and a glass drain placed in the pelvis. The tumor was found to have begun to break down, and was sloughing in the centre.

The wound healed by first intention, except where the stump was sewed in; this suppurated, and did not heal until March 5th, a little over six weeks. The patient was greatly relieved by the operation, and gained forty pounds in the next year.

Case VII. The patient, a single woman of twenty-seven years, entered the Massachusetts General Hospital in February, 1892, under Dr. J. C. Warren. She was very anæmic and listless, and was flowing profusely. He removed a uterine polyp, with great relief to her. At the operation, he noticed that there were other fibroids present, and one of them quite large. She reentered the hospital September 22d, having been married in the meantime. Ten days before entrance, she had had a miscarriage at three months, which was followed by much flowing and great weakness, loss of appetite, foul vaginal discharge, and a very bad look. She was blanched and weak, and seemed to be mildly septic. The tumor had grown rapidly of late.

Just above the pubes was a large tumor, and several smaller ones, the mass being larger than a cocoanut. The tumor was hard, movable, but tender on pressure. The cervix was patulous, and seemed to be filled with a broken down polypus. The diagnosis was of suppurating fibroid. Hysterectomy was determined on, because there were numerous fibroids, and it was thought that any palliative operation would be quite as dangerous.

The operation was done September 27, 1892. The patient was in the Trendelenburg position. The broad ligaments were tied off. The bladder was then dissected off the tumor, a temporary rubber ligature was passed around the cervix, and the tumor was cut away. The cervical canal was then cut out, and the sides of the cervix sewed together. These stitches were left long, and by them the stump was held up and sewed into the abdominal incision, silk-worm gut sutures being passed through the abdominal walls and the stump.

There was no shock. The temperature rose to 101.5°. The wound healed by first intention, except where the stump was sewed in. This part suppurated freely, and had to be packed with gauze for several weeks. The wound nearly healed in three and one-half weeks, and the patient went home five weeks after the operation. The tumor consisted of a uterus much enlarged by several fibroids. In the uterine canal was part of a placenta in a putrid condition.

Case VIII. The patient, a married woman thirty-nine years old, was sent to me by Dr. Comey, of Clinton. She had had no children or miscarriage. Two years previous, she had had a very severe uterine hæmorrhage, and was curetted. For six months, the flow was moderately profuse. Then, it gradually increased, and continued for three months at a time. Of late, it had been irregular, but very profuse and debilitating, keeping the patient in bed. The patient had become very anæmic, and blanched and nervous.

The tumor was a general enlargement of the uterus, and about the size of two fists, the uterine cavity being five inches deep.

The operation was done October 29, 1892, at a private hospital. Patient in Trendelenburg position. The abdominal incision was five inches long. The broad ligaments were tied off, and the bladder dissected away. The wire ecraseur was placed on the cervix as a pedicle, which was treated extra-peritoneally.

The patient made an uninterrupted recovery. Temperature rose to 100°. The wire was removed on the next day. She was up and about in three and one-half weeks, and went home in less than five weeks.

Soon after her return home, she became very nervous, and developed an attack of melancholia, from which she has recovered.

Case IX. The patient was single, and forty years old. She was brought to me by Dr. Tuck. She had been treated for a fibroid by electricity for two years. The tumor had grown much larger in the last six months, and the patient had lost strength and flesh. She suffered pain while standing. The catamenia were profuse and painful. Both legs were œdematous. The patient was becoming incapacitated for work. The tumor was evidently solid, and filled the entire abdomen, extending deep into Douglas's fossa.

The operation was done on December 14, 1892, at a private hospital. The incision extended to the ensiform cartilage. The tumor was nearly as large as a pregnancy at full term, the veins in the broad ligaments were as large as two thumbs, and the uterine arteries were larger than a lead pencil. The broad ligaments were tied off, each vessel being tied singly. The ovarian and uterine arteries being tied, the tumor was shelled out of its capsule, which dipped deep into Douglas's fossa. The uterus was amputated at the cervix. The capsule left by the tumor was a large, ragged, bleeding hole behind the uterus, and was stitched to the abdominal wall in such a manner as to close the peritoneal cavity above, and to leave the bed of the tumor open to the outside below; the cervix stump was in this lower cavity. This whole space was then stuffed with gauze. The bleeding was profuse, and the patient was in collapse at the end of the operation. In the evening, the condition was worse, and it then became evident that hæmorrhage was going on. Probably some ligature had slipped off of a large vessel. The patient was evidently too feeble to have the abdomen reopened, and died. This case should have been operated on much earlier and it shows the result to continuing useless palliative treatment.

Case X. The patient was brought to me by Dr. Straus, of Manchester. She was a single woman, and thirty-seven years old. She complained of pain on the right side, which was increased in walking. She also suffered from painful and frequent micturition. She had lost flesh and strength in the last year. She had just recovered from an attack of peritonitis, which had lasted nine weeks.

On examination, a hard, nodular tumor, about as large as two fists, was found between the fundus of the uterus and the bladder. It was thought that this tumor had caused the recent attack of peritonitis, and operation was therefore advised.

The operation was done at a private hospital, February 22, 1893. The fundus uteri was found covered with small fibroids, varying from the size of a walnut to that of a marble. There were at least twenty different nodules. The bladder was adherent to uterus by false membranes. The broad ligament being tied off, and the bladder dissected free, a wire ecraseur was passed around the cervix, which made a pedicle, and was treated extra-peritoneally. The operation was accomplished without delay, and there was no shock. The wire was never tightened, and the first dressing was done on the sixth day. The wire was removed on the eighth day. On the tenth day, while cutting away a slough from the stump, I cut a good-sized vessel, which spurted hard enough to hit me in the face. I was much alarmed, and thought I had cut the uterine artery, and tried in vain to catch it with forceps. Finally, the bleeding was stopped by pressure with absorbent cotton.

The patient made an excellent recovery, and went home in five weeks, well. Although the part of the cervix inclosed in the wire was crushed, yet little or no pus was seen during the whole convalescence.

Case XI. The patient, a married woman forty-four years old, was sent to me by Dr. S. W. Torrey, of Beverly. She first noticed the tumor ten years ago. Catamenia had always been profuse, and had increased during the last year. She suffered constant pain on the right side, and had lost much flesh during the last year, and had become pale, nervous and sleepless. She looked like a very sick woman.

A solid tumor extended to umbilicus, and moved with the cervix.

The operation was done, March 2, 1893, at Dr. Torrey's hospital in Beverly. The patient was in the Trendelenburg position. The tumor proved to be a fibroid, about the size of a five months' pregnant uterus. There were several small tumors growing from the large one. One tumor, about the size of an egg, had become embedded in the abdominal wall, and was so bound by inflammatory products as to require a very difficult dissection for its removal. Another nodule had become encircled by a cord of intestine; the two were so firmly adherent that it was impossible to dissect them apart without injuring the intestine; so the tumor was sliced off, leaving a portion attached to the intestine. The bladder was dissected from the large tumor, and a rubber ligature was passed around the cervix uteri, which formed a large pedicle and was treated extra-peritoneally. A small, multilocular cyst was found, firmly imbedded in the broad ligament. This was laid open, and drained. The ovaries were not removed.

The patient made a rapid recovery. The temperature and pulse remained normal. The stump was first dressed on the eighth day; the wound healed by first intention. Dr. Torrey removed the rubber ligature on the twelfth day. There was considerable sloughing and pus about the pedicle, but it granulated rapidly. The patient returned to her home on April 5th, one month after the operation, with a granulating pedicle wound. She had some sleepless nights and mental disturbances, which gave rise to anxiety for a time; but this passed off, and may have been due to iodoform gauze dressing. April 18th, six weeks after the operation, the patient was up and about.

The above are not selected cases, but include all the cases I have ever done.

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HOW SHOULD THE GENERAL PRACTITIONER DEAL WITH STRANGULATED HERNIA.[1]

BY ARPAD G. GERSTER, M.D.,
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The cardinal condition for the successful treatment of strangulated hernia is an early diagnosis. I wish to call attention to the frequency with which, during the prevalence of gastro-intestinal disturbances in the summer months, the presence of a strangulated hernia escapes the notice of the overworked practitioner. Within my own experience a number of such cases have occurred where the suspicion of intestinal obstruction first arose on the appearance of fæcal vomit. Indeed, the rule to examine the groin, during any intestinal disturbance associated with persistent vomiting, should be invariable. The presence of diarrhœal or solid stools should not militate against this rule, as we know that strangulation of a hernia will frequently occur during the progress of an enteritis. I have also seen fatal errors committed by the mistaking of a small, incomplete, but strangulated hernia for a mass of inflamed lymph-nodes. Finally, I remember the case of a young man suffering from recent gonorrhœa, who, while vigorously rowing, slipped and fell backward into the boat. He instantly noticed a severe pain, which he referred to one of his testicles. The family physician found an intumescence of the scrotum, and unhesitatingly diagnosticated orchitis. Unfortunately this diagnosis was insisted on for five days, in spite of the grave and essential symptoms which accompanied this supposed orchitis. When fæcal vomiting had set in, herniotomy was performed. The gut was found to be gangrenous, and the boy died. In the presence of any tumor of the localities where herniæ are wont to appear, whenever persistent vomiting occurs, the benefit of the doubt should be given to the assumption of hernia. In those cases where the physical characteristics of hernia are uncertain, an exact diagnosis should be arrived at even at the cost of a probatory incision.

It would transcend the limits of a brief paper to discuss all the methods which have been successfully used for the reduction of strangulated hernia; but so much may be said, that in the same ratio as the safety of herniotomy has increased, have the limits of permissible taxis decreased.

In attempting taxis we must observe, that unless the patient can manage to be perfectly passive, general anæsthesia should be employed. The longer the strangulation has existed, the more unlikely it is that favorable conditions will be present. Local inflammation will have set in, rendering the patient intolerant of manipulation; and the presence of a more or less copious effusion in the sac will rob the operator of the chance of manipulating the gut itself, the effusion acting as an interposed elastic cushion. To replace the protruding gut our efforts should be directed towards the neck of the hernia.

The patient's posture is also important. Elevation of the pelvis will be useful. Another expedient may be mentioned by which I have prepared a strangulated hernia for reduction. I mean the application of intense cold in form of an ice-bag, or the evaporation of ether poured on the swelling, drop by drop. The local pain is markedly reduced, the intumescent parts shrink, and reduction often becomes astonishingly easy. Force should never be employed, as it will not accomplish replacement, but will often, especially when strangulation has for some time existed, result in serious damage to the gut. A case in point is that of a young man who contracted hernia, which immediately became strangulated. The physician in charge attempted taxis five hours after the occurrence. So much force was used, that when I saw the patient six hours later, the scrotum, penis and groin were extensively ecchymosed. On herniotomy it was found that the peritoneal covering of the strangulated gut had been ruptured and stripped up for a considerable distance. The convexity of the viscus was necrosed, and an artificial anus was established. The man died of septic peritonitis. Another adjuvant of reduction is the hypodermatic use of morphine which, however, should be employed sparingly and with discrimination and only as a preparatory measure for taxis. Otherwise it is apt to mask the more salient symptoms of strangulation, lull patient and physician into a false sense of security, and lead to incalculable mischief.

Permit me to call your attention to a point of great importance in estimating the urgency of a given case. Recently acquired and especially femoral herniæ are often characterized by great intensity of symptoms, mostly due to particularly firm constriction or strangulation. In these cases severe local pain is the rule, vomiting is incessant, and projectile, remissions are few or absent, and all the characteristics of the disturbance are decidedly *progressive*. The integrity of the gut as well as the resisting power of the patient are rapidly being undermined, and immediate relief is imperative.

To point out the contrast I shall mention a type of strangulation which is at first comparatively mild, and where the term "strangulation" is not strictly applicable, as the stenosis of the viscus is usually due to sharp flexion on account of the repletion of the prolapsed gut with liquid or solid contents. Here the tumor is not so acutely painful as in the former class, vomiting is infrequent, intervals of several hours (up to twelve) occurring, the length of remission depending on the amount of food ingested. Ultimately a hernia of this kind will lead to general exhaustion and gangrene of the intestine, though the progress of the malady is much slower. Aside from gut I have found strangulated herniæ containing (twice) a gangrenous vermiform appendix, the ovary, an infantile uterus, a diverticulum of the bladder, and in one instance, imbedded in an abscess, a foreign body (a fish-bone), which had apparently perforated the intestine of the hernia prior to strangulation.

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[1] Read before the Surgical Section of the Massachusetts Medical Society, [illegible]

A safe and well-tested working rule in dealing with strangulated herniæ of recent occurrence is to attempt gentle taxis; should this not succeed, to propose to the patient taxis in anæsthesia with the proviso, that if this miscarry, herniotomy should be immediately performed. Before anæsthetizing, everything should be prepared for the operation in order to save time and to save the patient a second narcosis. In the presence of fæcal vomiting it is desirable to empty the stomach by gastric syphon before anæsthesia; otherwise the putrid matter vomited during operation may enter the air-passages, causing suffocation or septic pneumonia.

The choice of the anæsthetic will also deserve some attention, chloroform deserving the preference, especially where pulmonary or renal disease coexists; ether, on the other hand, being preferable in the presence of cardiac weakness. Where the patient is very much exhausted it might be found advantageous to eschew general anæsthesia, and to perform the operation under cocaine, ether spray, or even without local anæsthesia.

There are on record a certain number of cases of successful taxis in which the reduction of the strangulated gut was undeniably made possible by preceding puncture and evacuation of liquid fæces. I have never consciously employed this treatment, deeming it more hazardous than a well-performed herniotomy.

As regards the technique of herniotomy, I do not propose to dwell upon the minute details of the procedure, and shall content myself with emphasizing two points, the observance of which goes far in rendering the operation successful. The first of these points is the observance of the *strictest cleanliness* or *asepsis.* Difficult as asepsis is where the abdominal cavity is invaded, it is rendered much easier by the topographical peculiarities of a wound in this region, as long as the gut is not gangrenous. The operation is practically extra-peritoneal, and infection must be gross indeed to result in peritonitis. Careful shaving of all the pubic hair, a thorough scrubbing with soap and water, followed by rinsing with a strong solution of corrosive sublimate of the entire field of operation, are conditions easily fulfilled. Instruments and dressings, the latter consisting of any available textile fabric, can be promptly sterilized *ex tempore* by a short boiling in a watery solution of washing soda. The vessels found in any kitchen will answer perfectly. For sponges wads of absorbent cotton or of the dressing material can be used. The towels to be employed about the field of operation should also be subjected to a similar boiling. I may safely express the opinion, that a thorough scrubbing of the surgeon's hands with soap and brush in hot water, followed by careful scraping of the nails and a short immersion in a mercurial solution, will insure a very efficient degree of asepsis.

As to the incision, I have to say only, that it should be ample, the upper angle of the wound extending well above the inguinal ring. Bleeding vessels should be promptly tied, and the sac cautiously opened at a place where fluctuation is apparent. This precaution will insure against wounding adherent gut. The sac should be split well up to its neck and then the contents should be carefully examined *in situ.* Should gangrene not be present in the visible intestine it may still exist at the site of constriction. To permit of a safe inspection of the constricted part of the viscus the constriction must be relieved not by blunt attempts at liberation but by *dissection from without inward,* this being the second point to be emphasized. The old and classical method of dividing the constricting fibres from within outward under the guidance of either a finger-nail or a grooved director is dangerous, especially where the gut has been irremediably damaged by prolonged strangulation. A much safer procedure is the division of all confining fibres by the knife, wielded under the guidance of the eye. Injury to an abnormal epigastric artery will thus be easily avoided, or, should it be unavoidable, the vessel can be readily secured. As soon as the strangulation is relieved *and not before,* the gut can be gently withdrawn and examined; should it be found healthy it can be immediately replaced. If its appearance is doubtful a fillet of silk can be drawn through the mesentery and the wound covered with a wet dressing. Within six hours an examination should be made, and if the gut is then found healthy, it may be replaced. If gangrene is undoubtedly present and fæcal vomiting or other urgent symptoms do not compel the establishment of an artificial anus, the intestine should be left unopened. Often the gangrene is very limited; and in these cases the gangrenous area can be inverted, and the healthy visceral peritoneum brought together over it by a longitudinal row of Lembert sutures. Should it become necessary to establish an artificial anus, two things must be carefully seen to. First that the last trace of constriction has been relieved, and, secondly, that a dam consisting of a light packing of iodoform gauze, slipped into the peritoneal cavity around the gut, corresponding to the neck of the hernia, should prevent the influx of fæcal matter.

It would transcend the limits of this paper to discuss the question, "When should an excision of gangrenous gut be practised, followed by intestinal suture?" or, "When shall the establishment of an artificial anus receive the preference?" Furthermore, I will abstain from considering when and how a radical closure of the inguinal canal should follow herniotomy. In concluding these desultory remarks I shall say:

(1) In case of uncertainty give the benefit of the doubt to the assumption that an obscure tumor of the groin is a hernia.

(2) Be gentle in attempting taxis, and do not spend too much time over it.

(3) Be thoroughly aseptic in herniotomy, and divide the constricting bands freely, not with the probe-pointed knife cutting from within outward, but with the scalpel under the guidance of the eye, from without inward.

The oldest man in Kentucky died July 9th. He was born in Virginia in 1776.

A METHOD FOR APPLYING PRESSURE TO THE SEAT OF A FRACTURE FOR THE PURPOSE OF BRINGING THE BONY FRAGMENTS INTO ACCURATE APPOSITION AND RETAINING THEM THERE UNTIL CONSOLIDATION HAS TAKEN PLACE.[1]

BY GEORGE H. MONKS, M.D.,
Surgeon to Out-Patients at the Boston City Hospital.

ON January 25th, L. P. H., a strong and well-built man, 35 years of age, applied at the Surgical Out Patient Department of the City Hospital for treatment of an injury to the right forearm, sustained two days previously. An examination revealed fracture of the radius, near the middle of the bone. There was anterior displacement of the proximal fragment and posterior displacement of the distal.

On manipulation free mobility of the fragments, and bony crepitus were marked. There was considerable difficulty in keeping the fragments in position, — a circumstance probably due to the small size of the bone at this point and its depth from the surface.

Pads were carefully applied upon the arm, — one in front and one behind the fracture; and while extension was made upon the hand, a plaster-of-Paris bandage was put on over the pads, and reaching from the roots of the fingers to the bend of the elbow. At the end of six days this bandage was removed with great care and the seat of fracture gently examined. The fragments were found out of place, as before, and there had been no apparent attempt at union. Fresh pads with anterior and posterior wooden splints were then applied, only to be removed again within twenty-four hours on account of pain caused by the pressure which it was necessary to exert upon the pads, in order to keep the fragments together.

While I was holding the fragments in place with my thumbs and fingers, and was considering what means, yet untried, would be most effective in keeping this troublesome fracture permanently reduced, I was struck with the ease with which the parts could be held in perfect apposition by the thumbs and forefingers alone, and I said to my assistants, Mr. S. Y. Wynne and Mr. A. B. Duel, that, undoubtedly, the best appliance for this case would be one in which a pressure could be brought to bear on the seat of fracture, as nearly like that exerted by digital pressure as possible.

That same day these gentlemen suggested a plan which they put into service in this case with the most satisfactory results, and it is for the purpose of calling attention to this method of theirs that I report its trial.

A turn of bandage was loosely placed about the arm at the seat of fracture, and its upper end was then held by an assistant vertically upwards, the arm being horizontal. This served as a landmark to the fracture. With his other hand the assistant made extension by gently pulling on the hand of the patient. The hand and forearm were then wrapped in a layer of sheet wadding, and a light plaster-of-Paris bandage applied. While the plaster was still soft, pressure was made at the seat of fracture with the thumbs and fingers, as is shown in Fig. 1, the forearm being kept slightly supinated. Under this pressure, which was very slowly and gently applied, the fragments which, up to this time had been out of place, could be felt to slide back into proper position. The pressure was kept up until the plaster had hardened, when the digital depression was, of course, permanent. (Fig. 1.)

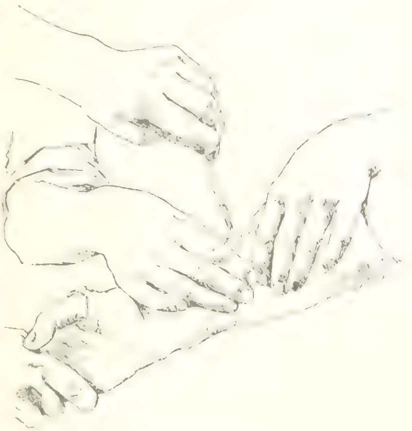

FIGURE I.

The pilot-bandage was then cut away, and the patient, who declared that his arm was more comfortable than it ever had been since the date of fracture, was sent home with his arm in a sling, and told to report the next day.

When he returned a fenestra was cut in the bandage, as shown in Figs. 2 and 3. This was done for the purpose of allowing inspection from time to time of the region of the fracture.

The pressure exerted by the depressions in the plaster appeared to have had no effect whatever in stopping the circulation of the parts, and the fragments seemed to be in perfect apposition. (Figs. 2 and 3.)

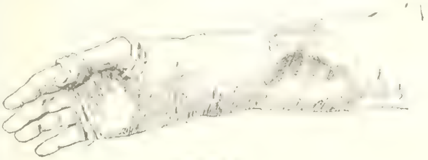

FIGURE II.

Twenty-one days after the plaster had been applied it was carefully removed and the union found to be firm and the apposition of fragments apparently exact. There was a narrow annular callus about the seat of the fracture. The plaster was re-applied, as a precautionary measure, and, in a short time, again removed, and the patient directed to use the hand. Improvement continued, and the result was in all particulars, satisfactory.

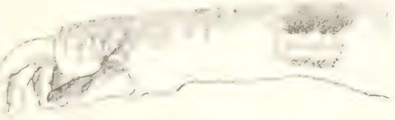

FIGURE III.

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[1] Read before the Suffolk District Medical Society, April [illegible].

I knew that the bone would probably have united readily enough under the old form of treatment, but with these hitherto uncontrollable fragments held in exact apposition by the depression in the plaster, I felt sure that the union would be accomplished with the minimum of deformity and the result, as it proved, justified my expectation.

This same method of using the depressed plaster, instead of pads was employed with excellent results in two cases of Colles' fracture at the Hospital; but, as this is a fracture which, after impaction has been broken up, is usually satisfactorily treated by ordinary splints, or, as some surgeons claim, by no splints at all, I do not use these cases as evidence in favor of the method here spoken of.

The plan, as carried out in the first case, was certainly highly satisfactory, and I see no reason why it should not be of use in certain fractures in other parts of the body, where the fragments cannot be kept in position by the ordinary methods now in use. Dr. T. A. Deblois tells me that a modification of this method has been occasionally used in treating fractures of the nose; but at the time the cases here reported were treated, I was not aware of its ever having been previously used in any case.

One of the attractive features of this method of applying pressure is that the fracture can be reduced after the bandage has been applied, and the fingers and thumbs can thus regulate the degree and distribution of the pressure to a nicety.

It seems to me that Messrs. Wynne and Duel have suggested a new and simple expedient which may occasionally be found of great use in the treatment of certain troublesome fractures after the ordinary means have failed.

Clinical Department.

CASES OF PNEUMOTHORAX.[1]

BY H. F. VICKERY, M.D.

On May 24, 1892, I was called to see Miss D. L., a rather delicate girl of nineteen, who had suddenly become very ill. As to the family history of the patient, her mother was robust; her father was not vigorous, but yet not suffering from any particular chronic disease; one sister had died of diphtheria, and an aunt of consumption.

Twelve days before I saw her, my patient noticed that she had to clear her throat oftener than usual; but she had no cough. Ten days later — two days before my visit — she had a slight hæmoptysis, followed in a few hours by a profuse one. She was apparently recovering from this as rapidly as could be expected, when in the night of the 23d–24th, she became suddenly cyanosed, and greatly distressed for breath. When I arrived, the heart was feeble and rapid, and demanded active stimulation. The chest presented the following condition: The left lung was normal, except for excessive, vicarious action. The heart was not displaced. The base of the right lung in front was tympanitic, and over it very little respiratory murmur was to be heard; but the heart-sounds were unusually audible in this region. The patient was too feeble to allow of examining the back. Dr. E. N. Whittier now saw the case in consultation with me. He also was struck by the remarkable transmission of the heart-sounds to the right, without any evidence of a consolidated lung. Nevertheless he concurred in a probable diagnosis of right pneumothorax, and he joined me in urging the removal of the patient to the Massachusetts General Hospital.

Accordingly, she was transferred thither, and entered Dr. Whittier's wards; where he very kindly invited me to see the girl with him, once more, in the afternoon of the same day. Hoping to relieve the dyspnœa, we inserted an aspirating needle in the lower part of the right chest. It entered a cavity, in which it could be freely moved about, and it is probable that we drew some air out of the thorax; but no fluid was obtained, nor was the patient rendered any less uncomfortable.

She did, however, benefit greatly by inhaling the oxygen which was ordered for her immediately upon her entrance to the hospital. It was given more or less continuously for the first twenty-four hours, and I think no one around her bed could doubt that it saved her life, at least for the time being.

After considerable improvement, however, fresh hæmorrhages occurred, the cough increased, tubercle bacilli were found in the expectoration, and on August 13th, after three months' illness, she died of pulmonary tuberculosis.

Around this case I should like to group a few others, some of which I have had the privilege of observing, but none of which have been under my own care. With one or two exceptions, to be hereafter noted, they have all been in charge of the Visiting Staff of the Massachusetts General Hospital, to whose courtesy I am indebted for permission to report them. It should be premised that it is not my endeavor to write a monograph upon the subject of pneumothorax, but merely to bring out a few interesting points.

One striking fact about the case just narrated was the abrupt onset of the trouble. The patient had had no real cough and only for ten days a slight hacking, when the hæmoptysis occurred, to be followed within forty-eight hours by the pneumothorax. A still more remarkable event is recorded by Lundie in the *Edinburgh Medical Journal*.[2] A lawyer's clerk, aged twenty, with a tubercular family history, but in apparent health, while sitting quietly at home after dinner, was seized with sudden severe pain in the left chest, and obliged to take to his bed at once, with left pneumothorax.

As regards etiology, my patient is an example of nine-tenths of all cases. Tubercular infiltrations, breaking down, open a communication between the bronchi and the pleural cavity. The tubercular focus need not necessarily be on the surface of the lung, however, for it may be connected with the pleural space by a sinus.[3]

The next most common cause is empyema, ulcerating into the lung. This was probably the mode of origin of a case of Dr. Gannett's: Case 2, Elizabeth S., whose father died of probable phthisis, had influenza in January, 1890, followed by pneumonia; after which it was said there was fluid in her chest. In May, she became much worse and had profuse expectoration, raised suddenly by mouthfuls. She was brought to the hospital June 7th, when the left chest presented the characteristic signs of amphoric breathing and metallic tinkling.

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[1] Read before the Suffolk District Medical Society, April 29, 1893.

[2] American Journal of Medical Sciences, February, 1892.

[3] Powell, quoted by Donaldson, Pepper, iii, p. 575.

That violent exertion is often the immediate cause of pneumothorax is, it seems to me, illustrated by the fact that four times as many men as women suffer from it. In the first case reported in this paper, its development may have been precipitated by the coughing occasioned by the hæmoptysis, or by violent vomiting, which repeatedly occurred after the blood appeared. Strümpell has seen it after hard rowing, and after hanging out clothes. Child-birth sometimes causes it. A phthisical patient who was in Dr. Gannett's wards last October, was attacked while laughing. A painter (Case 3) also tuberculous, aged thirty-four, who was under the care of Dr. S. L. Abbot in April, 1882, when I was a house-pupil, was carrying either a ladder or a sign-board, when he experienced the peculiar sudden pain and dyspnœa.

Another man, (Case 4), Fred P., aged twenty-two, who worked in a stable, and who came under Dr. Whittier's care, had been well till one month before he entered the hospital, when he began to have a slight cough, with scanty, yellowish-white expectoration. These symptoms had lasted three weeks when, as he was engaged in washing carriages, left pneumothorax developed.

His case, by the way, illustrated the capacity of the thoracic cavity, which a valvular pneumothorax is calculated to test very thoroughly. Upon his being tapped with a trocar and canula, to which a rubber tube was fastened, with its other extremity under water, a considerable volume of air rushed out, and also sixty ounces of serum. Eighteen days later, seventy-six ounces were removed.

In Dr. Abbot's case, also, the distention became enormous, driving the heart under the right nipple, and urgently demanded interference. It did not get it, because the patient's friends forbade any "operation" — so that a sudden syncope ended the poor fellow's sufferings.

While in the vast majority of cases, pneumothorax ensuing upon over-strain is really due to an antecedent pathological condition,[4] it exceptionally occurs in those who were perfectly healthy before and who make a good recovery. This was true in both of Strümpell's cases, already referred to.

Another cause of the condition is traumatism. A perforating wound of the thorax may produce it; but it is much more likely to do so if the lung itself is pierced.[5] It must have been in this way that the two cases quoted by Osler[6] were caused by a hypodermic needle. Thus also contusions, without external wounds, may occasion pneumothorax; or old pleural adhesions, being wrenched asunder, may tear into the pulmonary parenchyma, as shown by Professor Zahn of Geneva.[7]

Often these traumatic cases do well.

Matt H. (Case 5), aged twenty-two, born in Finland, came into Dr. Fitz's wards June 27, 1891. Two weeks before, a knife-blade had been thrust into the upper right front. There were tympany, absence of respiration, and depression of the upper limit of hepatic dulness, with displacement of the heart to the left. There was no interstitial emphysema. He was discharged, well, at the end of two months.

Michael V. (Case 6), a Dane who could speak no English, entered the hospital May 27, 1891, with a small bruise low down in the right axillary region. There was much air in the subcutaneous tissues; and there seemed to be air and a small amount of fluid in the right chest. He was discharged, well, in fifteen days after entrance. At no time could any fracture of the ribs be made out.

As a rule, no abnormal condition causes so great a displacement of the heart as pneumothorax. Yet in neither Case I nor Case 2 was the heart dislocated. The same is true of Case 7, Annie G., sent in by Drs. Fifield and Fitz, and under the care of Dr. Whittier. When seven months pregnant, she had pneumonia, miscarried, and was delirious for five weeks. She entered complaining of cough with expectoration, and tenderness in the left axilla. The heart was in its normal place. No metallic tinkling nor succussion sound could be obtained, but tympanitic resonance extended everywhere below the fifth rib in the left axilla and the same level in the back, with very feeble, distant respiratory murmur. Over this same area it was noted that the heart-sounds were universally audible. This patient was discharged a month after coming in, improved, and wrote, twelve days later, that she was "gaining fast," and able to do a little work.

For the heart's remaining stationary, an easy and natural explanation is that pericardial adhesions have already been formed, in these cases, before the pneumothorax occurs. In Lundie's case, above-mentioned, the heart was pushed backwards.

Why heart-sounds should be occasionally transmitted through spaces filled with air, as in cases 1 and 7, is not very clear. It might be attributed to conduction along the ribs; but if so, it does not require any great intra-thoracic pressure, for there was evidence of none in the first patient. Possibly the concave thorax, with the air beneath it, acts as a sounding-board.

With regard to the detection of pneumothorax, I have been much impressed by the latency of some cases, and the comparative comfort some individuals enjoy, while the victims of this serious disorder. If only one's suspicions are aroused, however, it is seldom difficult to make a diagnosis.

Cornelius D. (Case 8), a hod-carrier, twenty-eight years old, entered the hospital May 28, 1887. He was a patient of Dr. Shattuck. For a year he had had a cough, and some pain in the lower part of the left chest, but he had worked till two weeks before entrance, when a sudden aggravation of the pain drove him to bed. He had noticed a swashing sound in his chest for six weeks before he took to his bed — that is, he had been working as a hod-carrier for six weeks while suffering from hydro-pneumothorax. On one occasion, by the way, just after this patient had been tapped, a bubbling sound could be heard at the end of inspiration, between the lower angle of the scapula and the vertebral column, suggesting that the hole in his lung was situated, not at the apex, as usually happens, but low down.

The most remarkable instance of latency in this disease, of which I am aware, is familiar to a great many, for it is related in Flint's "Practice of Medicine" (Ed. 1881, p. 154). An accountant, eighteen years old, had had a slight cough for a year, but so slight that he had thought nothing of it, and regarded himself as being well, when he was taken ill with acute pneumonia, and was found to present, in addition, the signs of hydro-pneumothorax. He lived four days. An autopsy entirely confirmed the diagnosis and it revealed, beside, several phthisical cavities in the apex opposite the pneumothorax.

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[4] [illegible]

[5] [illegible]

[6] [illegible]

[7] [illegible]

In the matter of prognosis, the phthisical cases are very apt to die in a month or two, but still they need not abandon all hope. Fräntzel has lately emphasized this point.[8] It is also illustrated by a case of Dr. Cutler's (Case 9). Patrick S., age twenty-three, entered the hospital July 23d of this year. He had had a "kind of a cough" for six months, and had lost sixty pounds. There was pneumothorax on the left side, and tubercle bacilli were present in the sputum. Yet, at the end of a month, he had gained seven and a half pounds, could climb stairs very well without much dyspnœa, and left the hospital "much improved."

The value of tubercle bacilli as a factor in prognosis is self evident; but a negative result of a search for them will not, of course, enable us to exclude tuberculosis. Thus (Case 10) Wm. H., who came under Dr. Shattuck's care March 9, 1891, with pneumothorax, had his sputa examined twice for bacilli, and none were found; while at the fatal termination of his disease the autopsy revealed a cavity in the upper lobe on the affected side.

As to treatment, for the most part it is symptomatic. Morphine is often necessary. And oxygen may be invaluable. Aspiration must be employed with some discretion. We can not afford to delay when the intra-thoracic pressure threatens to paralyze the heart, and on the other hand we must beware lest too zealous efforts cause a re-opening of a newly-healed communication between the bronchi and the pleural cavity.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SECTION IN SURGERY.

C. L. SCUDDER, M.D., SECRETARY.

Meeting, Tuesday, June 13, 1892, **Dr. C. B. Porter** in the chair.

Dr. A. G. Gerster, of New York City, read a paper on

HOW SHOULD THE GENERAL PRACTITIONER DEAL WITH STRANGULATED HERNIA?[1]

Dr. C. C. Odlin, of Melrose: It has always seemed to me that he who participates in a public discussion, even if he be devoid of the necessary oratorical accessories to hold the attention of his audience, should at least have a thorough knowledge of the subject under consideration. This I must at once disclaim. It has seemed to me perhaps that the only reason why Dr. Porter asked me to take part in this discussion was that the words of wisdom which we have heard might shine more brilliantly in comparison with my ignorance; but if that be the case I shall endeavor to forgive the doctor, and try to make some remarks on the interesting paper which we have heard from Dr. Gerster upon how strangulated hernia should be treated by the general practitioner from the standpoint of a general practitioner. I remember very well, indeed, with what a sinking of the heart I was in the habit in my early days of responding to a call to see a person afflicted with irreducible hernia. I revolved in my mind the different coverings of the hernia — integument, intercolumnar fascia, fascia propria, etc.,— and by the time I got to the house those were a muddle in my brain. That was all nonsense: I know now it was, but I didn't know it then. Had I known it then, I should have been saved a good deal of mental anxiety and worry. It seems to me that when the general practitioner is called to a case of hernia he should go to that case with just two ideas in his mind, one is to reduce the hernia without operation if possible, the other is to reduce that hernia any way. Of course, we all understand that taxis is the first thing to attempt. Taxis, it seems to me, should not be prolonged, and should not be severe lest the subsequent bruising may interfere with the recovery of the patient if operation be finally necessary. Taxis may be assisted very much by the use of ether and the ether spray; and it seems to me also by placing the patient in the Trendelenburg position. If my memory serves me aright, this was first attempted by Dr. William J. Allen, a practitioner at White River Junction, Vt. He mounted the bed, lifted the hips and body, and allowed the head and shoulders to rest on the bed. The gut returned with that gurgle which is so pleasant for the practitioner to hear.

If taxis is unsuccessful, of course the question of operation at once comes up. I want to speak of three points which have occurred to me in the cases upon which I have operated. One is the point Dr. Gerster has spoken of: to be sure of the diagnosis. Quite a number of years ago a gentleman who was a patient of mine a long time, came into my office and showed me a very small bunch about the size of a pea in the left groin. I examined that as carefully as I could, and told him I was unable to determine whether it was the commencement of a hernia or whether it was an inguinal gland. As this gentleman was going into the city every day, I asked him to call upon a surgeon who made the subject of hernia a specialty. A few days afterwards he came to my office and said he had visited the gentleman, and had been told it was an enlarged gland and that no truss was necessary. Nearly a year later, while getting out of his buggy, this little bunch broke through, forming a protusion about the size of a hen's egg. I was summoned immediately, and found it impossible to reduce it. As I was called in the late evening, I packed the tumor in ice, thinking the cold, perhaps, would enable me to reduce it when morning came. As it was impossible to do so, I operated the next morning. There was no difficulty at all in returning the hernia; but the gentleman sank and died, apparently of exhaustion. That is a case in which I have felt, had I been acute enough to have distinguished that hernia in its commencement, a human life might have been saved.

Another point I wish to touch on may be spoken of perhaps in connection with another case. I was asked to see a woman about thirty years old afflicted with strangulated hernia. I advised immediate operation, and operated. The bowel moved freely after the operation, but the woman commenced to vomit; and she died, I think, on the fourth day. It seems to me, in the light of later experience, that the proper thing to do in a case like that is to perform laparotomy, feeling that there might be some obstruction farther up the intestine.

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[1] See page 61 of the Journal.

Schmidt's Jahrb., December, 1891.

The last point that I will speak of is that I do not think any one should hesitate to operate, no matter how unfavorable the conditions may seem to be. Some time ago, one hot day in July, I was asked to see an old woman of Irish extraction, about seventy years of age as near as I could tell. I found her in a hovel of two rooms, surrounded by pig-pens; hens were kept in the back part of the house. The room in which she lay was infested by hen lice. She had been vomiting four days at the time I saw her. I found a hernia about the size of the two fists. It seemed, certainly, as if no operation could benefit that woman; but I thought it my duty to give her what chance there might be. I endeavored to render her as aseptic as possible, etherized and operated. On getting down to the constriction, I found, in order to return this enormous mass, I had to cut to such an extent when the bowel was returned and the finger was removed, that the whole contents apparently of the abdomen poured out again. I never had such a condition before, and hardly knew how to proceed. I took a needle and silk, and sewed up the constriction, getting tissue from the internal iliacus muscle in which to catch my needle. The old lady was out in about a fortnight feeding her pigs; and since that experience I have felt that there are no conditions, no surroundings so bad that any physician should hesitate to give any patient the benefit of an operation.

It has seemed to me that there is no class of cases in which we have our surgical landmarks so clearly defined as in hernia; and I believe that any general practitioner with a cool head, fairly steady hand accustomed to the use of the surgical knife, and a clear conscience should not hesitate to operate upon a case of strangulated hernia, and that it would be criminal to allow a patient to die because a professional surgeon was not within reach.

Dr. William Bass, of Lowell: I appreciate very much the paper we have heard to-day, and there is not much left for me to say. The ground has been very well covered. In that paper it seems we have a right to infer that we are all experts in the matter of surgery and in operating on strangulated hernia, which unfortunately is not the case. I will admit that our school educates every young man in a manner that he should be competent to deal with strangulated hernia; but there are some of us a little timid, and we are not all located near the city or near some expert man in the matter of surgery, and we might have to rely, in some back town or some wood-chopper's camp, upon ourselves. Now what will such a man do? Of course, when he undertakes the practice of medicine and surgery, he assumes that he is competent to attend to the business. Now then, of course, he understands the anatomy of the case and has seen the operation done; but he never was called upon to do it himself. This is his first opportunity; and what shall he do? Perhaps he may be by candle-light in a hut. He has got a difficult task for himself; but there is only one thing for him to do. He cannot retreat. He must operate if he cannot reduce it with taxis and under the influence of ether; consequently he makes the best of it. If he has nothing but a pocket-case, he proceeds with that; and in these times he must make his patient as near aseptic as possible and himself and the surroundings, which might be a difficult matter to do. Well, of course, he must operate under the circumstances; and if he is of the character of a man I met the other day, he will do very well. I will mention the case, though it is a little off from the subject. I was notified that I was wanted to bring my tracheotomy tube, and I hurried as much as I thought necessary; and when I got there I found the young doctor in attendance had already operated. As luck would have it he had left his pocket-case at home. Some man about the house had a pocket-knife, and that was dull. They sharpened it; and the doctor took the pocket-knife, and opened the trachea and found he had no tube. They found a piece of rubber tubing, and that he inserted. Now then, if our country doctor is of that character, he will get along very well; and, of course, a general practitioner must of necessity, if he is going to make a success, be an all-around man, be a man prepared for emergencies. A specialist, if he is not a very smart man, can make a good practitioner of himself in some specialty. He has not so much ground to go over; but a general practitioner needs to be an extra smart man. As I said, I had not much to say; I wanted to help out this man in the backwoods a little. Now then, after he has operated, if he finds the gut gangrenous, about the best he can do is to make an artificial anus; and at some future time some man of more skill, or with assistance, can resect and remove the portions of the gut that are gangrenous and bring the intestine together and make a whole alimentary canal again.

Dr. H. H. A. Beach, of Boston: I have listened to Dr. Gerster's paper with the greatest possible interest. In twenty-six years' work in private and consultation practice and in hospital service I have seen most of the emergencies, most of the conditions that Dr. Gerster has spoken of. One great thing that has impressed itself upon me is the importance of an early diagnosis, an avoidance of excessive taxis — just the two main points Dr. Gerster has laid most stress upon; and I should hope he would have the thanks of the Society for laying aside the traditions of obsolete surgical work and really bringing the technique of the operation for herniotomy up to the standard of modern abdominal surgery. The essential points, are early diagnosis, avoidance of excessive taxis and prompt operation, restoration of the gut to the abdominal cavity without pulling and hauling, which can only be done by free and adequate surgical incisions, and the most complete antisepsis that is possible. It seems to me he puts the operation right on a line with the prompt and adequate treatment which can be applied to extra-uterine pregnancy and to appendicitis. Prompt action is the only thing that insures success. The disasters of the three diseases may be nine times out of ten attributed to delay in diagnosis, delay in operation, insufficient antisepsis and overthumbing, manipulation of the parts.

For one, I desire to express my warmest thanks to Dr. Gerster for his very interesting paper and the way he has put it before the Society for the general practitioner.

Dr. John Homans, of Boston: I am sorry to say I did not hear Dr. Gerster's paper, so that I cannot speak of the points he made. The subject, as I read it, was how should the general practitioner deal with strangulated hernia. I suppose the general practitioner in a case of strangulated hernia has got to act according to his ability. He must, if he is capable of doing it, operate and return the intestine if it is, in good condition, and try to cure the hernia at the same time. It seems to me that a general practitioner in a city could perfectly well avoid the case by sending the patient to the hospital or sending for a surgeon. In the country, where a man is more on his own resources and develops more in the operations than a man does in the city, he has got to face the music; and if he has a gangrenous bowel, he must excise it if he can do it. The general practitioner in the country is especially skilful, it has always seemed to me, in the treatment of fractures. He gets very good results. I do not know whether this paper goes into the general treatment of hernia. Certain cardinal points about the treatment of hernia are almost self-evident to one who has had experience. We get cases in the hospital after some one has squeezed them so that they are gangrenous both by delay and contusion. Indeed, I have seen a hospital surgeon squeeze a hernia with great force, and he has asked me to put my hands outside of his and squeeze; but the result was fatal. You have got to have a general practitioner, a good one and of some intelligence, to treat these cases; and if in the country he must meet all the emergencies, if in the city he can avoid them. I have no doubt the subject has been well described and the emergencies dealt with by Dr. Gerster, and I will not go into the general treatment of strangulated hernia. One of the most remarkable cases I know of strangulated umbilical hernia was one where Dr. Richardson removed some nine inches of the bowel, sewed the ends together, and the woman I think had a movement of the bowel within ten hours. You cannot expect every general practitioner to make an excision of the bowel with the skill of Dr. Richardson or of Dr. Gerster; but he must be prepared to meet emergencies, and particularly to recognize the fact that he must not lose time by taxis, particularly forcible taxis at the risk of doing a great deal of harm.

Dr. A. T. Cabot, of Boston: I was unfortunate in not hearing the first part of Dr. Gerster's paper in regard to taxis, and very probably he made a point I should wish to make — that one can be much more free with taxis in the very commencement of a hernia when it is new than later. In fact, I should almost say it was best to forego taxis altogether in a distinctly strangulated hernia, that had been down more than four or five days, in order to avoid the possibility of rupturing the very much weakened gut by the taxis. I had a case that illustrates how easily one of these guts can be ruptured. It was in a patient who came to the hospital with a hernia that was quite reducible, but with difficulty. He had had it a great many years and was in the habit of reducing it. This time it had been down a little longer and went back hard. Just afterward he was seized with violent pain, and brought to the hospital twenty-four hours later. I did immediate laparotomy, but the patient was almost moribund when we began, and lived only a few hours. The condition was a minute rupture the patient had made on his own gut in reducing it.

I was very much interested in what Dr. Gerster pointed out as a necessity for great caution in opening up the neck of the sac in cases which have been strangulated some little time, in which there is a strong possibility that the neck of the sac has been so nipped that there is a weakened line around the neck of the hernia where the gut is ready to give way. It is in those little herniæ, particularly at the femoral ring, where the danger is greatest. In large herniæ there is less danger of cutting at the constricting point than in the small herniæ. The gush of fæcal matter I have seen once or twice when the neck of the sac was divided. It is immediate and difficult to handle unless you have a large enough opening already to allow of the free escape of the fæces outwards.

It seems to me his recommendation that in all these cases the division should be from without inward is very pertinent, and it is one I shall put in practice more than I have hitherto done. I had a case a fortnight ago. The result was unfortunate. The hernia had been strangulated eight days and the gut was gangrenous. In that case, I opened up the neck in the way he describes, making really a laparotomy, cutting down above the neck of the sac and incising through the neck rapidly and pulling the gut outside at once. I secured it out by drawing a strand of iodoform gauze through the mesentery to hold it back, and surrounded that iodoform gauze in the manner he describes, but the patient lived only two days. She was an old woman and very much exhausted. I think the point he makes is a very good one and I shall certainly be encouraged by his precept to follow it up more fully, coming down on the neck of the sac with the eyes upon it, so that if there is a little line of gangrene you can at once see it and treat it with consideration.

Dr. C. B. Porter, of Boston: I don't think it is customary for the chairman to make remarks upon the subject of the paper, but there are one or two things I should like to speak of. Dr. Gerster considers the question of the action of the general practitioner, and lays great stress upon the highly antiseptic condition to which the patient and the operator should be brought, and it seems to me if I can say just one word in regard to what a country practitioner did in a case I afterwards saw, it would help perhaps some one placed in the same unfortunate circumstances. A patient met with a railroad injury, which produced a compound and comminuted fracture of the patella. He was at a distance from a surgeon, but he was under the care of a good common-sense man, who understood details if he could not carry them out. He had no antiseptics by which he could render anything sterile, but he had boiled water and soap, and he rendered the parts thoroughly aseptic by scrubbing with boiled water and soap and scrubbing his own hands, and he laid open the knee-joint as for incision, put the flap back into place, and sent the patient to the hospital with the wound practically healed. He had none of the necessary things about him to do this operation, but he did it practically aseptically by getting his own hands clean, the field of operation clean, and operating under these circumstances. I certainly was impressed in connection with the paper with regard to the stress laid upon early operation and upon the use of slight taxis. I do not want to say anything further on that myself. It seems to me that there is where the general practitioner fails more often in dealing with this subject than in any other, in the first place, in not recognizing the fact that a strangulation which will not take care of itself must have assistance; therefore the sooner it has it the better. I think it has been very aptly compared by Dr. Beach to appendicitis and to extra-uterine pregnancy.

Dr. Gerster, of New York: I shall have very few things to add to what was said by myself and the gentlemen here who were kind enough to join in the discussion, and I see only one thing noted down that I believe is worth while bringing up once more, and that is the remark made by Dr. Odlin. He said, if I understood rightly, if he had done a herniotomy and the patient continued to vomit that he would not hesitate to do a second laparotomy. I believe that that is a suggestion worthy of attention, and a suggestion along the lines of which surgeons have already tried to walk; but let me tell you that they have not always been successful. I have seen a number of cases where the intestine was found to be in a normal condition, where it was reduced, where no complication arose during the course of the operation, where we expected immediate relief from the vomiting. It is a charming thing to see, in a man who was vomiting every two or three minutes, the moment the constricting band is divided all these disagreeable and distressing symptoms cease. Now when we see that this is not the case, there is grave trouble present; and I am sorry to say it is very frequently a trouble which is not within the pale of a surgeon's help. It is very distressing after we have performed a good operation and made a favorable prognosis, which is the most disagreeable part of the whole thing, to see the patient go on vomiting as if no operation had been performed, and ultimately go from bad to worse and die; and it is worth our while to know why that is the case.

Do not let us misunderstand each other. I do not mean cases in which the surgeon performed the herniotomy correctly as far as the technique of the operation is concerned, where the strangulation was relieved, the bowel replaced, where the surgeon has infected the wound and caused a septic peritonitis. I mean something quite different, and to explain to you what I mean I shall illustrate by a case which I am sorry to say occurred to me only recently, and the memory of it is imbedded in my mind in deep letters. The hernia had been strangulated a long time and there is the essential part, the longer the strangulation has existed the more probable this occurrence, and it illustrates the serious effects of long-continued strangulation — not only upon the strangulated gut, not only upon that part of the strangulated gut which is actually constricted, but upon the entire intestinal tract and upon the entire system of the patient. You may find a case of that kind and the gut not gangrenous, the obstruction in the gut due (as was in this case) to the presence of a square piece of potato which was within that portion of the gut which had left the abdominal cavity and by its mechanical presence obstructed the flow of the intestinal contents. The walls of the gut were normal, slightly congested, but no signs of gangrene; and I believe gangrene would never have come in that case. He died, not from strangulation but something else. The hernia was cut down upon, that hard body was found in the knuckle of gut, crushed between the fingers, put out of the way, and the moment that was done the gut slipped back so that I had to catch it in order to have a chance to examine it. I withdrew the gut without difficulty, showing there was no real strangulation. It was an obstruction by flexion caused by this foreign body. I mean by flexion that condition you observe in a rubber-tube which you bend. You see a knuckle forms and no amount of pressure will force liquid through that bent portion of the rubber-tube. Just as the rubber-tube is bent and occluded so the intestine is bent and occluded and the symptoms are practically those of obstruction. The intestine was examined, found to be normal and reduced. I withdrew from the family giving a favorable prognosis; and I was very much set back when I came the next morning and heard the patient had been continually vomiting fæcal matter as before the operation. The obstruction had lasted five days. I said to myself, in the presence of these facts, knowing that I had reduced the trouble within the hernia, there must be some cause of obstruction higher up than the hernia was situated. The hernia contained a part of the small intestine, what part I could not say then. Seeing the patient continually vomiting matter that was feculent, liquid material, I at once suggested that we open the abdominal cavity, expose that portion of the gut which was just above the inguinal region, if possible hunt up the knuckle that was contained in the hernia and then try to find the cause of this obstructive condition. This was agreed to, and the hernial aperture was reopened, incision extended, and I satisfied myself that there was no portion of the intestine that had again entered into the wound. No radical operation was performed, and the contiguous portion of the intestine was easily found and exposed. I failed to find any signs of constriction; but I noticed that although there was no constriction present, that portion of the small intestine leading away from the knuckle that occupied the hernia was shrunken up and empty, whereas that portion leading to the knuckle from above was distended enormously, contained a large quantity of gas and liquid fæces. The walls of the intestine were very much thickened, œdematous, the mesentery was congested, (intensely so), as was the entire intestine; and although I could not find any constriction, I saw how far the trouble extended down to the knuckle contained in the hernia. Now there were all the symptoms of obstruction of the intestine and no cause for it whatever. I enlarged my incision, and brought out more of the intestine; as far as I could follow, I found this identical state. I said, "I never have seen anything of this kind"; replaced the intestine; closed the wound; and fell back upon symptomatic treatment in the good old-fashioned way, which resulted in the good old-fashioned way — in the death of the patient.

Post-mortem, we found that in this case the only cause of the persistent vomiting of the patient and of his ultimate exhaustion and death was nothing but an intense congestion or rather a paralysis of the afferent or proximal portion of the small intestine due to the intense congestion which was started and to the prolonged retention or stenosis of the contents of the gut. In addition to that there were reasons to assume that there was also sepsis present, not due to the herniotomy, but rather to exosmosis of the intestinal contents, that is passing through the congested and abnormal intestinal walls of infectious material into the peritoneal cavity. It has been established by experiment on animals, that when the intestine becomes congested and inflamed, not only paralysis of its muscular coat and enormous distention of the intestine and inability to propel its contents result, but that the infectious bacilli contained within the intestine, within the fæces, will find their way out through the intestinal walls into the peritoneal cavity and produce an intense peritonitis; and I believe that in this unfortunate case we have seen a counterpart of the experiment which has been performed repeatedly on the animal. I believe this man died in consequence, first, of paralysis of the afferent or proximal portion of the small intestine, of exosmotic peritonitis, although we did not find sufficient reason to make the diagnosis of peritonitis as we used to make it ten or fifteen years ago, when we believed it could be diagnosticated only where the intestinal coils were agglutinated, etc. Nowadays we see patients die, after a laparotomy, with all the symptoms of peritonitis, and we find post-mortem a slight serous exudation, sometimes not even turbid, and a very moderate amount of hyperæmia of the peritoneum. Many of these cases have been in the early days of laparotomy classed under the name of shock, and wrongfully. Nowadays we know these cases are septic peritonitis.

Dr. Cabot: In regard to the treatment by the general practitioner where he has sent for the surgeon, I would say that it has occurred to me to be called several times to such cases, in which I should have been very thankful if the general practitioner had prepared the field of operation for the surgeon. I think it would have been a very great assistance; and if general practitioners who do not intend to operate and have sent for surgeons would always apply an antiseptic packing over the field of operation, anticipating the surgeon's arrival, I think it would help the result very much.

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SUFFOLK DISTRICT MEDICAL SOCIETY.

JAMES J. MINOT, M.D., SECRETARY.

Annual meeting, Saturday, April 29, 1893, Dr. E. N. Whittier, President, in the chair.

Dr. H. F. Vickery read a paper on

CASES OF PNEUMOTHORAX.[1]

Dr. A. L. Mason: I should like to ask the reader if, in cases of pneumothorax, he would not expect usually to find pus in the cavity as well.

Dr. Vickery: Yes sir; I should say that was true in a large number of cases, but it is not a rule, without exception. I did not mean to imply anything about that in the paper.

Dr Mason: I ask because the question often arises as to the propriety of a permanent opening and drainage; as to whether these phthisical patients may be benefited by removing the pressure of the air and fluid by permanent drainage. As a rule, it is not advisable. I have in mind a number of cases in which the patients have insisted on something radical being done and in which life was prolonged perhaps by drainage and subsequent occasional washings. If the pulmonary fistula cannot close, there is no chance for lung expansion and such cases are not suitable for resection of ribs. When the pneumothorax is circumscribed as a result of pulmonary abscess or of empyema with perforation of the bronchi, drainage is absolutely necessary. Two or three such cases I have observed at the hospital with permanent cure, those cases being probably non-tubercular. I think that one of the cases that Dr. Vickery mentioned was of that kind.

Dr. Elliot read a paper on

HYSTERECTOMY FOR FIBROIDS, WITH CASES.[2]

Dr. Homans: I will try to avoid the narration of cases and to talk about the general subject. In the first place, in regard to the frequency of fibroids. In the last fifteen years I have seen six hundred cases of fibroids. I have operated on about sixty-five of these. That seems a small percentage, and very likely I ought to have operated on as many more, but some of these patients come once and I am in doubt whether to operate and I never see them again. In the last six weeks I have operated on nine cases. Now if one man has seen six hundred cases in fifteen years, it is rather a frequent disease. Sometimes these tumors, if not very large, disappear after pregnancy. I have seen such a case in the wife of a friend of mine. The woman became pregnant, aborted at about the sixth month and the tumor entirely disappeared.

The question of diagnosis is important. I saw a lady who was sent to me by a distinguished accoucheur with the diagnosis of fibroid to be removed. I examined her carefully and said I thought she was pregnant, which proved to be the case, and she was delivered at full term. The diagnosis, of course, is very important in these cases.

In regard to the size of these tumors. Sometimes the small ones cause as much trouble as the big ones. I have removed a small tumor not bigger than a horse-chestnut, because the lady could not sit down. She felt, as she said, as if she was sitting on a spool all the time. I opened the abdomen, removed the tumor from the posterior face of the uterus and she did perfectly well, and was entirely relieved.

Another cause for removal is hæmorrhage, another is pain and another the position of the growth. The reason I removed the tumor which I now pass around was on account of pain. The woman was about thirty years of age, and her life had been one of suffering for about six years. In operating I had to enucleate the tumor and treat the stump intraperitoneally. The operation took two hours and everything was removed except the button of the uterus just inside the vaginal septum. I could not drag up the tumor so as to put the wire under it. Both ovaries had a brownish-looking fluid in them which I thought might be dermoid, but they have not been examined as yet.

In regard to the treatment of these tumors. Having operated a good deal up to 1888, I got a letter from Dr. Keith, of Edinburgh, saying I must lay down my knife for fibroids, and that Apostoli's method would cure them. I got Apostoli's book and for eighteen months I worked at this tiresome and tedious process. It almost always stops the hæmorrhage, particularly if it is used at or near the menopause, the two causes combined, the electricity and the menopause, are very apt to cause a cessation of bleeding and sometimes a diminution in the tumor. I have never seen but one tumor disappear and it was in a woman who had only two treatments. How much the treatment had to do with it I don't know, but two years later the tumor had entirely disappeared. The Apostoli treatment will relieve pain in a good many cases. In a certain number of cases it will apparently arrest the growth, but it is unreliable.

Dr. Elliot spoke of the tendency of these tumors to become malignant. Whether they become malignant or the uterus becomes malignant, I don't know, because I have had no autopsies. I have operated on a lady over seventy, for a large ovarian tumor and at the operation have found a fibroid entirely calcareous. I did not meddle with it. Three years afterwards she developed hæmorrhage and now has cancer of the uterus. I have seen that same thing occur in, I think, two other cases.

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[1] See page [illegible] of the Journal.

[2] See page [illegible] of the Journal.

Sometimes, as you know, these tumors are extruded by coming through the vagina. I remember a case where I removed the ovaries for the cure of the fibroid. The woman had extensive hæmorrhage and I removed both ovaries and tubes. The hæmorrhage continued. At the end of two years she came again and the tumor was protruding through the [illegible] and I removed it. Nature had cured her and she had lost her ovaries unnecessarily. I saw another lady whose husband asked me to have Dr. Keith come over from Scotland to see her. He came and advised against an operation. Within two years the tumor was extruded and was removed through the vagina. If you could tell whether these tumors were going to grow, or remain quiescent, or to be extruded, of course you would know when to operate and when not. Each case has to be determined on its own merits, and there ought not to be any rule that all uterine fibroids should be removed or should not be removed. Treatment by removal of the ovaries I think has been very much abandoned. Another lady I operated on for a fibroid successfully by the extraperitoneal method, and she subsequently developed cancer in the neighborhood of the scar and stump.

Dr. Elliot has spoken of the Trendelenburg position which is extremely useful. I could not have done anything without it in the removal of the tumor I have just shown you. The Trendelenburg position is one of the greatest advances of modern surgery. Some of my cases I have watched from five to thirteen years, and I intend to look up all my cases and see what has been the result in those who have had no treatment and in those who have been treated. Some of them I have watched and seen the tumors disappear of themselves. In some the tumor has not grown much larger and in some I have erred in not operating and they have been operated on by others. Some I have seen remain about the same. If there are no symptoms of hæmorrhage or excessive pain, frequent micturition or emaciation, I generally ask these people to come to see me once in six months and I am ready in that way to interfere if necessary. In some I have advised immediate operation.

The mortality of the operation is now much smaller than it used to be. I have operated on sixty-five cases with fourteen deaths. Forty-nine were treated extraperitoneally, sixteen intraperitoneally. The extraperitoneal had ten deaths and the intraperitoneal four. Now before 1887 I had done twenty-seven operations with seventeen recoveries and ten deaths, so that that makes my whole statistics, which of late years have been very good, much less good than it would have been if I had been able to operate better some years ago and had had better cases. The largest tumor I remember to have removed weighed fifty-two pounds. The patient recovered and has been well ever since.

The treatment by the intraperitoneal method has been very much improved of late years and can now be done in the majority of cases if the surgeon chooses to. The extraperitoneal treatment by the wire is quicker and saves a good deal of shock and a long operation, but the convalescence is long and tedious. What operation leaves the patient in the best condition as to future comfort is not yet determined.

For about a year and a half I treated all the patients who came to me by the Apostoli method, but it is a method requiring a person of an extremely calm, patient and sanguine temperament to practise it.

It is a very trying thing for the patient to have a severe cough after one of these operations. A week ago I operated on a woman at the hospital and found a hard mass in the umbilicus. The umbilicus is a frequent seat of cancer, so in doing the operation I cut out the umbilicus with its contained growth, on which I have not yet had a report. Two nights ago the woman had a severe attack of coughing. This place gave way and the bowels and omentum protruded. They were put back and the wound sewed up. I am going to operate Monday on a woman on whom I operated a year ago and the woman has a hernia from the scar where the wire came off.

There is another reason for operating on these tumors, and that is, they sometimes become entirely separated from the uterus. I have seen them sometimes with a small pedicle, but they sometimes become *entirely* detached from the uterus and are nourished by their adhesions. Those tumors are dangerous and I have seen one of them produce fatal strangulated hernia, from the intestine passing through a gap between the adhesions where the vessels came from the intestine, so that a movable tumor of the abdomen which you cannot locate as connected with any viscera ought to be explored to see if it is a wandering fibroid.

With the extraperitoneal treatment I have lately adopted the following method of treating the stump. I have, at the end of ten days, given the patient a little chloroform and tightened up the wire, and if the wire does not break the stump is cut off and drops back. I think this is better than cutting it off with the scissors or knife which is sometimes followed by hæmorrhage.

I do not know that it is worth while to go into the symptoms and sensations that people feel who have lost their uterus and ovaries. They suffer from hot flashes, whatever that means. The sensation is as if a lot of hot blood rushed to the head. Some have it once a day and some every five minutes. It is very troublesome and trying. I suppose after a year or so it subsides. Most patients grow fat.

I would then say that if a patient suffers from excessive and severe pain, suffers from hæmorrhage, if the tumor is evidently growing, if the woman cannot stand the tumor on account of its looks, or if it embarrasses her, although she may have no pain or hæmorrhage, so that she cannot stoop down to lace her boots and cannot walk with ease, then I think the tumor should be removed. I think the woman has a right to have the tumor removed for the looks if she chooses to. Where there is any doubt in my mind I ask them to come again and I try to keep up correspondence with them, but I have almost entirely abandoned the Apostoli treatment and I think I operate now for the removal of these tumors oftener than I used to.

Dr. Mixter showed a fibroid he had recently removed and said: This tumor is very much smaller than when it was first removed, as it was one of the so-called juicy fibroids, very œdematous, the whole thing weighing about thirty pounds. It is very flabby and at the time of operation it was filled with fluid and perhaps as large as it is now. This patient had carried this tumor for eighteen years and about eleven years ago she consulted surgeons in Boston and New York who advised against removal. Since then it has grown slowly, she now is thirty-nine years old and she could hardly carry this tumor around. She could not turn over in bed without lifting the mass, she was very much emaciated and had had two very severe hæmorrhages during the past year, which had almost proved fatal. The operation was an easy one comparatively. There were few adhesions. The stump was treated intraperitoneally. I had hoped that Dr. Elliot would say something about the treatment of the stump and it was on that subject that I wished to speak in connection with this tumor. I can only say that this stump was treated intraperitoneally in one way, that is, as much of the peritoneum as possible was sewn over the stump, the uterine arteries being tied, one of them outside of the ureter, the ureter being found first and then the uterine artery and veins tied and then a safety suture being passed through the stump it was dropped back and packed around with iodoform gauze, thus completely shutting it off from the general cavity of the peritoneum and any hæmorrhage taking place would come up from the lower end of the wound. Two stitches were left untied and so in case of hæmorrhage it is easy to pull up the stump. No hæmorrhage took place. The gauze was removed at the end of forty-eight hours and the remaining stitches tied. There has been no suppuration whatever and the patient is perfectly well, normal temperature and pulse, and I think will be sitting up within a few days. I have never seen any reason for keeping patients in bed after laparotomy any great length of time, unless there is some open wound. In this case I think ten days will be sufficient.

The tumor is interesting, as showing these large divisions and lobules, which could be easily felt through the abdominal wall. Here is one of the ovaries which is concealed by them. The other ovary was free. The whole of the uterus, with the exception of a very small button, was removed at the time. The length of the pedicle was interesting in this case, showing how a tumor, carried as long as this one, stretches out the pedicle sometimes and it looked not much larger than an ordinary ovarian pedicle. As you see this is not now a particularly large tumor.

The treatment of the pedicle is where one has to use, perhaps, more judgment than in any other part of the operation. There is no one method applicable to all cases and there are three or four which can be used with advantage under certain circumstances.

Dr. Cushing: I think that one of the greatest advances in the whole question of fibroids, has come up recently, in the improved intraperitoneal method of treatment of the stump. The previous treatment by Schrœder's method was by merely tying two flaps together by force of ligatures, which often were too tight and liable to cause sloughing, or too loose, and thus permitting loss of blood. The extraperitoneal treatment by the wire or rubber ligature was therefore usually preferred, except in Berlin; this is a rapid way of getting through the operation, but makes a long convalescence, and as it was formerly used, the pedicle being very large, was apt to cause a sloughing stump. Recently, however, there has been a great improvement in forming the pedicle, either with the wire or with the internal treatment. No matter whether the tumor is above or below the peritoneum, most of it can finally be reduced to a little pedicle. By tying the uterine arteries on the side, the bleeding can be entirely stopped. That idea I think was first introduced by Chrobate, who advised tying the uterine arteries on each side, dilating the cervix and pulling a wick of gauze through it from above downward and then closing the flaps of the pedicle together and matching the peritoneum over it. It makes a nice little stump like that of an ovarian tumor. The first three cases I did by Schrœder's method in 1887, died, then I treated extraperitoneally twenty-five cases with twenty per cent. of deaths. I lost two, the last of these cases, last summer, without any reason I could see except obstruction of the bowels. I concluded to use the intraperitoneal method just described. I have operated on twelve cases in this way. All recovered without trouble. The convalescence is shorter, the pain less, and the operation not very much longer. It is often important, I think, to use a temporary rubber ligature in forming the pedicle, as it is much easier to tie the uterine arteries after the pedicle is formed and the mass of the stump is removed, than it would be previously. I will not discuss the total removal of the cervix at this time; I have done it, but prefer the method described above.

I agree with what Dr. Homans has said in regard to the indications: the pain, the pressure, the hæmorrhage, the growth and even the desire of the patient to be rid of the tumor. If there is any one thing well settled in modern times it is that a fibroid tumor is not the innocent thing it was formerly supposed to be. A common impression in the minds of the profession as well as of the public, is that nine-tenths of these tumors will go away at the menopause. Probably the ones I see are those which do not go away. I often see a woman with a tumor that begins to grow at the menopause. A fibroid tumor which has begun to grow at about the menopause is one of the most dangerous things a woman can have, and the sooner it is removed the better, in my judgment. With the modern methods of treating the stump, there is no more danger in removing a fibroid than in removing any ovarian tumor, and I think the whole trend of expert opinion is towards removing earlier, if the patient consents; not to wait until she is run down, until pressure of important organs occurs, but to remove the tumor early. I have three patients on whom I operated week before last, one for hæmorrhage, one with a tumor retroverted and bound down by adhesions and pressing on the rectum, and the third for pressure on the ureters and renal colic at times and symptoms which showed, if it went on much longer, it would be a very serious matter.

As for the Apostoli treatment I used that faithfully in several cases and I have had to operate on some of those same patients since. I have had the same experience as Dr. Homans and have given it up. To use this treatment properly and without danger, requires a very great amount of most delicate and careful antiseptic work. I have seen plenty of cases where patients have been made worse, abscesses have formed, infection of the tubes has been set up, which was reasonably attributable to the Apostoli treatment, or the attempt to use it. I think it is a form of treatment which does not belong to the active surgeon, but to the careful work of the office practitioner.

Dr. Homans: In reference to what Dr. Mixter said in regard to keeping patients in bed after a laparotomy, I have a patient from whom I removed a fibroid about four weeks ago by means of the Mixter clamp. This woman has got up almost every night since the operation and wandered about and the night nurse has found her up and about with this thing dangling from the stump. It has not done her any harm.

Dr. Elliot: Dr. Homans mentioned a case to me either privately or to-night, where he took out the stitches on the eighth day and the patient coughed the intestines out. This shows it is not safe to let a patient up on the tenth day. I think there is danger of hernia in letting the patient up before three weeks after hysterectomy. I let them up in two weeks after a simple ovariotomy.

Dr. Mixter: It seems to me that under certain circumstances it is well to keep the patient in bed. If, however, the incision has been closed completely and apposition has been good with a tight swathe and suitable padding and the abdomen not distended by gas, there is very little more pressure with the patient in the erect position than in bed and moving around. I have never seen any harm from such a course. I do not believe in keeping patients in bed after any surgical operation longer than is absolutely necessary. In breast operations I think it is well to get them out of bed the second or third day. Their convalescence is much more rapid.

Dr. Elliot: The intra-abdominal pressure on the abdominal wound is immensely increased when the patient stands. There is the weight of the intestines and the pressure of breathing comes down and out. Some laparotomists have reported five per cent. or six per cent. of hernias. I am sure it is an everpresent danger and I think one cannot take too much care. So far as the menopause goes, my experience would agree with that of Dr. Cushing.

Dr. G. H. Monks showed

A METHOD FOR APPROXIMATING THE FRAGMENTS IN A CASE OF FRACTURE OF THE RADIUS AND KEEPING THEM IN POSITION.[3]

recently used at the City Hospital.

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Recent Literature.

Public Health Problems. By J. F. J. Sykes, B.Sc., M.B. London and New York: Walter Scott and Chas. Scribner's Sons. 1892.

This compact but comprehensive book is one of the Contemporary Science Series edited by Havelock Ellis. The author is the medical officer of health of one of the populous London districts, and has brought together in this volume his views upon matters pertaining to public health in a philosophical as well as practical manner.

The author's line of argument is foreshadowed in the following extract from the introductory chapter:

"Public health in its later developments has realized that it could never hope to satisfy its aspirations by the prolongation of the existence of the more favored members of the community. Its greatest justification lies in increasing the health and power of the workers, and especially of the industrial classes, those less able to help themselves. It is distinctly socialistic in its tendencies, as distinguished from individualistic: it is, in the widest sense, humanitarian. . . . It is well-nigh impossible to form an adequate conception of the problems involved in defending the health of a population without having in mind the various elements that undermine and overpower it."

The subject is treated under four general divisions, with special chapters under each. The general divisions are as follows: Internal and External Influences upon Health, Communicable Diseases, Defensive Measures against Communicable Diseases, the Urban Dwelling.

Mr. Edwin Chadwick, whose writings have everywhere won respect for their candor and practical utility, is to the author an "amiable enthusiast."

Chapters upon Air, Water, Sewer-Gas, Cemeteries, Public Funerals, Meat, Milk and Infectious Diseases are all devoted to the same line of argument; and while there is a grain of wheat among the chaff, the author often strides beyond the boundaries, not only of truth, but those of common-sense. For example, on page 113 he says: "We are forced to the conclusion that there are no better tests for drinking-water than our first parents possessed; and that the instincts, taste and experience of a committee of farmers, mechanics or intelligent housewives are more to be depended on in the selection of a public water-supply, than are the so-called scientific tests of the sanitarians."

In his belief as to the actual causes of epidemic diseases the author does not appear to have made much progress beyond the "vagaries" of Noah Webster, whose volumes on "Pestilences" (1799) he freely quotes. "Mr. Webster *thought*," says he, "that there was not much doubt that yellow fever was a pestilence among the Indians before the landing of the Pilgrims. He did not believe that it was contagious." If this is a sample of the author's scientific investigation, it is no better than that of the sanitarians whom he criticises.

He, however, apologizes for a vigorous style as follows: "If, sometimes, the author has betrayed a warmth of expression, it is because of natural indignation that he had not only been the dupe of noisy men who were posing as scientists, but that through their teachings he had been the instrument of duping others."

Vagaries of Sanitary Science. By F. L. Dibble, M.D. Pp. 462. Philadelphia: J. B. Lippincott Co. 1893.

The chief object and aim of this remarkable book appears to be to break down the doctrine of the causation of disease by filth. So far as the author refers to the popular notion that filth causes certain infectious diseases *per se* he is undoubtedly correct in his criticism. It is scarcely twenty years since Mr. Simon, the chief medical officer of the Privy Council of England, published his tract upon "Filth-Diseases and their Prevention"; but since that time the progress of scientific investigation has shown that it is not merely filth which causes disease, but specific filth, or filth in which the germs of disease have been implanted.

Dr. Dibble quotes very fully from the health authorities of all countries, past and present, in support of his views. He is especially severe in his comments upon American Health Reports, both State and local, and says he "was struck with astonishment at the almost utter barrenness, on the part of sanitarians, of anything like scientific investigation."

The files of volumes of these reports are to him a jumble of conflicting theories unsupported by fact and observation. "None of them," says the author, "(if we except the Massachusetts Board) prosecutes any researches into the etiology of epidemic disease that deserve to be called scientific."

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[3] [illegible]

THE BOSTON

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283 Washington Street, Boston, Mass.

CONSANGUINEOUS MARRIAGES.

There has from antiquity been a general belief, supported by some physiological considerations, that marriages between near relatives are likely to be followed by deterioration and degeneration in the offspring. It has been maintained that by such unions ancestral and family imperfections would not only be perpetuated, but raised to their highest potency.

That this holds good in the transmission of nervous diseases, no physician doubts; and the offspring of parents who are both markedly neurotic, will, unless favored by unusual fortifying circumstances, almost certainly be neuropathic.

A similar affirmation may be made regarding constitutional diseases, such as gout, tuberculosis and carcinoma.

Consanguinity and affinity have been at different times and in different parts of the world, looked upon as impediments to marriage between the parties related. The Roman law prohibited marriages between ascendants and descendants, between brothers and sisters, and at one time between cousins-German; and the old canon law and early *decretals* forbade marriages between persons as far removed as the seventh degree of consanguinity. Doubtless, on the other hand, in very early stages of society, marriages between near relatives were the rule.

The question has been asked whether, when both parents are absolutely sound and healthy, consanguineous unions are detrimental to the offspring, entailing constitutional defects.

De Sinety, in a recent work on sterility, discusses the question in the light of many interesting facts. We can, he says, only judge of the results of consanguineous marriages by the quality of the progeny. We have, to-day, at our disposal, to decide the question, a certain number of examples which seem to be exceedingly pertinent. There are certain fishing-stations on the coasts of France where the seafaring population live in the neighborhood of a rural population without contracting marriages with them. In the commune of Batz, in the Loire Inférieure, composed of 3,000 inhabitants, there has been frequent intermarrying for a great many years among near relatives of a dozen or so of families. With regard to most of them, the relationship is of the third to the fifth degree; and yet all, men and women alike, are robust, of good stature, firm health, and the children are numerous and healthy.

Many more observations of a similar nature might be cited, from which it would appear that consanguinity of itself is not especially detrimental to the progeny. As Sanson says, consanguinity raises heredity to its highest power by causing to act in the same direction *atavism*, or the disposition to revert to ancestral qualities and individual peculiarities.

If, then, the parents are vigorous, well developed physically and mentally, these qualities accumulate in their descendants and the influence of consanguinity in such an event is favorable to the species.

If the progenitors are, on the contrary, sickly, or present any pathological defect whatever, the hereditary vices of the two families are transmitted to posterity and the action of consanguinity is then detrimental.

WATER-FILTRATION AND CHOLERA.

On another page we present a letter from Hamburg from a special correspondent well qualified to impart the information which the letter conveys. The comparative experience of Hamburg and Altona in regard to cholera last summer is interesting and important. Attention is called to the comparative immunity of Altona, for which the system of sand and gravel filtration of the Elbe water there and then practised is given credit. A similar system has lately been put in operation for Hamburg proper; and the city — of which Altona is practically a *vorstadt* or suburb — is now furnished with a water-supply similarly treated to that at Altona, and originally somewhat better. Reference is made by our correspondent to Koch's statements in regard to water-filtration and cholera. The result of Koch's investigation into this subject appeared in a paper or lecture,[1] which is exciting attention and comment in various quarters.[2]

After reviewing the situation last summer, Koch takes the ground that the difference between Hamburg and Altona in respect to cholera can be explained in no other way than by the difference in the water-supply, and that Altona was protected by the filtration of the Elbe water. He does not, however, conclude from this that a sand and gravel filter is a safe and sufficient protection against cholera or other bacilli in a water-supply. The real protection, he thinks, lay in the slimy film or coating on top of the filter — a coating which consisted of the deposit of river mud, organic matter, *débris* and micro-organisms. When this coating was ultimately broken, cases of cholera were developed in Altona.

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[1] Zeitschr. f. Hyg. u. Infections Krankheiten, Bd. 14, pp. 393-426; Deutsch. Med. Wochschr., No. 24, p. 577, 1893.

[2] Cholera Causation and Prevention at Home and at Hamburg, R. Thorne Thorne, M.B., F.R.S., Lancet, July 1, 1893, p. 50; July 8, 1893, p. 94.

We shall undoubtedly hear more of this subject. An able engineer, small filters, and a moderate rate of filtration are recognized as three requisites for insuring good results. The new Hamburg filters are regarded as large filters.

The recent long-continued period of drought in England has called renewed attention to the best methods of treating water-supplies, and especially that of London, in regard to which a royal commission is now taking evidence, preliminary to a report.

In the mean time neither the example of Altona nor anything in the statements of Koch justify reliance upon the sand and gravel or the ordinary domestic filters *per se*, as protections against cholera or typhoid fever.

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MEDICAL NOTES.

Walker Prizes. — One of the subjects for the Walker Prizes next year is "Experiments affording Evidence for or against the Theory of Evolution."

Ohio State Medical Society. — At the last meeting of the Ohio State Medical Society, N. P. Dandridge, M.D., of Cincinnati, was elected President, and Thomas Hubbard, M.D., of Toledo, Secretary.

The Birth-rate of Paris. — According to the report of vital statistics in Paris, the last week of June, there were 1,292 births, 902 legitimate and 390 illegitimate. Of these 676 were males and 616 females.

The Simmons-Tilden Law Suit. — The suit of Dr. Charles E. Simmons against the executors of the Tilden estate, for professional service, has been settled by compromise. Dr. Simmons receives $40,000 for eight years' service, his original claim having been $143,500.

Cholera. — Reports from abroad show that the cholera is making gradual progress along the whole of the Mediterranean coast of France and Spain, and to some extent northwards. At Marseilles the condition remains about the same. At Lyons there has been a slight increase in the number of cases, as at Toulon. A few cases have occurred at Nantes. In Mecca and Jeddah the death-rate has continued very high, reaching nearly 500 daily in Jeddah. In Russian towns there have been some 400 cases with about 140 deaths. The disease made its appearance in Buda Pesth on the 12th. In Alexandria there have been over 40 deaths so far.

Yellow Fever. — Two vessels arrived at Delaware Breakwater last week with cases of yellow fever on board. One was from Havana; the other from Santos, Brazil, where a severe epidemic of yellow fever exists. The deaths are reported to number several hundred; but no accurate figures have been received, and it is feared the United States Consul has died.

Quarantine Changes at Philadelphia. — The new quarantine law of Pennsylvania, which went into effect July 1st, marks an important step in the direction of a uniform national quarantine. By its provisions the control of quarantine, which is relinquished by the Philadelphia Board of Health, is given to a board of seven persons, two of whom are appointed by non-official bodies, one each by the College of Physicians of Philadelphia and the Maritime Exchange. The present lazaretto is to be removed within two years, and the new station will not be located on any mainland of the State. All quarantine fees are to be abolished. The most important feature of the bill, however, as the *Medical News* rightly says, is the provision made for the substitution of National for State quarantine. The act empowers the governor to suspend the whole State system whenever he is satisfied that an efficient quarantine is maintained by the Federal authorities. That such a quarantine will some time be maintained, can hardly be doubted, and it will be a notable reform when a single service uniform throughout all ports is established.

The Effect of High Altitudes on the Blood. — Egger has demonstrated a rapid increase in the number of red corpuscles in the blood to take place in high altitudes. From experiments on twenty-seven persons living at Arosa, an altitude of 1,800 metres, he found that though other conditions of life were as nearly the same as before, the number of red cells increased markedly from the average in these persons when at lower levels, nearly a million in a fortnight. The hæmoglobin was also increased. The gain was lasting so long as a high altitude was kept, but on returning to the plains the number gradually fell off to its original point. Koeppe also obtained similar results in his experiments.

NEW YORK.

Yellow Fever. — On July 13th, Health-officer Jenkins reported that the supercargo of the British freight steamer *Ardangarm*, which arrived from Cienfuegos, Cuba, on July 9th, had died just as the vessel was entering port, suspecting from the symptoms described to him that the case had been one of yellow fever, he ordered the body to be removed to Swinburne Island, where an autopsy was made and showed conclusively that death was due to this cause. Dr. Jenkins also reported that since July 3d, he had been holding the Belgian steamer, which came from Santos, Brazil, in quarantine, because he had no doubt that two deaths which occurred on board during the voyage were really due to yellow fever, although they had been diagnosed on the ship as intermittent fever. Both vessels, after having been thoroughly disinfected, were released from quarantine on July 14th.

St. John's Guild Hospital. — On July 11th, the St. John's Guild Floating Hospital made its first trip of the season to the Guild's Seaside Hospital at New Dorp, Staten Island; and it is now making six excursions a week, three from North River piers and three from East River piers.

New York State Board of Health Districts. With a view to increasing the efficiency of its service, the State Board of Health has divided the State into six districts with a special inspector for each, whose duty it shall be to report the sanitary condition of the territory allotted to him and the efficiency of local boards of health. One important purpose in appointing these inspectors is to secure protection as far as possible against the invasion of contagious disease and to enable the State and local boards to take prompt and efficient action in case such invasion occurs.

Mortality. — During the week ending July 8th, 917 deaths were reported, an increase of 215 over the week preceding. Although this represents an annual death-rate of 25.28 per thousand of the estimated population (as against 19.37 for the previous week), this mortality is 123, or nearly 15 per cent. below the average for the corresponding week during the past five years. Deaths from diarrhœal diseases numbered 182, an increase of 97 over the week ending July 1st, and the deaths of children under five years of age amounted to 489, an increase of 149; 333 of the deaths were in children under one year, an increase of 33 per cent.; while the deaths in tenement-houses numbered 613, an increase of 58.

During the week ending July 15th, the deaths reported in the city amounted to 1,096, an increase of 179 over the preceding week. This mortality, however, is 143 below the average of the corresponding week for the past five years, and 240 below the number of deaths during the corresponding week last year. In the week ending July 16, 1892, when the weather was very hot, the mortality reached the unprecedented figure of 1,336, representing an annual death-rate of 38.09.

◆

Miscellany.

THE CAUSATION OF ANÆMIA BY URIC ACID.

Haig offers another chapter in his study of uric acid in a short report on experiments made to show the direct relation between uric acid excess and anæmia. The excess of uric acid, he claims, is not due to the anæmia so often found coincidently, but is its direct cause. Inasmuch as uric acid administered by the mouth finds its way, as such, directly to the blood and eventually to the urine without being changed to urea, he was enabled to alter at pleasure the uric acid percentage of the blood.

Following the close clinical resemblance between a uric acid storm as seen in the uric acid headache (migraine) and the symptoms which precede and accompany a paroxysm of hæmoglobinuria, it occurred to him by producing a uric acid storm, to try to cause at least some blood changes.

He found that by taking pure uric acid he could diminish at will the value of the portion representing the relation of hæmoglobin to red cells. This value rose again on leaving off the uric acid. Experiment also showed that the blood responded in the same way to the normal daily excretion of urates.

In chlorotic patients, after increasing the blood fraction by giving iron, he gave beef-tea, in which he had estimated the uric acid. This produced a fall of the blood fraction, which again was followed by a rise when it was left off. These observations were in several cases with results that are practically identical and apparently proportional to the amount of uric acid taken.

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HEART-DISEASE OR KIDNEY-DISEASE.

Tyson, in a paper read before the Pennsylvania State Medical Society, discusses by means of four illustrative cases the difficulty of diagnosis between these coincident diseases.

The first case, that of a shop-girl, aged fourteen, was supposed to be a case of chronic parenchymatous nephritis, while further study showed it to be one of primary valvular disease of the heart, with secondary passive congestion of the kidney.

The second case was one of chronic interstitial nephritis, with hypertrophy of the left ventricle, in which all of the symptoms pointed to primary heart-disease, but the true nature of which was easily revealed upon closer study.

The third case was more complex. An ancestry and a personal history of gout; an albuminuria, at first small; absence at first of casts, and then sparse casts, all pointed to gouty kidney, a supposition by no means weakened by existing sense of oppression, and dyspnœa. On the other hand, an evident mitral murmur; moderate degree of hypertrophy of the left ventricle, dilated right ventricle; an irregular heart, gastric catarrh, and dropsy, pointed to a condition of mitral regurgitation. Yet the problem (heart or kidney?) was a difficult one. It seemed that in this case doubtless both organs were affected independently, each from the same cause — gout. Unfortunately, there was no autopsy.

The fourth case was a complete surprise in the light of the autopsy. A distinct mitral systolic murmur and extreme anasarca; scanty urine and pleural effusions, all combined to favor the idea that there was mitral regurgitation, while the fact that the patient had had two seizures, best explained on the supposition of cerebral embolism, seemed to add all that was required to make the diagnosis absolute. One symptom only might have suggested a renal origin, and that was a marked degree of hypertrophy of the left ventricle, without aortic disease, yet the autopsy showed extreme mitral stenosis and typical large white kidneys beginning to contract.

Though in many cases it is almost impossible to decide between a mitral disease and a chronic nephritis, there are certain points which are of assistance in the diagnosis: the careful study of the character of the urine and the degree of cardiac enlargement. But a fact on which the writer lays much stress in deciding in favor of a primary kidney-disease, is the failure of heart tonics, like digitalis, to produce diuresis, even though the pulse rate is lowered. The importance of a correct diagnosis for prognosis is self-evident.

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A FOREIGN BODY MISTAKEN FOR CANCER.

At the last meeting of the Lyons Medical Society, Frarier showed the stomach of a patient who had given the following curious history:

For a long time he had been losing weight and strength, and had repeated attacks of vomiting, with gastric distress. He was emaciated and cachectic. Examination showed some anasarca and a weak heart. There was no cardiac murmur nor albuminuria; the stomach was much dilated; and a large diffuse tumor was felt in the epigastrium. The vomitus was coffee-colored. A diagnosis of carcinoma was made. Washing out the stomach gave slight relief; and the patient gradually failed, and died of exhaustion.

At the autopsy no tumor of the stomach was found, but the mass felt before death proved to be a large collection of prune and cherry stones and raisin pips, so matted together by mucus as to be separated only with some difficulty.

◆

LAVAGE OF THE STOMACH.

The comparative readiness with which the stomach may be washed out by the general practitioner, and the numerous cases in which relief is thus afforded, leads Pick[1] to a discussion of what constitute suitable cases. His classification includes:

(1) All cases where the food remains an abnormally long time in the stomach, whether such delay is due to dilatation consequent on stricture of the pylorus or to simple stretching.

(2) Cases of carcinoma of the pylorus where the greatest relief is often given by regular siphonage and cleansing.

(3) To remove excessive mucous secretion due to gastric catarrh and as a means of testing the deficient elements of the digestive fluid.

Cholelithæmia and catarrhal icterus, to remove auto-organic poisons.

All cases where the retching might be fatal to the patient as in advanced cardiac, pulmonary or arterial disease are contraindications.

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TREPHINING FOR PISTOL-WOUNDS.[2]

Von Bergmann reports to the Berlin Medical Society his conclusions on the treatment of penetrating wounds of the skull based on the observation of twenty-five cases. There are three easily-distinguished classes, each of which has a definite anatomical lesion, and calls for a fairly definite treatment.

The first division includes such patients as are unconscious and motionless, so that the question of paralysis cannot easily be made. Associated with this unconsciousness there are symptoms of cerebral pressure, with increasing coma; a slow followed by a rapid pulse; and a fatal termination, or gradual return of consciousness and recovery. Such cases as these point, as a rule, to an injury of the lateral ventricle, with hæmorrhage into it and the meninges.

In the second class of cases there is little or no loss of consciousness; but localized paralysis or spasms are found developing, which point, of course, to definite cortical regions.

The third class of cases is marked by absence of symptoms, the wound being seated in the frontal lobes.

As regards treatment by exploring or trephining, Bergmann takes a decided stand against undue interference, especially with the probe, which, he says, should be used only as indicated *during operation*, not to search for the bullet. The treatment of all cases should be the thorough cleansing of the parts *about* the wound, and aseptic dressing. The less interference with the interior of the wound the better. With regard to trephining, he is equally conservative. He thinks that the absorption of the clot is best done by nature, and that many cases have recovered in spite of trephining. Two indications call for trephining: the occurrence of motor irritation, and wide-spread splintering of the bone. Other cases, particularly those of the third class, call for no treatment beyond rest and cleanliness.

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THE TREATMENT OF PROSTATITIS BY ICHTHYOL.

Within a short time several reports have been published upon the use of ichthyol in the treatment of prostatitis. Scharff, in 1892, reported about forty cases of acute inflammation of the prostate, chiefly of gonorrhœal origin, successfully treated by the injection into the rectum of a ten-per-cent. solution in water of ichthyol, three or four times a day. An early cessation of the pain and diminution of the swelling of the gland resulted, and in no case was there any abscess formation. Ehrmann used successfully, in treating gonorrhœal prostatitis, deep irrigation with a ten-per-cent. solution of ichthyol, as well as suppositories of the same drug. Ullmann also reported excellent results from the use of suppositories. All these cases were gonorrhœal in origin.

Freudenberg,[1] of Berlin, has just reported the results of his treatment of prostatic inflammation during the last two years. His cases numbered about forty; and the treatment reported was used only in chronic prostatitis, or the later stages of an acute inflammation, since he was more satisfied to treat the active stage of a gonorrhœal or simple prostatitis by the usual routine of rest in bed and perineal applications.

In the chronic stage the treatment was always rectal suppositories, made in the following proportions:

℞ Ammon. sulpho-ichthyol. . . . [illegible] grammes.
Ol. [illegible] . . . [illegible]

One of these was given at night and another after evacuating the bowels in the morning. In all cases a rapid improvement took place in the symptoms. The pain on defecation, the oppression in the perinæum, and the tenesmus frequently ceased entirely, while the actual swelling of the gland was much diminished. There were but two exceptions, both cases where the treatment was interfered with by sexual excess or in other ways. In the doses given no irritation of the bowel followed, and considerably larger doses even were well borne.

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[1] Centralblatt f. [illegible], May, [illegible].

[2] Deutsche Med. Zeitung, [illegible], No. [illegible].

[1] Centralblatt f. [illegible], 189[illegible], No. [illegible].

It is important, however, that the ichthyol be thoroughly mixed with the butter, not enclosed in hollow suppositories, as the crude drug is irritating enough to cause rapid evacuation of the bowel and so fail of its desired action.

◆

THE DIRECTION OF CANCER TREATMENT.

Dr. Herbert Snow, in a recent paper on "Improvement in Cancer Treatment," points out a few rational principles which should underlie all treatment of carcinoma, and which, if adhered to, would lead to better results than at present obtained.

The fatal effects of cancer, especially in surgical cases, are due, he points out, more often and to a greater degree to metastatic growths than to the original lesion. The "infection-paths" should be recognized as definite and regular, differing in carcinoma and sarcoma. A routine operative removal is essentially wrong. A case of carcinoma is improperly treated if the primary lesion alone be excised, while glands which are involved are neglected; indeed, the removal of glands should extend to those in the line of infection beyond the point of existing enlargement, since only thus can further progress be checked. Of the two lesions, the secondary deposit should receive the first attention if one only be attacked.

In true sarcoma, on the other hand, the presence of enlarged glands in the vicinity is *prima facie* evidence of a general systemic infection having occurred, with the probable presence of secondary growths in the parenchymatous organs. The bearing of this relation on operation is obvious.

The more we realize the force of those relations, the more urgent becomes the necessity of an early diagnosis, and immediate operation. To wait for signs of glandular infection before removing a suspicious growth is to delay too long. Microscopic diagnosis should be made at once, and heeded when made. As to medical treatment the writer says a patient with cancer not amenable to surgical operation should at once be put upon small, continued doses of morphia or opium and made permanently subject to the morphia habit, purposely induced. The drug should be given with the avowed object of arresting and keeping in check the progress of the lesion.

The benefits of the principle are most evident in connection with carcinoma in the female breast, though by no means limited to this. The practice of withholding opium until compelled by pain to resort to its use, merits unmeasured condemnation.

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THERAPEUTIC NOTES.

Persistent Vomiting. — Guyot[1] reports a case of persistent vomiting in a man, which resisted all the usual treatment. On the history that he had once lived in a malarial country, he was given an injection of quinine, although he showed no signs of malarial affection other than a slightly enlarged spleen. The vomiting ceased almost immediately.

Dyspnœa of Pulmonary Phthisis. — The symptom of dyspnœa in cases of pulmonary phthisis is one which especially taxes the therapeutic resources of the practitioner. Though based on physical conditions, the distress to the patient is very often out of proportion to the lesions existing in the lung. It is this sense of oppression and inability to breathe which is most difficult to relieve in many cases. Dr. Beverley Robinson, of New York, reports excellent results in such conditions from the use of an old-fashioned drug, silphium lanciniatum, commonly known as "rosinweed." He gives it in half-drachm doses of the tincture, and finds often a quick response when other drugs have failed to relieve the patient. The tincture should be made from the root, and especial care should be taken to write for the silphium lanciniatum as the allied species, thapsia garganica or silphium gummiferum, have quite different properties.[1]

A Vehicle for Iodide of Potash. — Delavan recommends essence of peppermint and milk as an agreeable menstruum for the administration of large doses of iodide of potash.

Otalgia.— The recipe given below has been found useful:

℞	Menthol Camphoræ	āā gr. xx.
	Liq. Albolene	℥ i.
	Drop in ear p. r. n.	

Urticaria. — Bourdeaux[2] has found the following prescription to give great relief in urticaria:

℞	Liquor. calcis Aquæ Laurocerasi Glycerini	equal parts. M.
Sig.	Apply externally and cover with cotton.	

Acne. — Unna prescribes the following ointment for acne:

℞	Unguent. zinci Lanolin Calcii chloride	āā 10 parts.
	Sulphur præcip.	3 parts.

Phototherapeutics. — The ordinary sun-glass has become lately a vaunted therapeutic agent. Sciascia, an Italian oculist, reports favorable results from photocauterization in cases of trachoma, claiming more accurate and safer effects than are obtainable from other caustics, chemical or mechanical.

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Correspondence.

[Special Correspondence.]

LETTER FROM HAMBURG.

What is Being Done to Protect the City and its Commerce against Cholera.

Mr. Editor: — This city is making strenuous efforts to keep out cholera, and also to prevent its springing up in the city. In respect to the former measures Russian steerage passengers are forbidden entrance into the city, and the different transportation companies are forbidden to forward them, no matter whither. In respect to the second statement, the latest result is that attained by the supply of pure filtered water. The city takes its water from the Elbe River, some distance above the harbor where also the current is quite rapid. For a considerable distance above and below this point, no vessel is allowed to anchor; the water is led into basins, where it is filtered through sand and thence is brought into the water mains of the city.

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[1] La Bulletin Medical, No. 52, 1893.

[1] New York Medical Record, July 15, 1893.

[2] Rev. de Clin. et de Thér.

(The old unfiltered water-supply has been absolutely and entirely cut off.) Professor Koch has lately published a couple of articles on the action of this filtration and is inclined to believe the good results are obtained by the water passing through the layer of albuminoid matter, or slime, that is deposited on the surface of the sand, and strenuously warns against breaking up or disturbing the continuity of this layer. Whereas the water in previous years was unfiltered, dirty and suspicious, the new filter system supplies a *pure clear* article, that is germ free. Up to the introduction of this filtered water, there were scattered about the city, wooden booths where water was thoroughly boiled, and then delivered free to all who applied for it. Several artesian wells also supplied certain sections of the city. The supply of pure, filtered water being sufficient in quantity for all the city's needs, the booths are being removed. The supply of water delivered to the filter station is abundant. When it is remembered that ocean steamers come up to the harbor and here find easy berths, it is good proof that there is plenty of raw material to turn into the filter basins, and these are adequate for all needs.

Notices and placards have been posted, advising care in the use of water, so as not to overstrain the plant; but when all the basins are finished, which will shortly be the case, there will be no limit to the supply. All public parks and the streets are now being sprinkled with the filtered water.

To Americans the principal interest centres, naturally, around the treatment of the emigrants destined for the United States. There are two lines of steamers, from this city, carrying passengers to America, "The Hamburg American Packet Company" and the "Union Line." The passenger business for the latter is done by the Packet Company, so that all passengers come under the same control.

The ships carrying these passengers are cleaned and disinfected under the supervision of a medical man, who is an assistant or deputy of Dr. Jenkins, Quarantine Officer of the Port of New York. The crew's quarters and closets, the steerage compartments, closets and hospitals, receive special attention. All articles are removed; bunk-boards, wash-stands and shelving being ripped out, so that clear access is had to every part; nooks, corners and cupboards are thoroughly scraped out, as well as spaces under the bunks and drawers; with scrubbing-brush and a solution of strong soap lye and water, every part is made clean; then all is washed out with a solution of bichloride of mercury (1–500.) In the meantime, all the articles that had been removed have been as thoroughly handled on the deck, and then all are loosely replaced where they belong. Constant inspection is made during the cleaning process, until it is all completed satisfactorily. Each steerage bunk is provided, at each trip, with a new clean mattress and pillow; for each one hundred passengers, four beds must be furnished in hospitals specially set apart for this purpose.

Just before the hour of departure of a vessel, the ship is again inspected, with regard to cleanliness, air-space, and ventilation, by the sanitary inspector of the Marine Hospital Service stationed here and by the New York Quarantine Agent. At this time the officers and crew are inspected by both medical men, and the number present and inspected, compared with the muster-roll: any sick person or one showing suspicious symptoms is rejected and replaced.

The water furnished all ships is from an artesian well, which has been examined and found pure and germ free. This is the only water in use on these ships.

Every person entering the city must be registered by the police and certain hotels or lodging-houses are licensed by them to receive and care for these people. Russians have always been taken to the barracks, across the river from the city, while others seek houses where they may find people from their own section of the country. The barracks are under police control and have a physician, specially appointed to attend to the health of the inmates. Dr. Jenkins's agent makes daily inspections of the inmates and the buildings, and the sanitary inspector makes frequent visits as well. As soon as the new-comers are registered, they are stripped and receive a bath: in the meantime their clothing is disinfected by steam at a temperature of over 101° Celsius. The person remains in the bath until his clothing has remained in the steaming chest a sufficient length of time. The baggage — contents of trunk, basket or box, is taken to a steam disinfecting-plant, the day before sailing of the steamer and disinfected under the superintendence of both medical men. Inmates of the barracks must remain there under observation at least six days, before they are allowed to travel: they then receive a certificate to this effect, together with their ship's ticket and emigrant inspection-cards.

People of other nationalities are lodged, as said, in licensed houses: here they are under daily medical observation by German physicians, and also inspected frequently by the medical men before mentioned, who also inspect the hotels in every particular. People coming from infected or suspected districts are held under quarantine observation of the sanitary inspector, according to the laws enacted by Congress this last spring. These latter receive a certificate from the German visiting physicians, at the time they receive the ship's ticket as well as the emigrant inspection cards. Every emigrant receives these cards; and those going to New York receive an additional card, as required by the New York quarantine authorities. The cards state the passenger's name, age and nationality; the name of the ship and the port of departure; and are to be daily punched by the ship's surgeons as they make their usual rounds.

At the time of embarkation, the people are gathered in one room, and then file into an examination-room, where they pass inspection. Here stand Dr. Homann, the medical inspector of emigrants, appointed by the Hamburg Government, and who stamps the official seal of the city on all tickets that pass inspection; Dr. Müller, a Hamburg physician, who assists Dr. Homann in his inspection; Dr. J. H. White, sanitary inspector of the Marine Hospital Service, who stamps the emigrant inspection-cards, required by the United States Government, with his official seal, of all persons passed; Dr. Mitchell, his assistant; and Dr. Nash, who represents the New York quarantine, and who stamps inspection-cards, of those bound for New York. The people are tallied as they pass on board the ship. In addition to the medical inspection, there is a police inspection, but that does not concern us here. Each passenger receives a ticket which corresponds to that on the ship's manifest, and which he must also show in America.

All luggage must be inspected and disinfected according to the quarantine regulations, under supervision of inspectors.

When the passengers are all inspected, the bill of health is made out, and the consul certifies to the ship's manifest, each sheet receiving the special declaration of the first officer and ship's surgeon, who have witnessed the embarkation.

Ships sailing for all ports of the United States and Canada are inspected by all the gentlemen above mentioned, and they and their luggage are treated as above stated.

I think it can be safely said that the treatment and inspection of emigrants bound for America from Hamburg is as thorough and careful a one as can be had; and no doubt it will continue to have, as has already been proved, a salutary influence on the health of such as travel to America.

Very truly yours, George W. Nash, M.D.

Celibacy in the English Church. — The Diocesan conference of St. Albans, England, recently discussed the question of celibacy of the clergy. It was remarked that the livings in many cases were not given to support married men, that clergymen too often contracted improvident marriages. They were advised to follow the example of "the average doctor," who "practices continence as regards marriage until his income is sufficient to warrant such a step."

METEOROLOGICAL RECORD,

For the week ending July 8, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r. 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S... 2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	86	82	S.W.	S.	[illegible]	16	C.	C.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	78	[illegible]	[illegible]	S.W.	S.	[illegible]	[illegible]	F.	O.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	1	10	O.	C.	
W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.	7	18	F.	O.	
T..	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62	N.W.	N.W.	12	[illegible]	C.	C.	0.14
F.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	56	N.W.	S.	7	10	C.	F.	
S.. 8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	56	S.W.	S.W.	14	[illegible]	C.	O.	
[illegible]														

[illegible] H., [illegible] S., [illegible] R., [illegible] Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 8, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal Diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	[illegible]	[illegible]	[illegible]	8.09	[illegible]	1.10	1.65
Chicago . . .	[illegible]	[illegible]	200	18.63	11.04	10.35	[illegible]	1.15
[illegible] .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.71	[illegible]
Brooklyn . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	21.42	2.94	[illegible]
St. Louis . . .	[illegible]			—		—	—	—
Boston . . .	[illegible]	171	[illegible]	[illegible]	[illegible]	.58	4.06	[illegible]
Baltimore . .	[illegible]					—	—	—
[illegible] .	308,431	[illegible]	73	31.05	9.66	26.22	1.38	—
Cincinnati . .	[illegible]	[illegible]	[illegible]	[illegible]	9.62	14.06	2.22	—
Cleveland . .	[illegible]	[illegible]	32	16.92	8.46	[illegible]	1.41	1.41
Pittsburg . .	[illegible]	[illegible]	101	49.80	6.60	33.00	[illegible]	[illegible]
Milwaukee . .	[illegible]	[illegible]	35	18.07	5.56	1.39	8.34	5.56
Nashville . .	[illegible]	[illegible]	[illegible]	11.11	13.33	2.22	—	—
Charleston . .	[illegible]	[illegible]	14	[illegible]	[illegible]	15.36	—	—
Portland . . .	[illegible]	8	1		[illegible]	—	—	—
Worcester . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—
Fall River . .	[illegible]	41	[illegible]	[illegible]	[illegible]	[illegible]	2.44	—
Lowell . . .	87,191					—		—
Cambridge . .	77,100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	—
Springfield . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.48	—	—
Lawrence . .	[illegible]	—	—	—	—	—	—	—
New Bedford .	[illegible]	21	11	19.04	—	[illegible]	—	4.76
Holyoke . . .	41,278	—	—		—	—	—	—
Salem . . .	32,233	[illegible]	[illegible]	10.00	—	10.00	—	—
Brockton . .	32,140	11	[illegible]	18.18	27.27	9.09		9.09
Haverhill . .	31,396	11	[illegible]	18.18	18.18	9.09	—	—
Chelsea . . .	[illegible]	11		9.09	18.18	—	—	9.09
Malden . . .	29,394	[illegible]	[illegible]	20.00	20.00	20.00	—	—
Newton . . .	[illegible]	—	—	—	—	—	—	—
Fitchburg . .	27,146	11	[illegible]		—	—	—	—
Taunton . . .	26,972	12	[illegible]	[illegible]	—	[illegible]	—	—
Gloucester . .	[illegible]	[illegible]	[illegible]	25.00	—	—		—
Waltham . .	[illegible]	[illegible]	[illegible]	16.66	16.66	—	[illegible]	—
Quincy . . .	19,642		1	20.00	[illegible]	20.00	—	—
Pittsfield . .	[illegible]	1	[illegible]			—	—	—
Everett . . .	[illegible]	[illegible]	[illegible]	[illegible]		33.33	—	—
Northampton	[illegible]	1	[illegible]	—	—		—	—
[illegible] .	14,073	7	[illegible]	—	14.28	—	—	—
Amesbury . .	10,9[illegible]	[illegible]	1	[illegible]		—	—	—

[illegible] under five years of age 1,633, principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 897, [illegible] 274, consumption [illegible], acute lung diseases 250, diphtheria 130, scarlet fever 41, cerebro-spinal meningitis 40, measles 36, typhoid fever 29, whooping-cough 27, erysipelas 9, malarial fever 9, small-pox 1.

From cerebro-spinal meningitis New York 20, Chicago 5, Cleveland and Worcester 3 each, Philadelphia, Brooklyn and Washington 2 each, Lynn, Haverhill and Gloucester 1 each. From [illegible] New York 16, Pittsburgh 8, Brooklyn 6, Philadelphia and Cleveland 2 each, Chicago and Cambridge 1 each. From typhoid fever Chicago and Pittsburgh 7 each, New York 4, Philadelphia 3, Cincinnati 2, Brooklyn, Cleveland, Milwaukee, Nashville and [illegible] 1 each. From whooping-cough New York 9, Philadelphia and Brooklyn 4 each, Chicago and Pittsburgh 3 each, Boston, Cincinnati, Nashville and New Bedford 1 each. From erysipelas New York 3, Chicago, Brooklyn, Boston, Washington, Pittsburgh and Milwaukee 1 each. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending July 1st, the death-rate was 22.7. Deaths reported 4,496; measles 96, whooping-cough 93, diphtheria 88, scarlet fever 63, fever 42.

The death-rates ranged from 12.6 in Oldham to 41.6 in Preston; Birmingham 22.3, Bradford 24.2, Croydon 17.2, Hull 15.5, Leeds 21.8, Liverpool 37.0, London 22.2, Manchester 29.5, Newcastle-on-Tyne 17.7, Nottingham 17.7, Plymouth 28.8, Salford 26.7, Sunderland 18.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 8, 1893, TO JULY 14, 1893.

The order assigning **CAPTAIN FREEMAN V. WALKER**, assistant surgeon, to temporary duty at Fort Trumbull, Conn., is so amended, as to relieve him from further duty at Fort D. A. Russell, Wyoming, and to assign him to station at Fort Trumbull, Conn., until further orders.

FIRST-LIEUT. CHARLES F. MASON, assistant surgeon, July 2, 1893, promoted, to be assistant surgeon, with the rank of Captain.

MAJOR JAMES P. KIMBALL, surgeon, is relieved from duty at Fort Clark, Texas, to take effect at the expiration of his present sick leave of absence, and ordered to Fort Marcy, New Mexico, for duty.

CAPTAIN WILLIAM H. CORBUSIER, assistant surgeon, is relieved from duty at Fort Wayne, Mich., and ordered to Fort Supply, Indian Territory, for duty, relieving **MAJOR PAUL R. BROWN**, surgeon.

MAJOR BROWN, on being relieved by **CAPTAIN CORBUSIER**, is ordered to Fort Hamilton, New York, relieving **MAJOR EZRA WOODRUFF**, surgeon.

MAJOR WOODRUFF, on being relieved by **MAJOR BROWN**, is ordered to Fort Keogh, Montana, for duty, relieving **MAJOR WILLIAM H. GARDNER**, surgeon.

MAJOR WILLIAM H. GARDNER, surgeon, on being relieved by **MAJOR WOODRUFF**, is ordered to duty as attending surgeon and examiner of recruits, at Headqrs. Dept. of Dakota, St. Paul, Minn., relieving **CAPTAIN WALTER REED**, assistant surgeon, U. S. A.

CAPTAIN REED, upon being relieved by **MAJOR GARDNER**, is ordered to report to the Surgeon-general at Washington, D. C., for duty as curator of the Army Medical Museum, and as professor of clinical and sanitary microscopy in the Army Medical School.

RECENT DEATHS.

JAMES J. LEVICK, A.M., M.D., of Philadelphia, died June 25th, aged sixty-eight years. He was one of the visiting physicians to the Pennsylvania Hospital and to the Wills Eye Hospital.

J. D. MITCHELL, M.D., of Jacksonville, Fla., died July 15th, aged seventy years.

BOOKS AND PAMPHLETS RECEIVED.

Hypnotism, Mesmerism and the New Witchcraft. By Ernest Hart. New York: D. Appleton & Co. 1893.

The Spelling of Some Medical Words. By George M. Gould, A.M., M.D., of Philadelphia, Pa. Reprint. 1893.

Nursing; Its Principles and Practice. By Isabel H. Hampton. Illustrated. Philadelphia: W. B. Saunders. 1893.

The Meaning and Method of Life. By George M. Gould, A.M., M.D. New York: G. P. Putnam's Sons. 1893.

Woman's Medical College of the New York Infirmary, Twenty-eighth Year, Annual Catalogue and Announcement, June, 1893.

Report for the Year 1892–93, Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

The Health Resorts of Europe. By Thomas Linn, M.D., with an introduction by Titus Munson Coan, M.D. New York: D. Appleton & Co. 1893.

A Manual of Diseases of the Ear. By George P. Field, M.R.C.S., Aural Surgeon and Lecturer on Aural Surgery, St. Mary's Hospital Medical School, London. Philadelphia: Lea Brothers & Co. 1893.

A Text-book of Medicine. By Adolf Strümpel. Second American edition translated by Herman F. Vickery, A.B., M.D., and Philip Coombs Knapp, A.M., M.D., with editorial notes by Frederick C. Shattuck, A.M., M.D. New York; D. Appleton & Co. 1893.

Lecture.

TUBERCULOUS PLEURISY.[1]

The Shattuck Lecture for 1893.

By William Osler, M.D.,
Professor of Medicine, Johns Hopkins Hospital, Baltimore.

(Continued from No. 3, p. [illegible])

(b) The secondary and terminal acute tuberculous pleurisy.

Here reference is not made to cases of general miliary tuberculosis in which the pleural membranes are involved with other parts. A miliary eruption is very often secondary to a local tuberculosis in the lung, and under these circumstances the exudate is usually fibrinous. It is interesting to note that in the 101 post-mortems from my wards, in the cases in which tubercles were found on the membranes, only four had a simple fibrinous pleurisy. On the other hand, there were eleven instances of fibrinous pleurisy in persons dead of pulmonary tuberculosis in which there was no mention made of tubercles on the pleura. This accords with the well-known experience that a pleurisy in the course of a pulmonary tuberculosis is not always due to the presence of tubercles. Acute miliary tuberculosis of the pleura, with a sero-fibrinous or hæmorrhagic exudate, was present in only seven of the autopsies. In every one of these cases was the tuberculosis secondary to some other affection, or occurred as the terminal event in some long standing illness. Whether or not in an instance, for example, of acute pleurisy with effusion, coming on in an apparently healthy individual, and which, for the sake of argument, we may presume to be tuberculous, the condition of the pleura is that of an acute miliary tuberculosis, I have no personal knowledge; but in my experience the condition has almost invariably been, as just mentioned, a secondary or terminal process in some already existing affection. The following are illustrative cases: In the first instance there was a chronic anæmia, induced by the hæmorrhoids, with old foci of caseous disease at the apices of the lungs. The death resulted from miliary tuberculosis, involving chiefly the pleural sacs.

Case II. Hæmorrhoids; anæmia; chronic tuberculosis; caseous foci in the lungs; acute miliary tuberculosis of both pleural sacs.

R. S., male, white, aged forty-seven, admitted October 21, 1891, complaining of bleeding piles. He has always been a healthy man; never has had any illness, except the hæmorrhoids, which have troubled him at intervals for nine years. During the past few weeks they have been much worse, and he has lost blood with every stool, having had three or four evacuations every day. He says that he has lost as much as a pint of blood at one time. He has gradually become very pale. At present the hæmorrhoids are not bleeding.

Patient is a pale but well-nourished man. On admission, the examination of the lungs was negative; the heart impulse was diffuse. The pulse was regular, small in volume. The spleen was not palpable, and there was no œdema. The urine contained a faint trace of albumin, but no tube casts. He was thought to have moderate grade of anæmia from bleeding piles.

About the middle of November the patient began to be delirious, but the temperature was not high, not more than 100° or 100.5°. He had slight diarrhœa, from three to six semi-solid stools daily. He did not seem very ill, and was generally up and about and dressed, though he talked in a rambling, incoherent way.

About November 28th he began to have dyspnœa, which gradually increased. The temperature had not changed specially since his admission; had been ranging from 100° to 101.5°, and very rarely reached 102°. On December 3d the note was that he was propped up in bed: very pale; lips and mucous membranes blanched; respiration 32, labored and wheezing. Pulse 120; chest hyperresonant in front; dulness at both bases; below the angle of scapula an absence of breath sounds. There was no expectoration. He continued to have three or four loose stools daily, and died on the 5th.

Autopsy. Large, well-built, well-nourished man, marked anæmia. Peritoneum is smooth. Over the mesentery, and the lower surface of the diaphragm, and in the pelvis, there are numerous elevated, translucent tubercles, some of them surrounded with areas of hyperæmia. The peritoneal surface of the intestine also presents numerous tubercles. The surface of the spleen and the contiguous diaphragm presents many tubercles.

Acute miliary tuberculosis of both pleural sacs, with about two litres of serous fluid in each. The membranes were covered with a thick, fresh fibrinous exudate, after the removal of which many miliary tubercles were seen. Both lungs were compressed; no cavities; but at the apices there were old and partially softened caseous masses, with many miliary tubercles. In the lower lobes there were only a few scattered tubercles. The spleen presented a few tubercles; no tubercles seen in the liver.

Intestines. One or two small ulcers, with irregular margins in the ileum. The mesenteric glands hard and caseous.

Meninges were œdematous, but presented no tubercles.

In the following instance the patient died of an acute entero-colitis, with an acute miliary tuberculosis of the pleura as a terminal event.

Case III (abstract). Chronic entero-colitis; acute tuberculosis of the left pleura.

Jos. A., aged thirty-three, colored, admitted January 23, 1891, complaining of diarrhœa and colic. There was no history of tuberculosis in his family. He had gonorrhœal synovitis five years ago, and a chancre. For nearly a year he has been subject to diarrhœa. On admission, patient was emaciated and anæmic; afebrile. The physical examination was negative. He had four or five stools daily, yellowish white in color, and contained undigested food; no amœbæ were found. He was very anæmic, had moderate fever, temperature range from 90° to 100°. The diarrhœa was uncontrollable, and he gradually sank, and died on February 28th. There was found an extensive entero-colitis, chiefly of the large bowel, with irregular ulceration. Almost the entire costal pleura on the left side was the seat of an extensive eruption of miliary tubercles, quite fresh, with hæmorrhagic zones about them, and much fibrinous exudate.

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[1] [illegible] Massachusetts Medical Society, [illegible]

These fresh adhesions extended along the diaphragmatic surface. The bronchial glands were caseous. There were no lesions in the lungs, except at the edge of the lower lobe, adherent to the diaphragm, there was a firm caseous mass, with some induration about it and colonies of miliary tubercle.

Post-mortem, we certainly see acute miliary tuberculosis of the pleura most frequently in the bodies of persons who have been under treatment for some chronic malady, affections of the heart and arteries, chronic Bright's disease, or scleroses of various sorts. Usually there will be found in these cases old foci of tuberculous disease, a caseous nodule at the apex, or in the bronchial glands, or in the mesenteric glands. Of late, attention has been called repeatedly to the association of tuberculosis of the serous membranes, most commonly of the peritoneum, with cirrhosis of the liver; but a number of instances of terminal tuberculosis of the pleura have also come under my care in this disease, and it may exist without having caused symptoms enough to attract attention. In one of my wards at Philadelphia Hospital an elderly man, with cirrhosis of the liver and moderate ascites, with dulness at the right base, died suddenly of hæmorrhage from the stomach. The effusion on the right side, which we thought to be hydrothorax, as it had come on without any special aggravation of the symptoms, proved to be acute miliary tuberculosis, with effusion. More frequently the symptoms are pronounced, as in the following case:

Case IV. Fatty and cirrhotic liver; hæmorrhage from the bowels; bilateral acute tuberculous pleurisy.

Mrs. L., aged twenty-seven, admitted with hæmorrhage from the bowels and tenderness over the region of the liver, which organ was slightly enlarged. There was no jaundice. She was a hard drinker, and had been in failing health for some months. Signs of pleurisy were discovered on both sides, and she had a severe cough. She sank rapidly, and died within a week or ten days after her admission.

Autopsy. Left lung covered with a thin, fibrinous exudation, thickest at base and near the edges. In places, the membrane is studded with minute granular tubercles, which are best seen where the exudation is less abundant. The organ is crepitant throughout, a caseous spot is seen at apex, and a narrow fibroid area in the lower lobe. No disseminated tubercles throughout the substance. The right pleura presents a similar exudation, less abundant than on the left side. The costal pleura is thickly lined with false membrane, is congested, and presents small gray bodies scattered through the membrane. At the apex of the lung is a small caseous mass, with a cavity the size of an almond, in direct communication with a bronchus. In the neighborhood of this are several small groups of tubercles. The lower lobe also presents a couple of small caseous bodies, but no scattered tubercles. Liver weighs 2,200 grammes, is large and pale. Lobules distinct, bile-stained in centre. Organ is both fatty and cirrhotic. Other organs normal.

Such instances as the following are not rare in old hospital patients with cardio-vascular and renal changes. More than once I have mistaken a terminal tuberculosis of the pleura for hydrothorax.

Case V. General arterio-sclerosis; primary tuberculosis of right pleura.

Joseph A., aged seventy, colored, laborer, admitted July 26, 1892, complaining of shortness of breath and swelling of the feet. No family history to be obtained. His wife states that he has been a perfectly healthy man all his life. She never heard him say that he had any illness. With the exception, some years ago, of a gathering under the left arm, he has been perfectly well. He denies the use of alcohol to excess.

His present illness began suddenly four weeks ago with a shaking chill, which lasted about half an hour, and was followed by pain in the stomach and shortness of breath. He has had no return of the chills, but has complained of abdominal pain. Two weeks ago the legs began to swell, and he thinks the abdomen was also slightly swollen. For about the same length of time he has been a little irrational. There has been slight cough, and he has had to sit up in bed to sleep.

Present condition. In bed, lying on the left side. He is somewhat emaciated; respiration rapid, 48; pulse 136, easily compressible, radials calcified; temperature 101°, rose in the night to 102.5°. He is not rational, and constantly mutters to himself.

Thorax. Resonance throughout the right front is good, but rather tympanitic; in the upper left front it is full, and somewhat tympanitic in character. Respirations everywhere accompanied by an expiratory groan, and in front they are harsh, and there are occasional râles, which, on the left side, are medium-sized. Behind the resonance is impaired at the right base, clear on the left side; on both sides respiration is harsh, and accompanied with fine, moist râles. Heart impulse is in fourth, fifth and sixth spaces; maximum in sixth, three centimetres outside the nipple line. Relative dulness at third rib. Sounds are feeble and heard with difficulty.

Patient was taken home August 11th; the dilatation of the heart had subsided under the use of digitalis. He had slight diarrhœa, which was checked with alum enemata. The signs of engorgement in the lungs disappeared and he had no pulmonary symptoms. The case was regarded as one of hydrothorax, secondary to the dilated heart in chronic arterio-sclerosis. Death occurred about two weeks after he left the hospital.

Autopsy (Dr. Flexner and Dr. F. R. Smith, abstract). The patient was found to have general arterio-sclerosis, with hypertrophy of the heart. The pericardium was smooth. The right pleura was thickened and the pleural layers uniformly adherent. The costal membrane measured about four millimetres in thickness, and was covered with tubercles, somewhat larger in size than miliary granules, and, as a rule, caseous. The underlying thickened infiltrated tissue was yellowish, and consisted of a diffusely caseous mass. The outermost layer was more fibrous. The pleura covering the diaphragm was greatly thickened and infiltrated. The lung was somewhat compressed, deep salmon color, and contained no tubercles. The left pleura was not espcially thickened; no adhesions. There were small miliary nodules, however, on the visceral layer. The apex of the lung was somewhat retracted, and on the anterior edge of the upper lobe there was an area of caseous pneumonia, with a small central cavity. There were, however, a few scattered tubercles throughout the posterior part of the lung.

(c) *Acute tuberculous suppurative pleurisy.*

A considerable number of the purulent pleurisies, designated as latent and chronic, depend upon tuberculosis, but the fact is not so widely recognized that acute ulcerative and suppurative disease, of a most severe type, may occur and run a very rapid course. In the following remarkable case the disease attacked a young, healthy woman of good family history, and set in abruptly with a chill and severe pain in the side. On admission there was dulness in the right side, feeble breathing, but there were features about the physical examination which made us a little uncertain about the nature of the case, and nothing was obtained on several aspirations. Within a few days, however, it seemed so clear that suppuration must be going on that Dr. Halsted was requested to operate. Instead of finding any large collection of pus there were small pockets varying in size from a marble to a chestnut, and though portions of ribs were resected in three different places no large collection was found. The symptoms persisted, and death took place about five weeks after the onset of the illness. Remarkable ulcerations were present throughout the right pleura, with pockets of pus between the adherent layers, no large accumulation, and an extensive acute miliary tuberculosis of the lungs. The tubercle bacilli were present in large numbers in the pus. Full details of the case are as follows:

Case VI. Suppurative tuberculous pleurisy; numerous pockets of pus; operation without benefit; miliary tuberculosis of lung.

Lizzie W., aged twenty-one, German by birth, was admitted to ward G, April 7, 1893, complaining of chills, fever, and pain in the right side.

Father and mother living and well; one sister living; no history of hereditary disease in the family.

She has always been a perfectly healthy girl. Has been in service; has only been in this country a short time. She had erysipelas of the head and face some months ago, and has not been quite so well since. She was seen by Dr. Salzer, who found signs, he thought, of effusion at the right base with high fever, and he ordered her removal to the hospital.

Present trouble began, she says, fourteen days ago with pain in the right side and fever. She had a chill about six o'clock, and had a sweat at night. The pain was of a dull character, and much aggravated on drawing a deep breath. There was no cough. The fever, pain in the side, and sweating have been the chief symptoms throughout her illness. She has been unable to work since its onset. The appetite is poor, and she has lost considerable in weight.

April 8th. Present condition. Small-framed, well-nourished young woman. Lips and mucous membranes of a good color; tongue slightly coated. Temperature on admission was 101°; this morning, at 10 a. m., it was 102.5°; pulse 88; respirations 28. Chest is well formed; good costal angle; both sides expand well; the right much less than the left.

On percussion there is flatness on the right side from the fourth interspace in parasternal line; from the fifth rib in mammary line; from the sixth in anterior axillary line. At the back there is flatness below the angle of the scapula. The breath sounds are clear in the infra-clavicular region, and as low as the nipple. Below this, behind and in front they are feeble, though clear. Behind, over the flat areas, respiration is feeble and distant. The vocal fremitus is absent over the flat areas. There seems to be a slight movable dulness at the level of the nipple in front. The cardiac impulse is in the fourth interspace in normal position. The sounds are clear, and of normal relative intensity. The abdomen is negative. The liver dulness reaches to the costal margin; the border was not palpable, and there is no pain on deep pressure. The urine is whitish yellow acid, 1,020; no albumen. It was thought probable that the case was one of empyema, and on the 10th an exploratory needle was inserted in the fifth space in the anterior axillary line, but nothing was obtained. The temperature range during the next week was very irregular, reaching sometimes to 104° or 105°. She had chilly feelings and heavy sweats at night.

On the 11th the following note was made: Pulse 130, regular, soft; she is propped up in bed; respirations are quiet. Patient lies somewhat on the right side. The left side of the chest moves freely. On percussion and palpation there is great tenderness over the sternum, particularly at the third right interspace and at the sternal end of the fourth costal cartilage. The line of dulness begins at the fourth space at the sternum, and passes through the nipple. The flatness extends across the sternum. Lower border of the liver is not palpable, but the flatness extends in the nipple line to costal margin. The respiration above the line of flatness is clear, below feeble, distant, and difficult to hear. Vocal fremitus, while practically absent in front, is to be felt in the axilla. In the back the line of flatness has not materially changed from that noted on entrance. On auscultation, as one approaches this line, there are fine, moist râles on inspiration, which are increased by coughing. The apex beat of the heart is not dislocated outward.

An exploring needle was again introduced; this time at the eighth space below the angle of the scapula, but with a negative result.

On the 12th the temperature was 105°; the pulse this morning was quieter, only 80 to the minute; tongue was not dry. There was to-day extreme sensitiveness along the right margin of the sternum, particularly in the third and fourth interspaces. The blood count gave over 5,000,000 red to the cubic millimetre, and 18,000 white.

It seemed evident that there was suppuration going on in the chest, and it was thought most likely to be an empyema, possibly diaphragmatic. The possibility also of a subphrenic abscess was considered, though this did not seem to be very likely, as the liver was not depressed. The points which made the case somewhat dubious were the extent of dulness and signs of effusion without marked dislocation of the heart apex, and without anything like a typical line of dulness and not of movable character. The absence of fluid also, on aspiration with a good-sized exploring needle, suggested that there was something unusual.

The case was transferred to the surgical department and on the 13th, Dr. Halsted operated.

Under ether an attempt was made to find the abscess cavity by means of an exploring needle, which was thrust into the right side of the chest in several places, where dulness was marked. Then a portion of the fourth rib over the painful spot was excised, and only a small pocket of pus found; portions of the sixth and of the eighth ribs were also removed, but only small areas of suppuration within the pleura were seen. The wounds were stuffed with gauze, discharged for a time freely. Tubercle bacilli were extraordinarily abundant in the pus. The patient died early on the morning of May 8th.

Autopsy (Dr. Barker). Body somewhat emaciated. Scars of the incisions mentioned above, and two of them had slight sinuses. On making the preliminary median incision, pus oozed from beneath the skin over the sternum. On stripping back the skin, fistulous sinuses were seen close to the edge of the sternum in the second and third and fourth interspaces.

Thorax large; costal angle wide. Right pleural cavity has been largely obliterated, the visceral being intimately adherent to the costal pleura; both layers grayish-white in color, thickened and infiltrated. Over the lower lobe it is in places fully two centimetres in thickness, and it is adherent to the diaphragm. Tubercles have grown through the diaphragm and appear on the peritoneum. On this diaphragmatic surface of the pleura, there are a number of abscesses filled with greenish pus and cheesy material; the walls are lined with necrotic tissue. In front, between the pleura and the diaphragm, corresponding to about the seventh costal cartilage, there is a large recent abscess the size of a hen's egg, which has infiltrated the diaphragm and made an ovoid identation on the surface of the liver. Several of these intra-pleural abscesses exist along the spine, and have eroded slightly the bodies of the vertebræ. Here and there over the surface of the middle and upper lobes, between the layers of the thickened pleura, are recent abscesses, varying in size from a marble to a walnut. The whole lung is thickly studded with minute miliary and sub-miliary tubercles, gray and translucent.

On the left side there are no adhesions, and beneath the pleura there can be seen a few minute miliary tubercles, which are thickly set throughout the lung substance. The pleura is not at all thickened. The bronchial glands are somewhat enlarged, deeply pigmented and thickly studded with tubercles. The pericardium presents a few small miliary tubercles; no exudation. There is a small miliary tubercle on one leaflet of the mitral valve. The spleen is enlarged and soft, weighs 445 grammes and presents many miliary and sub-miliary tubercles. The same are present throughout both kidneys. In the ilium, Peyer's patches are reddened, and in some there are minute grayish-white and yellowish-white miliary nodules. The mucous membrane of the ilium, just above the valve, is completely studded with tubercles. Some are softened and breaking down, and there are slight superficial losses of substance. The mesenteric glands are somewhat enlarged and hyperæmic. There are also pale yellow areas. The glands along the aorta are enlarged, and many of them caseous. The glands along thoracic aorta are also enlarged and caseous. The cover-slips from the pus in the pleura show large numbers of tubercle bacilli. Agar Esmarch's tubes, made from the pleural pus, spleen, liver and kidneys, remain sterile.

2. *Subacute and Chronic Tuberculous Pleurisies.*

There are two groups of cases, with effusion, and the chronic adhesive form, the former being by far the most numerous.

(*a*) *With Sero-fibrinous Effusion.*

The process may be primary, or, at any rate, most extensive in the pleura, or secondary, to manifest tuberculosis of the lungs.

The primary constitutes an extremely important division of the tuberculous pleurisies, and here may be reckoned a not inconsiderable number of all the cases of the insidious form. The true character of the disease is frequently overlooked, and indeed for a long time there may be nothing positive on which to base a diagnosis. Though we speak of the disease as primary in the pleura, in almost every instance there are tuberculous foci in the lungs or in the bronchial glands, or the process has extended from the peritoneum. Frequently the cases are admitted to the hospital with acute manifestations, but with advanced pleural lesions evidently of long standing, and antedating the pulmonary tuberculosis. The following are illustrative cases:

Case VII. Bilateral tuberculous pleurisy; acute tuberculosis.

Henry W., aged forty-three, admitted July 29, 1891. Rather more than a year ago, patient was in hospital for jaundice and was discharged well. He returns complaining of cough and shortness of breath. He states that his present trouble began about four weeks ago; he woke up in the night with shortness of breath; has had chilly feelings, though no rigors and had felt very weak. He has had some cough, very little expectoration, no pain; no œdema of feet. He does not think that he has lost any in weight. Temperature on admission was 102°; the following morning 103°; pulse 128; respiration 36. The urine is dark yellow in color, clear, no albumin; Ehrlich's reaction not present.

The chest is broad and deep, expansion fair, a little more on the left than on the right. Percussion is clear on the right side at the apex, and to the fourth rib; below which there was impaired resonance. On the left side a clear note to lower border of second rib; dulness from the second to the fourth, and from the fourth rib in axilla there is flatness. Defective resonance over the central portion of the lung behind and flatness at the base. In the left lung there are numerous râles at the apex, with pectoriloquy, and behind distant tubular breathing. Breath sounds are almost absent at the left base. On the right side there is flatness at the base, with distant tubular breathing. Effusion was suspected at both bases, and he was aspirated in the eighth right interspace behind, and a small amount of hæmorrhagic effusion found. On the following day he was aspirated at the eighth left interspace behind, and a few c. c. of fluid (hæmorrhagic) removed. The sputa contained tubercle bacilli. The temperature was high, from 103° to 104.5°. He became delirious, had rapid breathing, blueness of the finger-tips developed, and the pulse became much enfeebled, 130, and he died on the morning of February 4th.

Autopsy (Dr. Councilman). Large, well-developed, well-nourished man; circumference of the thorax in nipple line 93 centimetres.

Left pleural cavity partially obliterated by old adhesions, especially at the apex and posteriorly. The remainder of the cavity filled with about 300 c. c. of turbid, yellow serum with flakes of fibrin. Both layers of the pleura much thickened by a new gray vascular tissue, and covered with a gelatinous fibrin. There are many opaque white nodules beneath the membranes, and the thickening is marked. The layers can be peeled off as a continuous membrane, and beneath them can be seen opaque yellow and gray miliary tubercles. The right pleural cavity presented old adhesions only at the base, and it contained 350 c. c. of sero-fibrinous fluid, the surfaces covered with fresh gray fibrin; the pleura and the membranes slightly thickened.

The pericardium was smooth; heart presented nothing abnormal.

Lungs. At the apex of the left lung there is an irregular cavity measuring three by five centimetres, the tissue about it in a condition of gelatinous and tuberculous pneumonia. There are clusters of tubercules and miliary granulations scattered throughout the rest of the lung. The right lung presents a few scattered miliary tubercles without any very large areas of consolidation.

A few fine miliary tubercles were found in the kidneys; mesenteric glands presented a few small tubercles.

The condition of the pleura here antedated evidently the more acute onset of his final illness, and he was probably the subject of a latent tuberculous pleurisy, followed by a general infection.

Case VIII. Chronic tuberculous pleurisy with effusion.

E. S., male, aged thirty-one, colored, admitted January 12, 1891, complaining of cough, pain in the right side, and dyspnœa. He has had cough at intervals for a year; no hæmorrhage. About Christmas of last year he got very much worse, and since then has had high fever, night sweats, dyspnœa, and abundant expectoration. His family and personal history are good.

He is well-nourished; face, lips, mucous membranes and finger tips are cyanosed. Temperature, 102°; pulse 128; respirations 54. On the left side there was dulness from the second rib, and the heart was pushed over to the right side. He was aspirated and twenty-seven ounces of fluid removed. After aspiration, the chest was clear to the lower border of the third rib, below that dulness shading into flatness at the base. The temperature range was high, 102° to 104°, and he had a good deal of cough. The patient was aspirated again on the 23d, and one litre of fluid removed. The sputa was examined repeatedly, with negative results, until the first of February, when bacilli were found in moderate numbers. The fluid did not re-accumulate to any extent. Very marked defective expansion on the left side. Breath sounds were clear on the right side; fremitus was present on the left side to the base, though the dulness was still very marked, and distant tubular breathing with fine râles. The note states that there was no diffuse, general bronchitis, such as might occur with an eruption of miliary tubercles. Pulse became rapid; he had delirium; the temperature kept high until the 31st, and it fell to 98° on the 3d, when he died.

Autopsy (abstract). Right pleura adherent over entire extent; firm. Left pleural cavity contains about 1,200 c. c. of slightly turbid serum. Left lung compressed, tough, leathery, dark red; adherent posteriorly along the spine; lower lobe presented several firm tubercles. The pulmonary and costal pleural layers were thickened and tuberculous. Right lung presented, in the upper lobe, numerous firm, gray tubercles and caseous areas. At the apex a small cavity about two centimetres in diameter. The lower lobe was very œdematous. A few miliary tubercles scattered throughout the lung. Small ulcer in the left vocal cord. No tubercles in the liver or spleen; one small tuberculous ulcer in the intestines.

More commonly the pleurisy sets in insidiously, and is the most prominent feature in the case. There may [illegible] no suggestion of tuberculosis, but in some instances the history of a previous attack or of hæmoptysis may arouse suspicions. After aspiration the fluid re-accumulates, and repeated tappings may be necessary. The patient regains a certain measure of health, with greatly thickened pleural membranes, and persistence of the dulness on the affected side. When [illegible] are carefully followed, a certain number of instances develop unmistakable pulmonary tuberculosis, or they die of a general infection. The following illustrative cases are of interest, from the fact that they were under observation for longer periods than is usual in hospital practice.

(To be continued.)

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Original Articles.

PHAGOCYTOSIS.[1]

BY [illegible]

The idea of presenting a paper upon the subject of phagocytosis suggested itself to me some time ago; for it had seemed to me, from certain incidental conversations, that perhaps too little attention was being paid to facts that are being brought out in connection with it.

This idea has been strengthened by the publication of the volume upon "La Pathologie Comparée de l'Inflammation," containing the lectures by Metschnikoff, delivered at the Institute Pasteur two years ago. Of course, much has since been done, but, so far as the facts there related have to do with phagocytosis, this work is in very much the direction of that which preceded it, and a short review of the whole subject does not seem to be uncalled for.

This book of Metschnikoff's appears to mark an epoch in comparative pathology, and yet very little attention has been paid to it. Although, as the author says, the theory of phagocytosis is not explained in its entirety in it, nevertheless there is enough of the subject included to amply repay the labor of perusal, to those who are interested.

Before coming directly to the subject matter of the paper, a few words of explanation are necessary.

Ever since the knowledge of the infectious diseases was so enlarged as it has been by bacteriological studies, explanations have been sought of the methods by which bacteria are disposed of in the living animal tissues when they have once effected an entrance; and equally has a solution of the phenomena of immunity, either natural or acquired, been searched for. These phenomena can depend only upon some property of the tissues attacked, that renders them an unfavorable soil for the development of the bacteria seeking to gain an entrance — a fact that is easily proven by the *toxic* effects of sterilized cultures when introduced into animals that are insusceptible to the effects of the living bacteria, from which these cultures are derived.

As offering some explanation of the facts that are matters of common knowledge — the conditions of immunity and the commoner ones of recovery from infectious disease — there have been a number of theories advanced, and supported with more or less vigor and ability.

The bacteria are known to produce their effects in several distinct and definite ways: (1) by mechanical obstruction pure and simple; (2) by abstracting from the tissues of the body the material necessary for their own development, and, by so much, depriving the tissue-cells of nutrition necessary for *their* development; (3) by the production, during their growth, and, either by direct exciting metabolism, or, as the result of the chemical affinities of the elements left in unstable equilibrium after those necessary for the bacteria have been abstracted, of new chemical compounds that are destructive to their own further activity, or even to their further existence.

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[1] Read before the [illegible]

These processes being generally known to occur — the actual destruction of the bacteria or the limitation of their activity, going so far, as to make this latter none at all — have been explained upon several grounds.

Immunity — using the term generally, to express *any* degree of limitation of the activity of bacteria — has been explained upon the ground that (1) the bacteria during their growth in the living tissues, produce the loss of some material in the tissue-cells that is necessary for bacterial development, and that this loss is not supplied to the tissue-cells for a definite period of time, this time varying in length and covering the period of "immunity" of the individual organism against that special disease. This supposition is purely theoretical and very little evidence of any kind has been brought forward to defend it. (2) The bacteria are supposed to produce, during their development, and in the same way as they produce the elements hurtful to the tissue-cells, certain other elements, or rather compounds, that are destructive to their own development and existence, and that these new compounds, the result of bacterial development, are eliminated from the living organism only slowly; so that during their elimination and during their presence only, the organism is protected against a second invasion of the bacteria — in other words, for that length of time is immune against a second attack of the disease. If this supposition be correct, and if these substances are the result of the development of the bacteria, it offers no explanation of the existence of these immunizing substances in animals *naturally* immune to any special disease — at least, no more explanation than that offered by the immortal "Topsy" for her own existence, "she growed." Nevertheless, a reference to Behring's latest publication, "Die Blutserum Therapie," in which his theories in regard to the occurrence of immunity are elaborated, will show that there is a strong tendency to neglect, in the light of the more recent researches, all that has gone before, or, if the suspicion may be given expression, much that has not been done in Germany. The author, in seeking to show the various methods that have been adopted for procuring immunity, gives the following tables, that furnish a satisfactory summary of the subject:

I. Showing the method of action of the agent producing immunity. It occurs (1) by the destruction of the living cause of the disease; (2) by hindering the growth of this living cause; (3) by the destruction of its infectious properties (which result, according to Behring, is effected by the taking away from the bacteria, of their power of producing their poisonous products); (4) by the destruction, in the infected organism, of the poisonous material produced there; (5) by such a change of the central organs or of the living cells, that they obtain a higher degree of resisting power against the nerve toxines and cell toxines produced by the bacteria.

II. The conditions necessary for the production of immunity are as follows: A, a passive state of the organism (exhaustion theory and the theory of nonfavorable culture medium); B, a functional state of the organism, divided into (1) a function of the living condition of the organism (the contest theory), and (2) a function of the dead condition of the organism.

The question of whether phagocytosis plays any part in this process is completely ignored, unless it be what is meant by the expression "the contest theory"; and certainly no stress is laid upon it, nor is it considered in any of the statements made during the course of his book.

So much and so excellent work has been done upon this part of the subject, however, that it is not possible to ignore it entirely — as many of the workers of to-day are inclined to do — and even with the brilliant results that have been reached by methods, of which phagocytosis probably does not form a part — exemplified in this work upon "Blood-serum Therapeutics" of Behring and others, there remain many processes occurring in the natural course of disease, in which this especial property of the cells must be reckoned with.

The theory of phagocytosis is simply this — that in many of the processes that follow the introduction of bacteria into living tissues, certain cells of the fluid and solid tissues of the body act as actual phagocytes; they possess the property of collecting about the invaded region, and of englobing and destroying, by absorption, the living bacteria, that without their interference would flourish, gain access to other portions of the organism, and produce an attack of an infectious disease.

The cells that are possessed of this power, do not, as is often stated, come solely from the leucocytes (the white blood corpuscles), but under certain conditions and in certain diseases, perhaps in all, some at least are produced from the fixed cells of the surrounding tissue; and in such case they have characteristics that make them easily recognizable.

One of the first results of experimental work that called attention to this englobing property of certain cells seen in inoculation experiments, was that following the employment of injections of anthrax bacilli in animals that were susceptible and in those that were insusceptible to attacks of the bacilli. In the first case, that of the susceptible animals, few leucocytes were found at all, and those that were present were not found to contain any bacteria; in this case the micro-organisms were found in enormous numbers in the blood-vessels, but lying free in the blood-current. An entirely different appearance presented itself, however, when the same bacteria were injected into animals that were immune to their attacks. In this case, there was found a much larger number of leucocytes, and they were seen to be crowded with large numbers of bacilli; whilst none, or almost none of the bacteria were to be found in the blood-current or in other parts of the body than that in which they had been introduced. This appearance was found to be present, not only in animals that were possessed of a natural immunity to anthrax, but in those that had been made artificially immune as well. The natural sequel, therefore, was that this complete contrast should have attracted attention, and should have been seized upon [illegible] immunity in principle, but the destruction of the bacteria in the body and the recovery from an infectious disease as well.

It is to Metschnikoff that the first statement and amplification of this theory is due (and, lately, to certain of his followers and proselytes also); and his assertions have been supported by the most brilliant series of minute and painstaking investigations of recent years.

Starting with known observations, made during many years upon unicellular organisms, he sought to apply the results of these observations to the single cells of more complex beings. It has long been known that the unicellular plants are capable of englobing granules of pigment, which remain for a longer or shorter time in their interior, and that soluble substances, taken up in the same way, would disappear gradually, and that it is in this way that nutrition is obtained. Observations were further made, showing that in not exceptional cases, these same single-celled organisms were capable of englobing living bacteria, and that bacteria thus taken up would gradually disappear in the same way as did the particles of nutritious material; the characteristics of this disappearance being a gradual paling of the rod, a granular appearance, and finally its complete fading from view.

These phenomena were seen to be of regular occurrence, not appearing as variations and unusual accompaniments of special conditions; they were distinctly a provision of Nature for the nutrition of the amœbæ, and for their protection against the attacks of hurtful agencies.

At the same time, the action was so similar to what has already been said had been observed in the case of animals immune to anthrax when inoculated with the bacilli of that disease, that it was inevitable that a comparison should be drawn between the two, and a similarity of action sought to be established. To carry out the idea, the living tissue is to be looked upon as a collection of single cells, certain of them endowed with the power of independent action under certain circumstances. Under most of the conditions of vitality, of course, there is, and must be, a certain oneness of life, necessary for the higher vitality of the organism of which they are but constituent parts; but under exciting force of differing kinds this unity is done away with, and to some classes of these cells of living tissue is ascribed the duty of protection and repulsion that may be carried out in various ways.

Therefore, the fundamental idea of phagocytosis is that living multicellular tissue is to be looked upon as a collection of single cells capable of individual action, in classes, under special circumstances. This being the case, it remained to show if any of the cells of complex tissue had this power of independent action; and the question did not need to be asked long before an affirmative answer could be made. In fact, it had already been made, in the researches of Cohnheim and all his followers, upon the migratory powers of the white blood-corpuscles in response to any irritation of the hurtful kind; and all that was at the time known in regard to these bodies was in the nature of a prop of any theory that explained this responsive action by a tendency towards resistance to an invasion of hurtful elements. But at first the idea was that their migration was simply for the building up of a protective wall against the further advance of the attacking force, the nature of which was not at all understood until modern methods of bacteriology came into use. Then only, did the conception occur, that there might be something more in the part played by the leucocytes than a simple negative opposing force, and the development of this conception led to the experiments upon phagocytosis.

Metschnikoff's first paper upon the subject was published some ten years ago, and has been followed rapidly by others in the same direction, until the mass of material that he has collected is enormous, and absolutely astonishing to one who becomes familiar with it for the first time. The literature this experimenter has produced is scattered through the pages of many journals, both French and German, although of late years most of his original work is to be found in the volumes of the *Annales de l'Institut Pasteur*.

As applied to the complex, multicellular organisms, much of the original work was done with the bacillus of anthrax, both in its full strength and in an attenuated condition, and the experiments were conducted upon *both* warm- and cold-blooded animals — in the former case upon rabbits, guinea-pigs, and rats, and in the latter upon daphnia, other small animals, and especially upon frogs. With the latter, many of the experiments were, of necessity, made upon them at a temperature above that at which they ordinarily lived; and while, at their normal temperature, they are insusceptible to the action of the anthrax bacilli, this immunity disappears when their bodies are raised to such a temperature as will permit of the development of these bacilli. According to Metschnikoff, the immunity at the lower temperature is due, not alone to the unfavorable condition for the growth of the bacilli, but also to the phagocytic action of the white corpuscles, which at this temperature — their normal one — are found to be full of the bacilli, a fact which is not observed when the animal is raised to a higher temperature and becomes susceptible to the disease; he explaining this susceptibility by the hindrance to the action of the white corpuscles by their unnatural temperature, whilst Baumgarten remarks that frogs raised to such a temperature would die anyhow, but omits to state how this occurs so early as is the case after inoculation with anthrax bacilli.

The experiments, however, were not limited to work with the virus of anthrax, either attenuated or of full virulence; but investigations have been made upon many other diseases, notably chicken-cholera, tuberculosis (as a type of a chronic inflammation), septicæmias of various kinds, and serous inflammations. In the latter forms of reaction, it is true that very few cells possessed of phagocytic action are to be seen; but, as Metschnikoff says, it is equally true that these forms of inflammation are as yet but incompletely understood, and if, because a thing has not been seen, its existence be absolutely denied, an unscientific conclusion would be reached.

As a result of all this work, which has been supported by what Metschnikoff considers as of equal importance, the pursuit of similar studies upon invertebrates as well as vertebrates, the general conclusion has been reached from the observed phenomena, that, in nearly all (if not all) of the infectious diseases, an important part in the destruction of the invading bacteria is played by certain individual cells endowed with phagocytic powers. Many interesting properties of the cells of animal tissues have been brought out as well.

In the first place, it seems to have been definitely determined that the phagocytic power is not confined by any means to the leucocytes, derived from the white blood-corpuscles, but that the single nucleated cells of a larger size than the ordinary multinuclear bodies commonly seen in any purulent exudation are derived from some of the fixed tissue elements in the neighborhood of the reacting locality. These are the "macrophagocytes," which are always possessed of a single nucleus, and are usually larger than their neighbors, and are so called to distinguish them from the "microphagocytes" that are multinuclear and are derived from the leucocytes or white blood-corpuscles; the main distinction in all cases being the possession of more than one nucleus, and not the size, which may vary very slightly. (The further division of the leucocytes may be found in Metschnikoff's book on "Inflammation," p. 131.) These macrophagocytes are possessed of the power, under certain conditions, of englobing and destroying the microphagocytes as well as bacteria; and in those cases in which they are freely formed, seem to have more active phagocytic properties, as against bacteria, than have the microphagocytes. In a comparatively recent work, Metschnikoff also describes the formation of phagocytes from the invaded muscular tissue, to which he has given the name of "myophagocytes."[2]

Another of the exceedingly important properties of the cells, that these recent investigations has brought out, is that of "chemiotaxis," which is the property that movable cells have of responding to irritation of any kind — either chemical, as in the case of simple chemical irritants, or vital, as in the case of invading bacteria, the latter, of course, being frequently double in its action, both chemical and vital. This response to external irritation is of an active kind, and is manifested by actual movement towards, or away from, the irritant material. These two classes of movement are called positive chemiotaxis, and negative chemiotaxis, according as the movement is towards or away from the invaded part; and the property is manifestly an exceedingly powerful one, for it is seen to occur in all kinds of experiments and natural phenomena of the sort that would call it out, and is an occurrence familiar to every one who has ever seen a swelling in any of the vital tissues, the result of any sort of irritation.

From all the work that he and his followers have done in this direction, Metschnikoff reaches his well-known conclusions in regard to phagocytosis: that it is an active factor in the production of immunity from an infectious disease or in the recovery from such a disease; and that there is always an effort made in this direction, by such cells of the organism as may be possessed of this property of englobing and destroying bacteria.

The objections that have been raised to his conclusions are many, and have come very largely from German observers. Negative evidence in such a question may well be excluded; and an examination of the positive facts brought forward is exceedingly interesting.

Among the most active opponents of the assertions made by Metschnikoff was Christmas-Dirckinck-Holmfeld.[3] Defining his idea of Metschnikoff's idea of phagocytosis, he says that it is the ability of the leucocytes of various animals to "eat" (and thereby destroy) invading bacteria, and that immunity against infectious disease depends upon this ability of the leucocytes; that every organism is immune to all parasitic diseases, the parasites of which can be eaten by the phagocytes of the organism, whilst an organism cannot defend itself against any microparasite whose chemical or physiological properties are such that it cannot be destroyed by the leucocytes. This theory was at first received with enthusiasm until Baumgarten objected to it.[4] An answer to his objections being made by Metschnikoff,[5] Ribbert[6] made certain experiments with the aspergillus fumigatus and flavescens, by injections into the ear vein of rabbits. As a result, he saw a wall of leucocytes built about the spores (in the lung, the liver, and the spleen), by means of which their sprouting was circumscribed and was sometimes prevented entirely; and he concluded that the leucocytes prevented the development by suffocation, that is, by preventing the access of oxygen to the spores.

Wyssokowitsch[7] found that after the injection of non-pathogenic bacteria into the blood-vessels, some of them were taken up by the endothelial cells of the capillaries, but he could determine no activity of the white blood-corpuscles in taking up the bacteria, and therefore concluded that phagocytosis plays but a subordinate part in producing the harmlessness of bacteria. Such a conclusion at the present time, from such experiments, would certainly not be justified.

The special theoretical objections raised by Christmas-Dirckinck-Holmfeld are that Metschnikoff's experiments were made mostly upon cold-blooded animals kept at a temperature of 36°C., and that his experiments upon warm-blooded animals were very few; that it is true enough that in warm-blooded animals and in virulent diseases, like mouse-septicæmia and tuberculosis, there is manifest a tendency on the part of the cells to take up the bacteria, but it is also true that the bacteria of suppuration are almost never seen in the cells. He considers, also, that not enough attention was paid to the changes in the local site of the inoculation, and devoted his experiments to showing that these may be of the utmost importance. He used rabbits, mice and white rats for animals, and anthrax bacilli for material; the latter because Metschnikoff had done so, and also because they are easily seen, easily cultivated and characteristic. Rabbits and mice are very susceptible, whilst rats are very insusceptible — in fact, almost immune — to inoculations of these bacilli; so that all sorts of variation of effect may be seen by the use of these three kinds of animals. "The results show, constantly, a variation in the changes at the point of inoculation, in accordance with the greater or less susceptibility of the animal towards the material employed." Subcutaneous inoculation in mice and rabbits gave, twenty-four hours afterwards, a slight amount of clear serous exudation, that contained many anthrax rods, but no (or almost no) pus-corpuscles, and the number of these did not increase as time went on; there was only a local œdema, never any suppuration. With rats, on the other hand, the conditions found were different. In all these animals experimented upon, pus constantly occurred in the secretion from the wound, the amount varying with the virulence of the material used and the greater or less susceptibility of the individual animal to the virus; the older the rat, the more marked the amount of pus.

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[2] Annales de l'Institut Pasteur, 1892, No. 1.

[3] Fort. der Med., 1887, S. 401.

[4] Berl. klin. Woch., 1884; and Lehrbuch der Path. Mykol., 1886.

[5] Ueber den Kampf der Zellen gegen Erysipelkokken: Virch. Arch., Bd. 107.

[6] Unt. u. d. Schicksal Path. Pilze im Organismus: Deut. Med. Woch., 1885, No. 31.

[7] U. d. Schicksal d. ins Blut injicierten Mikroorganismen im Korper des Wirbelthieren: Zeit. f. Hyg., Bd. I., No. 1.

Employment of attenuated virus gave a very different result, so far as rabbits and mice were concerned; in this case there always occurring a small localized suppuration.

The results of his inoculation experiments were, briefly, as follows: inoculation of anthrax bacilli of full virulence produced in very susceptible animals (rabbits and mice) a very slight (or almost no) reaction at the seat of the inoculation; suppuration *never* occurred; the inoculated bacteria quickly found their way throughout the organism by means of the lymph- and blood-channels, where they developed with great rapidity and produced the death of the animals. In slightly susceptible animals, the inoculated material produces a perceptible suppurative reaction in the tissues, and this pus-formation is in proportion to the greater or less susceptibility of the animals experimented upon; the less the susceptibility the greater the amount of pus-formation.

Pus-formation, therefore, plays no slight part in the determination of the greater or less susceptibility of animals towards anthrax; and not only in this disease, but the same thing is true of many of the infectious diseases. It is a common observation that the most virulent infectious diseases — those in which death occurs in a very short time (from hours to days) — are precisely those in which pus-formation does not occur; whilst those that are slow in action, in which fatal results occur late, if at all, are equally those in which marked pus-formation is seen.

This is perfectly true; but the facts may easily be interpreted in the line of believing that, where pus-formation does not occur, the phagocytic power of the body cells has been overcome by some influence upon their chemiotactic properties, rather than to make it a ground for rejecting recorded observations, or for relying upon the explanations of our author that follow. He considers that the means by which the bacteria are rendered harmless, are to be ascribed much more to chemico-biological action than to any power of the cells to absorb corpuscular elements, which is Metschnikoff's "anomalous supposition." He further states that by the observation of the behavior of the pus in insusceptible animals, it can be seen that the cells play no such part as is ascribed to them by Metschnikoff; for example, in the pus in rats inoculated with anthrax, and in animals in which the white corpuscles could with ease destroy the bacilli, very few of the bacteria are to be found in the cells; most of them are lying free in the fluids, and very few of them in the cells, whilst these show a slight tendency only to destroy the bacilli. The inoculation of attenuated anthrax-cultures in rabbits and mice shows the same thing — only rarely is there a rod in the cells; and in rabbits inoculated with cultures of full virulence, when pus-corpuscles are found at all, it is only here and there that a rod is to be seen in a cell; and the same is true of mice.

These results, the author claims, and with justice, are in sharp contrast to those of Metschnikoff, who, he says, used mostly warm-stage preparations from warm-blooded animals, with no observations in the living animals, most of his work being done upon cold-blooded animals, and therefore inapplicable to the warm-blooded races.

He gives other experiments, tending, as he thinks, to show that the bacilli are killed before phagocytosis can be supposed to have had time enough to take effect, and considers that the overcoming of these bacteria must be due either to the absence of oxygen or else to the production, during their development, of some material hurtful to their own existence.

(To be continued.)

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CASES OF REMOVAL OF THE APPENDIX VERMIFORMIS BETWEEN ATTACKS OF RELAPSING INFLAMMATION.

BY A. T. CABOT, A.M., M.D.,
Surgeon to the Massachusetts General Hospital.

The contrast between an operation for the removal of the appendix vermiformis in an interval between attacks of inflammation, and the same operation done in the midst of an attack, is very striking.

When summoned to operate in the midst of an attack, the surgeon finds the patient usually exhausted by want of sleep and by pain. The field of operation is not aseptic, and the treatment previously directed against the inflammation with hot and stimulating fomentations, often of sufficient strength to cause blistering, has put the skin in a condition that makes asepsis impossible.

Then, the distention of the intestines, due partly to the inflammation, and partly to the opium which has been administered, interferes very decidedly with the operation. The tympanites, lifting the abdominal wall forward, increases the depth at which the appendix lies, so that it greatly adds to the difficulty of bringing it to the surface and removing it.

The presence of pus in these cases, too, adds a very serious complication. When the pus is shut up in a circumscribed cavity, the walls of which are composed of agglutinated coils of intestines, it may become impossible to properly separate and remove the appendix without liberating the pus among the healthy coils and infecting the general abdominal cavity. This condition may thus prevent the ideal completion of the operation by the removal of the appendix.

But suppose the operation completed. It is almost invariably necessary to establish drainage, and for this purpose to leave the wound in the abdomen but imperfectly closed. This imperfect closure of the wound leaves great liability to hernia.

After this picture of the difficulties which surround the operation done for an acute appendicitis, look at the condition which obtains when the operation is done in an interval of health between attacks. With thorough antiseptic precaution, the surgeon approaches the patient, who has been put in the best possible condition for the operation. His bowels have been emptied of their contents until the abdominal wall is flat and soft. His strength has been attended to, and he is in the best physical condition; his kidneys are acting well; his skin has been thoroughly prepared, so that there is no danger of contamination from the outside; and after the opening has been made, the appendix, though perhaps tied by adhesions and possibly so held by them as to be removed with difficulty, is, at least, not surrounded by pus, and the dissection necessary to free it can be carried out under the intelligent guidance of the eye.

The collapsed condition of the intestines gives the operator room to work, and at the same time to shut off the rest of the peritoneal cavity with sponges during the manipulations. At the end of the operation, there being no necessity for drainage, the abdominal wound can be tightly and carefully sutured, so as to reduce the danger of any subsequent hernial protrusion to a minimum.

An operation done in an interval of health has, then, very great advantages over an operation done in the midst of an attack of inflammation. It would, therefore, seem wise, in cases of recurrent appendicitis (in which the attacks are sufficiently severe to make it seem probable that an emergency operation may be required in some of them), to accept the lesser risk and to do the operation when the patient is comparatively well. Especially is this the case when, owing to the patient's habits and inclinations, it is extremely irksome to have the danger of an attack hanging over him and interfering with his arrangements for business and pleasure.

It is impossible to lay down any rules by which the question, to operate or not to operate, shall be decided; but this judgment must be made in each case for itself.

The cases which I have operated upon and those which I have seen in the hands of other surgeons, have shown me that there is always a distinct reason for the tendency to recurrence of inflammation. In one of them it was found that, through the inflammatory action about the appendix, nature was effecting a cure of the condition. In the others, however, there did not seem to be any likelihood that the process was tending towards a cure. The following cases are reported as a contribution to the knowledge of the conditions which are likely to be found in these patients.

Case I. The first operation of this sort that I did was on a young man of twenty-five, in November, 1890. It has already been reported at length, and I will only mention here the fact that I have recently heard of him as having been perfectly well since the operation.

The appendix in this case was strongly bent backward beneath the cæcum. It was somewhat enlarged, with thickened walls, which were infiltrated with round cells. The mucous membrane was destroyed by an extensive ulceration of its surface.

Case II. Philip McD., twelve years old, was sent to the Massachusetts General Hospital, July 7, 1891, by Dr. Cowdrey, of Stoneham, with the following history:

In November, 1890, he had his first attack of severe abdominal pain. This was accompanied by vomiting and constipation. The pain was felt across the whole abdomen and lasted for three or four days. Since that time he had had twelve distinct attacks and many slight threatenings of an attack. At first there would be three or four weeks between the attacks, but latterly they had followed each other with intervals of ten days or less. The pain in the later attacks had always been distinctly localized in the right iliac region, and a tumor had been noticed in the right side. This tumor had not disappeared in the last two months, although it diminished in size between the attacks.

He was kept under observation for three or four weeks, and then, being in a quiescent state, he was operated upon.

An incision was made in the right linea semilunaris, and the tumor, which was then about the size of a mandarin orange, was found to be made up of omentum and coils of intestine bound together. These being separated and pulled aside, the end of the cæcum was found, and by following the tendinous line in its wall, the appendix was found to be sharply curled back beneath the caput coli and closely adherent in this position. Persistent attempts were made to separate it from its connection with the cæcum, but it was found impossible to do this without serious danger of extensive laceration of the bowel. It being thought that in its closely adherent condition, it was not likely to give subsequent trouble, and in the belief also that the attacks of pain might have been partly due to the adhesions in the region about, the operation was abandoned and the wound was closed by sutures.

The bowels moved on the second day, and the boy made an excellent recovery, going home at the end of the third week.

I subsequently heard from Dr. Cowdrey that he had one or two slight feelings of discomfort soon after he got home, and that since that time he has been perfectly well.

Case III. Harry W. L., aged twenty-two, a machinist, entered the hospital October 19, 1892, with the object of having the appendix vermiformis removed in an interval between attacks of inflammation.

He had his first attack of pain in this region ten months and a half before entrance and since that time he has had eighteen attacks, which occurred about every two weeks when working, but when he was idle the intervals were lengthened to six or eight weeks. The earlier attacks did not keep him from his work. The pain was not very sharp at first, but it was distressing and gradually increased until it usually induced vomiting. The pain was always mainly localized in the right iliac region, but spread from there in many of the attacks over the abdomen, which then became much distended. The attacks usually passed off slowly and in the intervals between them he was perfectly well. The patient said that he could feel a lump in the region of the appendix just after each attack. He was a slender man of medium size.

Examination revealed but little in the region of the appendix. Deep pressure showed slight tenderness and there was a little mass to be felt about where the appendix might be expected. An examination of the urine showed the presence of a few hyaline and granular casts, with some blood and some epithelial cells adherent; due probably to a slight renal hyperæmia. He was kept quiet and treated with the liberal administration of water and with counter-irritants over the kidneys for a few days, when this condition of the urine gradually disappeared. While waiting for this, the patient had a slight attack of pain in the region of the appendix. Nothing could be felt during this attack, although it was severe enough to induce vomiting. There was no rise of temperature during it.

The patient finally being in good condition, the operation was done on October 26, 1892.

Incision was made in the usual place, the cæcum presented and the appendix was readily found. It was little, if at all, increased in size; the end of it was free, but at the middle it was tied down by a band of adhesions which bent it upon itself to a right angle. From this point to the cæcum there were many adhesions, but they yielded readily.

The meso-appendix having been separated, the appendix was tied close to the cæcum and then divided, a little cuff of the serous coat having been turned back before the division of the muscular and mucous coats. This cuff was then turned over the stump and stitched with one or two intestinal sutures.

After removal it was found that the appendix, which was somewhat thickened by chronic inflammation, contained a very small concretion. The wound was closed by silk sutures and the patient made a good recovery. He was out of bed on the twelfth day, and went home at the end of three weeks. Since that time he has remained perfectly well.

Case IV. Frederic C. A., aged nineteen, a clerk, was sent to me by Dr. Cleaves, of Medford, in October, 1892, with the history that he had had two sharp attacks of appendicitis. The first of these attacks had occurred a year and a half before, and the last one had occurred in the previous April.

The first attack began with a very sharp pain in the front of the abdomen in the right iliac region. The pain gradually increased until the third day, when the patient took to his bed. There was tenderness in the region of the appendix, but no distention. Nausea, vomiting and diarrhœa accompanied the attack, and the bowels continued loose for a month. The pain was very severe and required the liberal use of morphine for its control. One week after the commencement of this attack a lump the size of an orange was noticed in the right iliac region, and this could also be felt through the rectum. As convalescence was established, this lump gradually and completely disappeared.

He was then well, except for occasional slight pain in that region, until the second attack. This was like the first, except that it only lasted one week and no tumor was discovered. The patient had been pretty well since this last attack, but insisted upon having the operation done, as he dreaded the possibility of another attack, and feared the chance of its occurring when medical aid was not easily to be had.

The examination of the abdomen was wholly negative. After consultation with Dr. R. H. Fitz, it was decided to accede to the patient's request, and the operation was performed November 1, 1892.

The incision was made in the usual place and the cæcum was readily found. The appendix extended directly down from it into the pelvis. It was very adherent and stretched far down into the pelvis, being continued by a broad adhesion from its end, which was apparently attached somewhere down near the rectum. It being found difficult to separate the appendix from this adhesion, the meso-appendix was tied off, and after the appendix had been ligatured close to the cæcum, it was cut away. It was now found possible, by traction, to separate the end of the organ from the adhesions in the pelvis, and it was removed. The wound was closed with silk sutures, after carefully cleansing the abdomen. The appendix contained a concretion about the size of a large bean.

On the second day it was found impossible to keep the patient quiet, he having no pain and moving about in bed readily. He was sitting up on the twelfth day, and was discharged at the end of three weeks. December 21st, having been on a vacation, he wrote that he was feeling finely — "In fact," he said, "I don't believe I ever felt better."

Case V. Philip C., twenty-one years of age, applied to me in January, 1893, for the removal of the appendix vermiformis. He had had five attacks of appendicitis, the first in March, 1889, when he was in bed for two weeks and had a tumor in the ileo-cæcal region. In May of the same year he had a similar attack, but more severe with a larger tumor. This time he was sick for three months, and Dr. G. K. Sabine, who attended him, thought there was suppuration about the appendix. The next attack came in October, 1892, lasting three weeks and followed by another soon after, lasting two weeks. On December 17, 1892, he had the last attack before he entered the hospital, which also lasted two weeks. In these attacks there was a distinct tumor to be felt.

The operation was done January 11, 1893. The incision was made in the usual place, about two inches long. The appendix was readily found, but was very adherent to the omentum and was twisted upon itself and adherent to its own mesentery. The adhesions were freed with the finger; but in separating the omentum from the angle made by the sharp bend in the appendix, a tear was made from which a few drops of pus oozed out. The appendix was readily separated from its mesentery and drawn out. After a cuff of the serous coat had been turned back, a ligature was tied around the muscular and mucous coats, and the appendix was cut off. The cuff of the serous coat was then stitched over the stump.

The patient made a good recovery from this operation, somewhat retarded, however, by suppuration of the outer part of the wound. It seems probable that this became contaminated at the time that pus escaped from the appendix, as the most thorough precautions were taken in every other respect to protect the wound from infection. I saw him last about February 15th, and at that time the wound was thoroughly healed, and he was having no discomfort of any kind.

Dr. Whitney describes this appendix as being constricted in the middle and bent upon itself. Its lumen was not obliterated at the point of constriction, as a fine bristle could be passed through it.

Microscopic examination of the constricted portion showed the glandular layers considerably destroyed, irregular and infiltrated with round cells, which could also be followed out into the muscular coats. Adherent to the tip of the appendix was a small, firm mass, which showed a muscular coat encircling it, but a lumen entirely filled up with connective and fat tissue. It seems probable that this was a portion of the tip which had become obliterated and constricted entirely off from the rest. The tissues about the base of the appendix were quite normal.

It is noticeable that in all but one of these cases, the appendix was sharply bent upon itself. In one, at least, there was a very decided narrowing of the lumen at the angle. The bend was so sharp in each of them that it caused a constriction at that point, and I am inclined to regard the constriction of the lumen of the appendix as in great measure responsible for the recurring attacks of inflammation.

When an appendix which is congenitally bent upon itself and thus narrowed, or which has become so by an attack of inflammation, is affected by a catarrhal process, the fluid secreted in the distal portion cannot readily find its way back and discharge into the bowel. This leads to the distention of the part shut off. If the pressure finally overcomes the resistance at the point of occlusion, the fluid escapes into the intestine, and the pain caused by the stretching of the wall of the appendix ceases. This course of things would account for the frequently-repeated, mild attacks seen in some of these cases.

After this was written I saw the following case, which seems to illustrate this point, and in which the reported observations have been carefully made; the patient being himself a physician with a lax abdomen, in which careful and accurate palpation could be obtained.

He is thirty-three years old, and has for six or seven years been subject to attacks in the right lower segment of the abdomen. They have been variable in frequency, sometimes being but three or four weeks apart, and again there being a period of six or seven months without one.

There is apt to be a little premonitory discomfort in the abdomen; but when the sharp attack comes, the pain is agonizing, and sometimes accompanied by vomiting. The severe pain usually lasts from one and a half to three hours.

He has made careful examinations of the cæcal regions during these attacks, and his observations have been confirmed by other good observers.

Early in an attack the appendix may be felt as a distinct tumor which is not especially sensitive. The pain is at first paroxysmal in character; later the paroxysms often run together in such a way that the pain is constant, with occasional exacerbations. During the course of the attack, the region of the appendix becomes more and more sensitive to pressure. The appendix may be felt contracting "like a uterus" during a paroxysm.

A constant phenomenon is the final, sudden cessation of pain immediately following the only retching or vomiting of the attack. There has never been any disturbance of urination, or any after trouble in the bowels.

The pain during the attack is referred to the abdomen in general, more in the region of the umbilicus. It is not localized in the cæcal region. After its sudden cessation there is left a little local tenderness, a sense of stiffness, especially in walking, and a small tumor in the region of the appendix, all of which symptoms pass off in twenty-four or forty-eight hours.

This seems to be distinctly the history of an accumulation of fluid in the appendix causing pain by distention; which pain is finally relieved by the escape of the fluid into the bowel. If the occlusion is so complete that the fluid cannot escape, it may be absorbed, or it may break through the wall into the peritoneal cavity.

I have at autopsy seen one case in which an appendix which showed little evidence of inflammation, but which had in a previous attack been occluded, had ruptured and discharged its contents, setting up a general peritonitis. Although the escaped material usually sets up a severe peritonitis, in some cases it is probable that the peritoneum is able to absorb and so dispose of an effusion of this sort. In the fifth case that I have reported, there can be but little doubt that the appendix had been previously ruptured; for the gentle separation of the omentum at once revealed an opening beneath it.

The occurrence of a large tumor in this case in one of the early attacks, points to the probable existence of an abscess at that time. Its subsequent disappearance was due either to the absorption of the pus, or to its gradual discharge through the perforated appendix or into the bowel at some other point.

The fourth case is interesting as being the only one in which a considerable concretion was found; and in spite of the presence of this foreign body, there had been no attack of pain for seven months.

It is possible, and I think probable, that the position of the appendix accounts for this immunity from pain. It was adherent in such a way that it was held stretched in a straight line, and as its lumen was not obstructed, the fluids forming in it had an easy road of escape into the bowel.

My remarks upon the advantages of an operation done between attacks over an operation done after the formation of pus and adhesions, may be applied with modified force to the operation in the midst of an attack, and the considerations urged there clearly set forth the importance of operating early, when the attack is of such severity as to indicate the probable necessity of interference. I find that I am more and more inclined to immediate operation when the presence of a sharp attack of appendicular inflammation is established; but I still see occasional cases in which the inflammation is of so mild a grade as to make it seem wise to wait the subsidence of the attack, with the intention, if it is repeated, of operating in some interval of health.

One consideration which has sometimes led me to delay operation, has been the difficulty of accomplishing a thoroughly antiseptic operation in the surroundings in which we often find these patients; and with the object of making this occasional objection more rare, I wish to suggest to general practitioners that it would be wise, *in the presence of abdominal symptoms pointing to the possible necessity for surgical intervention, to always apply antiseptic fomentations, so that when the surgeon is called, he shall find an aseptic field of operation.*

Since this paper was read, an interesting article has been published upon this subject by Dr. William T. Bull, in the New York *Medical Record* for March 18, 1893. In Dr. Bull's cases he found, as I did, that there was generally some malposition of the appendix, which tended to reproduce the attacks. This was usually either a sharp bend, or a constriction in the appendix.

He has collected seventy-six published cases, with one death. In his collection of cases he includes my first case, which had been previously reported. Adding to these my other four cases brings the number up to eighty with but one death.[1]

It is to be feared that these statistics may be, in a measure, selected cases as successful cases are likely to be reported, while those that turned out unfavorably may not have been yet published. Even allowing something on this score, these results are certainly very encouraging. If a surgeon by the operation can offer a risk of but one and a half per cent., he may, I think, consider this a better chance than that which the patient would take if not operated upon.

Within a couple of months I have seen a man who had had two mild attacks, and who finally had a severe attack, of which he died, although the operation was done as soon as he was seen, at the end of the second day. The condition found was a sloughing appendix and a general purulent peritonitis. This is one example of many, in which mild attacks have finally led up to a severe and dangerous one.

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[1] Since this paper was in press I have operated on two more of these cases and they have made good recoveries. In both, the appendix was sharply bent, and fastened in that position by adhesions.

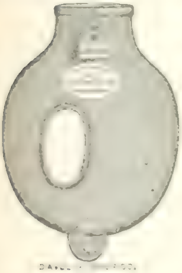
New Instruments.

A SIMPLE SUBSTITUTE FOR THE LEITER COIL.

BY [illegible], M.D.

[illegible]

THE accompanying cut illustrates a rubber bag made for the purpose of applying cold or heat to the mastoid region. A clamp (not shown in the cut) securely closes the neck, making it water-tight. It is applied with the wide part over the mastoid, the clamped end uppermost, and the auricle protruding through the opening. A piece of tape fastened to the rings above and below and passing under the chin and over the head, where it is tied, holds it in place securely; fastened in this way, it may be worn while the patient is sitting up or in the recumbent posture, and by reversing the clamp it may be worn on either side.



This simple apparatus is a good substitute for the Leiter Coil, and is more convenient for many cases in private practice. When filled with cracked ice it will serve its purpose for about an hour, being therefore much more convenient than the cold compresses commonly used, which require changing every two or three minutes, and entail a wetting of the skin, which is liable to excoriate it and add to the discomfort of the patient. It can also be used as a hot-water bag if desired.

NOTE. — The bag is manufactured by the [illegible] Company of Providence, R. I., and can be obtained of dealers in surgical appliances at a [illegible] price, [illegible] dispensary patient.

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Medical Progress.

RECENT PROGRESS IN FOODS, DRUGS AND ARTICLES OF DOMESTIC USE.

BY [illegible], M.D.

THE CHEMICAL DIFFERENCES IN COMPOSITION BETWEEN COW AND HUMAN MILK, AND THE MEANS FOR CORRECTING THEM.[1]

IN his paper before the Medical Society of Munich, upon a better method of sterilizing milk, Professor Soxhlet has pointed out that although this would remove the more important difference, yet it did not give to cow's milk all the properties which the natural food of the infant possesses. There still remains differences of a chemical nature which should also be removed.

Of those differences the following are the more important: (1) the different manner in which their caseins coagulated; (2) their different proportions of lime-salts; (3) the difference in their absolute amount of nutriment, and in the proportion of the separate ingredients to each other.

The first of the above differences has hitherto been considered of the greatest practical importance, because the less easy digestibility of the cow's milk [illegible] ascribed to its manner of coagulation; for cow's milk, when either acid or rennet has been added, produces a firmer curd than does human milk. We, however, now know that its manner of acting with rennet is alone of importance in this regard, and as this is quite a different process for its action with acids, all the conclusions hitherto based upon its action with muriatic acid or with this acid and pepsin are without any real significance as to its use as an infant food.

The difference in the manner of coagulation is not a sufficient ground for inferring a chemical difference in the caseins themselves. The firmness of the curd produced by the rennet of the stomach depends entirely upon the concentration of the casein solution, the amount of soluble lime-salts present, and upon the acidity of the solution.

With cow's milk all three of the above conditions are strongly unfavorable for its manner of coagulating. For cow's milk contains about twice as much casein, six times as much lime, and about three times as great acidity as does human milk. No wonder that with such a composition its coagulum is leathery, while the other is fine and flocculent. By proper dilution with water and neutralization, however, can cow's milk be so altered as to coagulate very much like human milk; yet it cannot be made to act exactly like it, because that the amount of lime-salts present cannot be lessened. The dilution with water has long been used as a practical means of lessening their differences. The addition of alkalies to reduce the acidity to that of human milk has been a second practical method. But a cow's milk so neutralized cannot be sterilized without suffering a marked alteration, for the milk-sugar being acted upon, the milk becomes brown and acquires a burnt flavor. Human milk would undergo a like change if sterilized, even without any addition. In neutralizing the cow's milk, therefore, it must be done after the sterilization, and best just before using by adding to each 100 grammes (or about three fluid ounces) 0.1 gramme (1.5 grains) of bicarbonate of soda, which may be in the form of a lozenge such as is prepared by apothecaries. This correction of the acidity is useful whenever a particularly firm curd is formed or the stomach secretes a larger amount of acid or of lime-salt than usual; otherwise every complication or opportunity for a renewed infection of the milk had better be avoided.

The more the milk is diluted with water the more flocculent becomes the curd which is formed. But this addition is limited by other conditions which are as important for nutrition as fineness of the curd. By too much dilution the volume of food to be taken becomes either excessive, or the absolute quantity taken too little for a satisfactory growth. An increased consumption of water increases the waste of albumin and of fat, and hinders the growth of the body. Furthermore, the increased excretion of urine disturbs the child and interferes with its well being. The chief disadvantage of too much dilution lies plainly in too little supply of nourishment, as a simple calculation shows. According to the investigation of E. Pfeiffer, a nursling of eight to nine weeks in age consumes daily 900 grms. of breast milk, a bottle-fed child given a like quantity of a mixture of one part cow's milk with three parts of water would receive but 8 grms. of albumin while the breast-fed child had 20.6 grms. Of total nutriment, the child at the breast would receive 113 grms., while the artificially-fed child only 29 grms. The latter, upon the base of albumin consumed, would be receiving not 900, but only 350 grms. of breast milk, while upon the base of total nutriment, the equivalent of only 230 grms. of breast milk. To satisfy its needs, it must, in place of the 900 grms. of breast milk, consume of the threefold diluted cow's milk 2,250 grms. for the albumin, or 3,600 grms. for the total solids. Such a disproportion of nutriment is a crying evil. Water, by ever so careful a sterilization, will never become breast milk. It will increase the number of the wet diapers but not the weight of the body.

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[1] [illegible]

Milk which has been boiled gives a very finely flocculent curd with rennet, and requires much more of the ferment. This alteration is in proportion to the duration and the high degree of the heating. It would be erroneous, however, to infer therefrom a more easy digestibility of boiled or sterilized milk, or indeed to assert the opposite, as some have done. Within the stomach boiled milk is reconverted to the condition of an unboiled milk as regards its relation to rennet. Through the heating, the soluble lime-salts which are necessary for the action of the rennet, are rendered insoluble. But in the stomach, by the entrance of a small quantity of acid, or more probably of soluble lime-salts there secreted, the original proportion of soluble lime-salts is restored or even a little increased. Boiled milk will therefore often coagulate into a firmer curd within the stomach than the unboiled milk would out of it. In artificial experiments upon digestion without the stomach this regeneration of boiled milk must be taken into consideration, not to be led into such wrong conclusions as have already been drawn. Additions of mucilaginous fluids, as barley water, oatmeal decoction, or of arrowroot or other starches, calves'-foot broth, etc., have no other influence upon the curdling of milk by rennet than so much water. The conclusions of the favorable influence of such additions upon curdling were based upon experiments with acids, and not upon actual curdling experiments in the stomach of nurslings. As to the nutrient value of such decoctions, erroneous conclusions are easily drawn from their substantial appearance. As a rule, however, they are only about one per cent. mucilage of starch, a fluid very poor in nutriment. Such fluids may, nevertheless, be useful in many cases, although their hitherto considered cause may be erroneous.

The confounding of substantial appearance and nutrient value has played an important rôle in estimating the nutrient value of children's foods, which in spite of roasting and baking still contain starch but a little altered, and which, therefore, although boiled with much water, still form a thick mass. If one adds a little active malt-extract to such a food while warm, it is changed into a thin broth, which in spite of its thinner appearance is of increased nutrient value, for the starch paste has been changed into sugar. Such preparations have proved useful in that they have had to be freshly made and boiled for each meal. This indirect advantage, however, has now been more completely and with less trouble reached through sterilization.

The difference between cow and breast milk in regard to mineral constituents is principally that the former contains two to three times as much; that it has four times as much phosphoric acid, and six times as much lime as breast milk. It has also a notable excess of phosphate of lime over that needed for the growth of the bones. This is not used, but is thrown off in the fæces in the form of an excess of lime soap. In both kinds of milk the dissolved lime, which plays such an important part in the coagulation of milk, exists principally in the form of citrate of lime. Any increase of lime-salts in a milk is not only useless but harmful, in so far as it increases the firmness of the coagulation. Soda or potash alkaline salts act in the opposite way.

The most important difference between the two kinds of milk lies in their different amounts of nutrient substance, and the varying proportions of the single ingredients; for the effect produced by foods depends essentially upon the absolute quantity of the material supplied and upon the proportions they bear to each other. When there is so great a difference in both respects as between cow and breast milk a different nutrient action is to be expected. These grosser differences need removal before the lesser ones are attended to. According to J. Konig, upon the average of the analysis of 793 cow and of 107 breast milks, the following percentages were obtained:

	Water.	Album'ds.	Fat.	Sugar.	Ash.
Breast milk	87.41	2.29	3.78	6.21	0.31
Cow milk	87.17	3.55	3.69	4.88	0.71
Cow milk excess	..	1.26	..	..	0.40
Cow milk deficit	0.24	..	0.09	1.33	..

According to the analyses as given in Hammarsten's "Physiologische Chemie," breast milk contains upon the average 2.01 per cent. of albuminoids, 3.52 fat, 5.91 sugar. By diluting cow's milk with half its volume of a six-per-cent. solution of milk-sugar, a mixture is obtained which contains just as much albuminoids and sugar, but about 1.32 per cent. less fat than breast milk. It then becomes a question how to attain the normal fat percentage of breast milk. Biedert has recommended the use of cream in place of milk; while Soxhlet had in 1886 recommended the strippings of the milking to avoid a strongly infected cream. Both of these methods present great difficulties. Especially are means for estimating the percentage of fat wanting. In the mixed milk of normally-fed cows we possess a food of a constant and well-known composition. We know how much nutriment is furnished by such a milk; in the other cases we loose this advantage. Furthermore, an over-rich milk cannot be sterilized without the fat globules running together and breaking up the emulsion, which is so important in the absorption of the fat. Upon practical grounds, therefore, we must choose the less correct but safer rule of making up the deficient one-third fat by the addition of another substance as nearly equivalent to it as possible. The fat of food acts in the body as an economizer of albumin, it yields heat or energy and is assimulated as fat into the body. All these functions, the carbohydrate already present, the milk-sugar, can also accomplish, according to the experiments of Rubner 243 parts of milk-sugar are equal in dynamic energy to 100 parts of fat. The 1.32 per cent. of fat wanting in the milk mixture can therefore be supplied by 3.19 per cent. of milk-sugar.

By adding to cow's milk, therefore, half its volume of a 12.3 per cent. solution of milk-sugar, one would obtain a mixture containing the same amount of nutrient materials as breast-milk, with only the slight change of one-third of the fat being replaced by its equivalent in milk-sugar:

	[illegible]	[illegible]
Water	[illegible]	[illegible]
Albuminates	[illegible]	[illegible]
Fat	[illegible]	[illegible]
[illegible]		1.32
[illegible]		3.19
[illegible]	[illegible]	[illegible]
Sugar, natural deficit,		[illegible]
[illegible]		[illegible]
Ash	[illegible]	[illegible]

It still remains to be considered whether milk-sugar is really the only rational addition for the milk, or whether this may not be replaced by another, possibly a still better or at least a cheaper substance.

The milk of all animals contains no other carbohydrate than milk-sugar along with small quantities of similar substances. It is not in their blood, but is a product of the milk gland. Further than in the milk (and in cases of over-accumulation in the urine also) milk-sugar is found nowhere else either in the animal or vegetable kingdom. It is the only carbohydrate on which the young of all mammals are fed. This is so marked an indication of the best source from which material is to be obtained for making up the deficiency in cow's milk, that it would be useless and superfluous to seek for anything better. That starch is a most unsuitable substitute for milk-sugar there cannot longer be any doubt. As regards the soluble products of the conversion of starch, dextrin and the sugars, the former is chemically and physiologically much further removed from milk-sugar than either cane, grape-sugar or maltose.

Adults who live upon mixed food consume starch as their principal carbohydrate. It is changed by the digestive ferments mostly into maltose, and in a less degree into dextrin. Indirectly maltose is the principal nutriment of most adults. Since nurslings possess only in a very slight degree the ability of converting starch into sugar, one could relieve them of this labor, and convert the starch through a malt-extract into maltose and dextrin, thus furnishing them the normal carbohydrate of adults in a form ready for direct absorption. This has in fact been done in Liebig's broth which is a wheat-flour converted by malt-extract, and in similar preparations, which have served a good purpose as additions to cow's milk.

Nevertheless, there are still so important differences between milk-sugar and the other sugars that one can regard neither maltose, cane or grape sugar as a complete substitute for milk-sugar. It is not only in regard to the natural occurrence of milk-sugar and its characteristics, that it is peculiar, but also because of its very peculiar behavior in the organism, that milk-sugar occupies an exceptionable position in the sugar group. Attention has not hitherto been directed to this point, although milk-sugar has frequently been suggested as an addition to cow's milk. The imitation of nature, a procedure which in similar instances is certain not to fail and has not hitherto been sufficiently insisted upon, for milk-sugar has been comparatively little used in the practice of infant feeding, while the most unnatural additions, such as preparations of starch and other kinds of farinaceous food, have occupied the chief place. It will be useful, therefore, to particularize the most important chemical and physiological differences between milk-sugar and the other sugars, so as to establish the indispensability of milk-sugar for the purpose, and to show that the exclusive indication of this carbohydrate as a natural food for infants is a well-founded adaptation.

(1) Milk-sugar, with raffinose (which does not here come into consideration), is the only sugar, which, by heating with nitric acid, produces mucic acid. The other sugars produce saccharic acid.

(2) Cane, grape sugar and maltose are converted, by ordinary alcoholic ferment, into alcohol and carbonic acid; milk-sugar remains unaltered. Milk-sugar is in general, more resistant to fermentative changes.

(3) It is only one-third as sweet as cane sugar, so one can add three times as much before inducing an unpleasant sweetness. In proportion to its action as a sweetener, it has more the character of a food, so that it can be also put to other food purposes in so far as its strong laxative action does not hinder.

(4) According to the investigations of Lusk, Abbot and Otto, milk-sugar is not changed like grape, cane and fruit sugar or maltose into glykogen. Hence, Voit infers from its action with diabetics, that it is more easily oxidized in the organism than other sugars. According to Bischoff and others, it passes most readily into the urine, because, according to Voit, it is not converted directly into glykogen and thus removed from the circulation.

The following particulars, drawn from the investigation of P. Albertoni, first published within two years, are of special interest in regard to the exceptional position of milk-sugar to the organism.

(5) Maltose and cane sugar are the most quickly absorbed, milk-sugar the slowest; of the former, 70 to 80 per cent. within an hour, of the latter, 20 to 40 per cent., according to the concentration, are absorbed.

(6) The accumulation of the quickly absorbable sugars, cane, grape and maltose, in the blood, induces changes in the functions of the circulatory apparatus which lasts until the excess of sugar disappears. The blood pressure rises, the vessels expand, and the pulse beat increases. The circulation is so much increased that it is doubled. Milk-sugar also exerts a peculiar influence. It increases the blood pressure, but not the frequency of the pulse. It even reduces it, but the systole becomes more extended. The increase of the pressure depends upon the direct excitant action of the sugar upon the heart and its vessels, while the slowing of the pulse depends upon the specific action of the milk-sugar upon the heart. Albertoni regards the sugars, not only as foods and condiments in their usual sense, but also as specific excitants for regulating the circulation. It is from this point of view, not indifferent whether milk-sugar be replaced by other sugars, for on account of its slower absorption and easier oxidation, it does not so easily accumulate in the blood, and furthermore, its exciting action is different and peculiar.

(7) While other sugars are quite completely absorbed from the stomach, a large proportion of the milk-sugar consumed is always to be found in the small intestines. Some while after the taking of a milk-sugar solution the stomach and intestines together will always contain more fluid than was taken, and the small intestines will contain more mucus and bile than usual. This explains the laxative action of milk-sugar and it is used for this purpose. The laxative action which milk has upon many is to be ascribed to the sugar. Traube prescribes it in doses of nine to sixteen grammes to be taken before breakfast in half a litre of warm

milk. Albertoni commends it in doses of twenty grammes. This specific action of the sugar renders it a particularly valuable adjunct to cow's milk. The frequently solid consistency of the fæces of bottle-fed infants is certainly due to the small amount of milk-sugar in their food, and probably the indigestibility of cow's milk casein may be due to the same cause. It must, however, be remembered that the laxative action of milk-sugar depends not only upon the quantity, but also upon the concentration of the solution; and much diluted solutions, like much diluted cow's milk, will not have this action.

(8) Of especial interest are, finally, the recent investigations of Albertoni concerning the so-called chemotactic action of milk-sugar. W. Pfeiffer has shown that many organisms endowed with locomotion, as bacteria, flagellatæ, volvocineæ, fern spores, etc., are attracted or repelled through the exciting action of certain materials. If one fills a capillary tube, closed at one end, with a strongly attracting substance, such as a one-hundredth-per-cent. solution of peptone or of meat extract, and immerses it in water containing such organisms as have been named, they will hasten to its mouth and collect within the tube. White blood-corpuscles will act in like manner and swim into a capillary tube, which, filled with an attracting substance, is introduced under the skin. Professor Buchner has shown that bacterial protein, vegetable casein and albuminates are the strongest chemical excitants for leucocytes. In like manner Albertoni has investigated the exciting action of the various kinds of sugar upon the white blood-corpuscles, by inserting capillary tubes filled with a five-per-cent. solution of the sugar under the skin of animals, and after twenty-four hours staying, examining their contents. In kittens he found that with grape-sugar the white blood-corpuscles were excited, with cane-sugar they were but little, while with milk-sugar they were unusually excitable. Although Albertoni in giving his opinion as to the significance of the chemotactic action of the white blood-corpuscles suggests that such susceptibility to attraction facilitates the transport of digested and metamorphosed material to the anatomical elements of the tissues, just as the red corpuscles transport oxygen to them. It must also be remembered that, according to Pfeiffer's observation, this attractive influence does not always indicate natural adaptation, for poisons act as attractive materials, while other good nutritive material, as glycerine, exercises no excitant action. So much, however, is certain that milk-sugar exerts a very strong excitant action upon the leucocytes of the newly-born, while cane-sugar has no such action at all. So striking is this difference that it is scarcely possible to regard it as destitute of significance. In any case, this behavior of milk-sugar is calculated to mark very distinctly the physiological position which milk-sugar occupies among the sugars. Furthermore, Pfeiffer has already remarked the much stronger chemical exciting action of milk-sugar in that he has shown that a one-per-cent. solution of milk-sugar had as strong an attraction for bacterium termo as a ten-per-cent. solution of grape-sugar.

DR. ERNEST HART, on his return to England said: "It is idle and foolish for any British doctor who has time and the moderate means at command, to think of spending his autumn elsewhere than in America."

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

Regular meeting, Monday, April 10, 1893, the President, DR. C. F. FOLSOM, in the chair.

DR. H. C. ERNST read a paper on

PHAGOCYTOSIS,[1]

which was illustrated by lantern slides.

DR. R. H. FITZ: I hardly feel able to enter into a discussion of Dr. Ernst's paper. I have listened with great interest, and I think we all ought to congratulate him on the fairness with which he has stated the theory. I was somewhat interested when he said that the objections which were being raised to the theory emanated largely from Germany. I do not think that statement should pass without question. Certainly some of those working in behalf of the theory were Germans. When I was in Germany two years ago, several of the Germans with whom I talked in regard to the matter were very definitely of the opinion that there was a good deal in the theory, and that, practically, is, as I understand, the position at the present time. Certainly so far as it represents a theory it seems to give a very satisfactory explanation to a considerable number of facts that occur, and the illustrations Dr. Ernst has given us are striking instances of the relations between the cells and organisms. The phagocytic action is not necessarily applied to all bacteria, but there are certain bacteria which seem especially under the influence of this action. So far as protection is concerned, I remember as a student hearing the statement that there was no better protection to a wound than a pus poultice, and this phagocytic action of the cells as shown to us to-night seems to be an illustration in modern scientific method of what was then a popular belief.

A point which suggested itself to me in connection with Dr. Ernst's statement of the theory was, it might be that certain diseases were not so bad after all, at all events in certain directions. We are all inclined to look upon the disease leukæmia as a very serious affection. It distinctly is, but from the protective theory of phagocytic action it would seem the more white corpuscles a person had in him the better he would be able to resist certain bacterial influences and it is possible that investigations in this direction may show that the leukæmic individual is much less likely to suffer from certain diseases than one who has fewer white corpuscles.

DR. H. JACKSON: We have all been much interested in hearing this explanation of the Metschnikoff theory, and as Dr. Ernst says, an immense amount of work has been done, perhaps notably by the Germans, manifestly opposing the theory as promulgated by Metschnikoff. Of course, the German school who find in the blood-serum some anti-bacterial agent, do not consider phagocytosis as an important element in the destruction of bacteria. The earliest work was, I think, a paper by Nuttall, who repeated Metschnikoff's experiments with the frog, and drew the conclusion, from a very long series of experiments, that there was something in the blood-serum and other fluids of the body which possessed anti-bacterial properties other than was present or could be explained by phagocytes. Late experiments have extracted from blood-serum and from other fluids of the body a chemical product, not yet a pure chemical product, but a product obtained from blood-serum by precipitation, which apparently possesses the properties of the blood-serum. As Dr. Ernst says, a large amount of negative evidence is of no great value, and as Metschnikoff says that we cannot deny the existence of a process because we have never seen it, so we may draw arguments against the theory of Metschnikoff from the few positive pathological phenomena which are observed, namely, the relation of bacteria to the cells in certain well-known diseases. In diphtheria, for instance, when it has been produced by inoculation in guinea pigs, there is found a serous, jelly-like exudation at the point of the inoculation. There are found a large number of the bacilli of diphtheria in the leucocytes, but the leucocytes are, as far as we can judge from pathological study, dead and not living. Their cell protoplasm is broken up. The nuclei are not stained with clearness as in living fresh cells, so that it seems that we must draw the conclusion that the bacilli are destroying the cells rather than that the cells are destroying the bacilli. The commonest instance which comes under the observation of all who work at all in bacteriology, is the relation of the organism of gonorrhœa to the cells. In this disease the micro-organisms are found essentially in the cells. In examining a specimen you find a very large number of cases where there is only left a very slight outline of what was apparently a cell. Such an outline may be traced by staining reagents. Again, masses of the gonococci are found in such relation to one another that it appears most probable that they represent a small area which was originally a cell, that the cell has disappeared, and on the other hand the micro-organisms themselves, so far from showing any evidence of degeneration, are apparently in their most active growth.

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[1] See page [illegible] of the Journal.

As to the conclusions which we can draw from the diagrams which have been thrown upon the board, in a certain number of the pictures shown by Dr. Ernst, the bacteria were rather pale, and in some instances broken up as if they had been destroyed by the cell. In many pictures we could trace the nuclei perhaps on the edge of the cell, but at least a third, and in many instances two-thirds of the outline of the cell had disappeared. These were not micro-photographs, but taken from camera lucida drawings, that is, the observer could trace only the bits of nuclei, a large number of bacteria in close relation to the nuclei and a portion of a formerly whole cell membrane. In one of the diagrams which Dr. Ernst threw upon the board was a macrophagocyte taken from the eye of a pigeon, in which the microphagocyte was represented by a small round body and protruding through it was a long thread-like body, showing that the bacillus in the cell was not dead, but had multiplied until a long thread of bacilli was formed. In that instance the macrophagocyte had not destroyed the bacillus. Also one of the pictures represented what Dr. Ernst said was a dead macrophagocyte being carried about by the bacilli. In that instance the macrophagocyte had been overpowered by the bacilli, and not the bacilli by the macrophagocyte.

Dr. A. K. Stone: I think we have all got a very clear idea of the subject that has been presented to us to-night, and that Dr. Ernst has given us very faithfully and carefully the theory of Metschnikoff. It is perhaps well to think that the work of Metschnikoff as it started out is the one which has brought about all the work that has since been done in the blood-serum therapy. The work in regard to blood-serum was undertaken by the men who followed up the work done on the theory propounded by Metschnikoff, and I should take exception to what Dr. Ernst said that it was confined to the German school. Certainly there are extremely good men in France and Italy, and also even in Japan, who are contributing work in this other line, so that I do not think it is fair to say that it is simply the German school that is opposing it, and much of this work is accepted, especially the Italian work, and is quoted by Metschnikoff himself in his book on inflammation, as being work that he accepts and considers as faithful work, in which he could not find any flaw. Almost all the Germans, even those who strongly opposed his theory, state very decidedly that there is a certain amount to the theory and that the phagocytes do play a limited rôle protecting against and taking up the bacteria, but consider that it is of minor importance. There are some arguments showing that only a small part is played by the phagocytes. One is that injection of ptomaines into an animal where there were absolutely no bacteria present, only the toxic products that have been made during their growth, is able to kill the animal without any active phagocytosis. Another fact is that bacteria may be present in great numbers and produce most unfavorable results without bringing about phagocytosis, so that neither chemically nor mechanically is it necessary that the phagocyte be present. Then from analogy we know that all the processes of the body that go for its nourishment and for the removal of waste material from the body for cleansing it, are the result of most complicated chemical reactions, and this would hint that the probability is that the inflammatory process is primarily way down at bottom a chemical process rather than the simple action of the cells themselves.

Dr. Ernst: The remark I made about the German school seems to have been misunderstood. I did not mean to say they were the only ones that opposed the theory. Dr. Jackson quotes gonorrhœa and the appearances upon certain slides as indicating that certain of the bacteria do overcome the phagocytes; a condition of things that of course has nothing whatever to do with phagocytosis, because it would be absurd to suppose that any class of phagocytes could invariably and always overcome the bacteria.

ANATOMICAL SPECIMENS.

Dr. Walton: This is a cerebral tumor from a patient of Dr. Hooker, of Springfield, who called me in consultation February 22, 1892. The patient had had intense headache, vomiting and recurring aphasia, with paralysis of the sixth nerve on the left. When I saw him he had some aphasia, word-blindness, and word deafness at times. He also had loss of vision on one side of both eyes (hemianopsia). This gives us a very good opportunity to study the localization of tumors outside the motor tract. This did not involve the motor tract either directly or indirectly. The mind-blindness pointed to disturbance in the angular gyrus. Word-deafness would show lesion in the posterior part of the first temporal lobe. Aphasia would show some disturbance either in the island of Reil or at the lower end of the ascending frontal convolution. Paralysis of the sixth nerve would point to disturbance at the base of the brain, but as there was no other basal paralysis, we concluded that the sixth was affected by general pressure. As the aphasia was transitory, it seemed that it would hardly do to locate the tumor at the centre of speech, especially in the absence of facial paralysis. We did have one fixed and continuous symptom, namely, loss of vision affecting the left half of the retina. This might tend to show pressure on the optic tract somewhere, but might also show a lesion of the occipital region or of the fibres passing from the occipital region. What made us think it was near the cortex in this region was the fact that the patient often saw red spots. We concluded that the angular gyrus was affected directly, perhaps also the occipital lobe. Large doses of iodide were first used, with no effect. Five weeks later Dr. Richardson operated. We found the tumor was too deep and large for removal. It is a more or less lobulated mass starting deep down, probably from the fovea centralis. Its seat was practically where we located it. It had pressed the tissues forward so that the fissure of Sylvius is quite vertical instead of horizontal. The posterior part of the temporal region was affected, also the angular gyrus. The occipital region is separated from the temporal by the tumor, which extends nearly to the mesial surface of the brain, cutting off the fibres radiating to the occipital lobe. The patient lived two months, with temporary relief of pressure symptoms including the sixth nerve paralysis.

Dr. Richardson: There was nothing unusual in the operation. When the bone had been removed no pulsation could be detected. The dura mater was freely incised and turned back. The brain in appearance was not normal, but there was no evidence of the distinctly outlined tumor that can be seen now. With rongeur forceps I extended the cut in the skull, and enlarged the opening in the dura mater. The brain was slightly discolored, differing but little from the normal. The brain substance at this point was soft. I explored it some distance with the knife, but no well defined tumor could be found. The tumor, as you see it now, did not show at any time. The process of hardening has brought it out. I took away a small portion of the cortex, in which Dr. Whitney found nothing special at the time. More careful examination of the hardened specimen showed that it was blended with the rest of the brain and that it would have been impossible to distinguish, isolate or remove it. I recall one or two cases of extensive hernia cerebri accompanied by sloughing of a considerable portion of the cortex, and death. Nothing could have prevented it. The operation in this case, I think, was justifiable, though the prognosis was not encouraging on account of the extensive nature and situation of the lesion. If the growth had been a fibroma or any well-encapsulated tumor of a consistence distinctly perceptible, I think I should have attempted to remove it. Giving up the operation at the time I did was conservative, and certainly wise in the light of the subsequent history.

During the past season there were twenty-six fatal accidents in foot-ball matches in England.

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MEDICAL EXHIBITS AT THE WORLD'S FAIR.

Among the acres of exhibits at Chicago a casual visitor might easily get the impression that medicine had been neglected. But if everything connected with the profession of medicine were in one place, there would be more than most physicians would care to examine. Most medical men who visit the fair are on a vacation, and do not expect to do more than glance at medical exhibits. The ones which require time to study are often deserted or are being examined by non-medical visitors who are tired of walking through miles of buildings, and who hope to find some exciting pictures or specimens. A physician could well spend several days among the material which is connected with medicine. The collections are scattered, and many of them in out-of-the-way places; but, as a rule, they are carefully arranged, and represent a large amount of work and study.

The Marine-Hospital Service has an exhibit in the Government Building, which is well arranged and contains among other things connected with the service, a bacteriological laboratory in working order. The Medical Department of the United States Army have a small model hospital building between the Government and the Liberal Arts Building. Here there is a drug-room, a hospital bed, a collection from the Army Museum; and on the second floor a clinical laboratory. This building, on account of its position, is generally crowded.

In the gallery of the Liberal Arts Building will be found the exhibits connected with medical education. The most complete of this series is that of the German universities, to which entrance may be obtained by application. The medical departments of Harvard, Michigan, Pennsylvania and Columbia are on the south end of the gallery in the exhibits of the different universities. In the north and long west galleries are many collections of instruments, surgical, optical and psychological; and many more of these being the exhibits of individual firms, are scattered among the sections or buildings of different countries, and are not well arranged for inspection.

Many exhibits which were originally intended to be in the Liberal Arts Building, and which should have been near the others, are in the Anthropological Building, at the extreme southeast corner of the grounds. This building contains a heterogeneous mass of material, which has not yet been entirely arranged. It is out of the way of most visitors, and consequently does not receive the attention which it deserves. In the southern part of the floor the departments of Sanitation and Hygiene, and of Charities and Corrections are situated. Comparatively few States have contributed anything to these collections; and those which have, have done so in different ways, so that the interest lies in the individual exhibits, and not in comparisons. The State of Massachusetts contributes a large fraction of the whole exhibit. Especially to be noticed is the exhibit of the Massachusetts State Board of Health, a more detailed description of which will be published in an early issue. The number of hospitals represented is very small; the Boston City Hospital and the Johns Hopkins Hospital have carefully-prepared and interesting exhibits. Several insane hospitals, penal and charitable institutions are shown by models or diagrams, and by collections of articles manufactured in them. For a student of public institutions many charts, books and pamphlets are obtainable by application.

A visitor is surprised at the frequency with which the ambulance service of the grounds is used. This service is well organized, and is connected with a system of hospital sub-stations, the headquarters and hospital of which are in the Service Building, just north of the Transportation Building. The thorough equipment of this hospital was shown during the recent fire in the Cold-Storage Building, when a large number of accidents brought in together caused no confusion, and found no lack of medical assistance or nursing.

Exhibitions connected with hospital management and nursing and the preparation of drugs are also found scattered through the State Buildings, the Woman's Building, and in special small buildings. Among these is the Children's Building, in which is a gymnasium and a repository for infants, both in active operation. It is reported that several children, left until called for, have not been claimed, and that the fair has a large stock of these deserted young ones on its hands.

For the student of anatomy, or of art, the fair offers wonderful opportunities for the study of the female form. Statues everywhere and paintings, embroidery and decorative work of all kinds represent the female breast in every variety of size, shape, and material. The male figure is not neglected, and the only object which appears to be prohibited is the classical fig-leaf.

By a wise rule, exhibitions and advertisements of quack medicines have been almost entirely excluded, so that it takes one by surprise to find the advertisement of a sure cure for piles unroll itself on the toilet-paper in the closets. This is one of very few such nuisances; and the dignity of the fair is much increased by the prohibition.

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THE THERAPEUTIC VALUE OF ALCOHOL IN PNEUMONIA.

At the Société de Thérapeutique, session of May 24, 1893, the subject of the therapeutic value of alcohol in pneumonia was again discussed. While the necessity of alcohol in the asthenic forms was admitted by all, the general sentiment of the authorities present was in favor of giving alcohol, as such, in its purity, sufficiently diluted. The old notion that old wines, whiskeys, etc., were to be preferred because of the "mellowing" properties conferred by age was condemned as a delusion. Such liquors were declared to be much more irritant to the stomach and less certain in their general supporting effects than pure ethyl alcohol, deprived of aroma.

One eminent speaker commended the alcohol of rice, as being exceptionally free from fusel oil and other impurities.

We are told that the best French cognac is, "with few exceptions," "nothing but the alcohol of beets, of poor molasses, changed and colored by the fabricator by the addition of infusion of tea and various essences which give it bouquet." Such brandies are almost certain to contain methyl alcohol in quantity — certain, when freely administered, to do harm to the patient.

M. Huchard, who is an enthusiastic advocate of the employment of digitalis in the pneumonia of influenza, thinks alcohol the remedy *par excellence* of pneumonia by reason of its "dynamogenous action." There was much speculation as to how alcohol does good. M. Bovet declared somewhat vaguely that "by its dynamogenous action it supports the patient: by its reducing action, it modifies the elements of the blood, which rendered more fluid, undergoes an osmotic acceleration which expresses itself by the progressive decongestion of the pulmonary parenchyma." He also thought that "by its calorigenous reaction, it develops a considerable number of calories which cannot but have an influence on the evolution of the infectious elements, by this fact, impeded in their toxic action, and possibly destroyed, "What tends to prove this," he says, "is that after the absorption of the alcohol, we find in the extractive matters of pneumonia patients an abnormal proportion of waste matters of the creatinic series, which are known to be endowed with a remarkable toxicity."

But apart from such speculations, the best proof of the value of alcohol in pneumonia was affirmed to be clinical experience.

The combination of pure ethyl alcohol with digitalis constitutes, in the estimation of Huchard, the ideal treatment of pneumonia, when any active treatment is needed. He gives the digitalis in the form of its active principle, the crystallized digitalin, in the daily dose of one millegram by mouth.

It is a little singular that no allusion was made at this meeting to the therapeutic efficacy of strychnia in acute croupous pneumonia, a drug which is coming more and more into favor generally as a cardiac tonic in this disease.

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MEDICAL NOTES.

The Pettenkofer Festival. — The fiftieth anniversary of Pettenkofer's doctorate was celebrated in Munich, July 1st. The official festival began at eleven o'clock in the morning in the great hall of the "Rathhaus," which was decorated for the occasion. Pettenkofer was first invested with the insignia of the orders bestowed by the Emperor, the Prince-regent of Bavaria and the King of Servia. A renewed medical diploma was given him by the Munich Medical Faculty, after which a congratulatory address was read from the Imperial Sanitary Commission. The greatest honor now followed in the bestowal by the Burgomasters of the "Gold Bürgers medal." This is the first time that this honor has been given to a person already holding an honorary citizenship, as Pettenkofer does. After this came a long list of addresses from the various schools of Munich, from the universities of Berlin, Erlangen, Freiburg, Göttingen, Halle-Wittenberg, Leipzig, Prague, Vienna and Würzburg; from the medical schools of Amsterdam, Basel, Breslau, Edinburg, Giessen, Graz, Greifswalde, Heidelberg, Kasan, Kiew, Marburg, Rostak, Strassburg, St. Petersburg. Deputations from all the scientific societies were then introduced, who offered congratulatory addresses or honorary membership. At the close of these speeches Pettenkofer's present pupils presented him with a memorial volume or *Fest-band.* In the evening a banquet was served in the hall, which was filled to overflowing; the rejoicing and speaking lasted till midnight.

Official Delegates to the Pan-American Medical Congress. — In response to the invitation of the President of the United States, nearly all of the foreign governments have appointed official delegates to the Pan-American Medical Congress. The larger cities of the Latin-American countries have appointed delegates to the sections on Hygiene, Climatology and Demography, and on Marine Hygiene and Quarantine. The United States Government will be represented by six delegates, and the governors of several States have so far named seventy-six delegates.

A Bequest to a Philadelphia Hospital. — The German Hospital of Philadelphia receives a gift of one hundred thousand dollars by the will of the late A. J. Drexel.

Australian Hospitals and the Financial Crisis. — A late and serious effect of the financial distress in Australia is just coming to notice. A correspondent writes to the *British Medical Journal* that the hospitals are in very straitened circumstances since they are largely dependent upon private contributions for their support. The Government grant, which for years has been very inadequate, is in danger of being reduced still more. Some of the hospitals have been obliged to reduce the number of patients admitted, in face of the fact that owing to non-employment more persons than usual are looking to the hospitals for medical care.

Dermoid Cyst of the Lung. — A case is reported from Vienna, of a dermoid cyst of the lung. The tumor had its origin in the mediastinum, and after involving the lung ruptured into one of the bronchi, the hairs being coughed up in the expectoration.

NEW YORK.

The Croton Water-Supply. — It seems that the health authorities were rather unfortunate in proclaiming the unusual purity of the Croton Water-Supply. Within the past two weeks the water has become decidedly offensive both in odor and taste, and the latest analyses show an uncomfortably large proportion of albuminoid ammonia, as well as a slight increase in nitrates. In view of the many complaints made, Chief Engineer Birdsall, in compliance with a request from the Commissioner of Public Works, made a report, dated July 12th, in which he says: "During the month of May the long-continued freshets in the Croton water-shed thoroughly impregnated all the water in the streams, reservoirs and distributing mains with suspended matter. The usual remedy of blowing out the water-mains was in course of application, when the dry and warm weather of the latter part of June so increased the temperature in the streets and reservoirs that nature began the usual process of purification by fermentation. This process of natural fermentation usually occupies a period of six weeks, and while it is in progress it gives a muddy appearance and bad taste and odor to the water. Since June 14th it has become necessary to draw 120,000,000 gallons of water *per diem* from the storage reservoir to supply the 163,000,000 gallons daily distributed and used in the city. The stored water always has a musty taste and odor, but its passage through the streams, reservoirs and aqueducts generally purifies and deodorizes the water. At the present time, however, the water running in the streams is undergoing a purifying process, and this, combined with the use of stored water, increases the bad taste and odor. . . . A very heavy and continued rainfall in the Croton basin would remove all of the offensive taste and odor in a week, but as there is no prospect of such rainfall, the improvement in the quality of the water will only be gradual from now on, and the rate of that improvement will also depend upon the conditions of temperature and weather."

New York Board of Health. — At a meeting of the Board of Health held July 19th, a report was read from Dr. H. H. Doty, Chief Inspector for Contagious Diseases in which he states that he is convinced that a large number of down-town lodging-houses are infected with the germs of typhus fever, and that a large percentage of the patients who have recently been removed to Riverside Hospital on North Brother Island have contracted the disease in these infected lodging-houses; moreover, that this condition of affairs is the result of an accumulation of the poison, covering a long period of time. The comparatively few cases occurring at present as the result of this infection, he thinks, is due to the increased amount of fresh air which is admitted to the premises during the warm weather and the fact that at this season there are comparatively few lodgers, particularly permanent ones. He therefore recommends, as a means of eliminating this source of contagion that all lodging-houses in the city which appear on the list of typhus lodging-houses on record in the bureau of contagious diseases be properly disinfected by their proprietors, under the supervision of inspectors detailed from the Division of Disinfection and Fumigation. At the conclusion of the reading of the report the Board ordered that the disinfection recommended should be made. At the same meeting President Wilson reported that the results which Health Commissioner Edson had met with in some recent experiments with the Wolf electrical system for the purification of water had been very successful, and that it was probable that the department of public works would have a purifying plant put up, the cost of which would not be more than $5,000.

Immigration Supervision. — In view of the possible advent of cholera the United States Marine-Hospital Service has prepared a system of medical supervision of immigrants until they arrive at their proposed destinations. On each immigrant train that leaves the city there will be a medical representative of the Marine-Hospital Service whose duty it will be to report to Dr. Bellbache, of the Ellis Island immigrant depot, any cases of sickness occurring during the journey. In the event of cholera developing in transit, the patient will be isolated, and the train quarantined.

Pasteur Institute. — Dr. Gibier reports that during the year ending July 1st there have been 104 persons under treatment at the Pasteur Institute, of which he is director, and that among these no death has occurred. Forty of the cases were from New Jersey, a much larger percentage than any other State. The cases are divided into three classes. The first combines those patients who were bitten by animals in which the existence of rabies was proved by means of experiment or by the death of some other person or animal bitten by them. The second is made up of those who had been bitten by animals recognized as rabid by clinical examination, and the third, of those in which the presence of rabies in the animals by which they were bitten could only be suspected, as the animals had disappeared or had been instantly killed, and their bodies thrown away. The first division included forty-seven cases. In commenting on the extraordinarily large number of cases in New Jersey Dr. Gibier states that this is probably due to the fact that there are a great many kennels in that State. He believes, however, that reports of the prevalence of hydrophobia in any particular district are generally more or less exaggerated, and that one reason for this is that it is not an easy matter for the average man to discriminate between rabies and the numerous forms of epilepsy.

Fracture of the Cervical Spine. — There is at present in the Harlem Hospital a young man, twenty-two years of age, who is living with a broken neck and whose prospects for continuing to live are excellent. He was struck by the arm of a windlass, the blow rendering him insensible for a time, and an examination proved that there was a fracture of the fifth cervical vertebræ. Just now the head is supported by a plaster-of-Paris dressing, but before leaving the hospital he will be provided with a permanent apparatus for the purpose.

An Unusual Case of Triplets. — The newspapers report a case of triplets in Nyack on the Hudson which seems to be one of the most remarkable on record. There were two males and one female, and their aggregate weight was fifteen pounds. The two boys were bound together by a band almost precisely like that in the case of the Siamese twins, while the girl was joined to one of the boys by a band passing from the hip of the one to the hip of the other. The children survived for seven hours after birth. When the death of the girl and one boy had occurred an effort was made to save the life of the third child by cutting the ligature binding him to his brother, but it proved ineffectual.

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Miscellany.

THE BACTERIOLOGY OF HUMAN MILK.

Since Escherich's report in 1885, it has been believed very generally that the milk of a healthy woman was sterile. His experiments went to prove that only in cases of puerperal fever, did a woman's milk contain bacteria. This view is refuted by Ringel,[1] who has recently concluded a series of experiments which give quite opposite results. He shows that many of Escherich's figures argue against that writer's own theory, as do the later experiments of Cohn and Neumann and Palleske.

Ringel's experiments were carried on in the most guarded manner, and all possible sources of error carefully avoided. The breast and nipple were most thoroughly cleansed with alcohol, 1 to 1000 corrosive solution and ether. Any milk which might have been left in the tubes from a previous milking was drawn off, and the nipple again cleansed. The milk was then drawn into sterile vessels and subjected for twenty minutes to a temperature of 160°.

From 0.25 to 0.5 cubic centimetres of this milk was then spread on nutrient gelatin, and a few drops added to some bouillon and agar.

Milk was taken in this manner from twelve healthy women and from thirteen ill with puerperal fever.

The results were as follows: In three cases the milk was found sterile; in seventeen there was found the staphylococcus pyogenes albus; in two the staphylococcus pyogenes aureus; once both forms; and in two cases the staphylococcus pyogenes albus and the streptococcus pyogenes. The staphylococci were found, without the streptococci, in eleven healthy and in nine of the febrile cases. The streptococci were found in two cases, one of mild puerperal sepsis and one of phlebitis.

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[1] [illegible]

The question of entrance seemed to be answered best by the assumption that the cocci entered from without during pregnancy, and finding a favorable nutrition, developed in excess of the other bacteria which might be supposed to have entered from the air with them.

His conclusions — that "in human milk there are almost always present staphylococci, usually the staphylococcus albus, rarely the aureus; that these have their entrance from without, and produce no particular pathological symptoms in the breast; that besides these forms, streptococci may rarely be found in cases of puerperal fever" — have been to a great extent borne out by Honigmann, in an independent series of experiments.

◆

THE HABITUAL USE OF OPIUM.

In view of the increasing prevalence of the opium habit in this country, the experience of physicians in India and China is worthy of some attention. The reports recently made to the *Asiatic Quarterly Review* and the *Times of India* are singularly alike in their conclusions.

The smoking of opium is almost universal; and in the observation of over a thousand patients in Johore, Dr. Nightingale found an exceedingly small number who could in any way be considered harmed by the use of the drug. The mild stimulation of smoking was rarely carried to an excess; and when so done, had not the bellicose effects of alcohol. Dr. Lisboa's conclusions were the same: that the habit was much to be preferred to an alcoholic one; that the craving did not grow, nor was the amount used increased as in the case of spirits.

Such, certainly, is not the experience of observers in this country; and it is an interesting question whether the difference is due to the use of the various preparations of the drug in concentrated form, or to a more highly organized nervous system in the Aryan races.

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DISLOCATION OF THE SHOULDER.

Thomas publishes[1] an analysis of thirty cases of dislocated shoulder treated chiefly by means of Kocher's method of manipulation. Twenty-four cases were easily reduced on the first manipulation on the day of the accident. The time occupied varied from fifteen seconds to six minutes; and the reduction was as successful in muscular subjects as in non-muscular patients. Any difficulty in the quick reduction was usually due to a want of steady longitudinal traction or to an irregular tear in the capsule.

The six cases which were unsuccessful at first are especially interesting. No. 1 was of eight weeks' standing; various methods under chloroform narcosis failed, and the patient was discharged with a useful, movable false joint. Nos. 2 and 3 were recent dislocations in spare, non-muscular men; manipulation repeatedly failed, and the heel method was at once successful. In No. 4, manipulation, heel method and circumduction failed; under chloroform narcosis reduction by manipulation was effected in thirty seconds. In No. 5, after the patient was anæsthetized, manipulation again failed, but the heel method was successful. In No. 6, repeated manipulation failed; traction with the patient's arm round the operator's waist was successful.

Several cases were reduced in the first stage, that of outward rotation; the majority, however, yielded in the second movement, of the arm inwards to the chest, while rotation is maintained.

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AN OPERATION FOR CLEFT PALATE.

Mr. Lane, of Guy's Hospital, has operated upon a case of cleft palate, in which the usual method of closure was impossible, by an ingenious device for obtaining the flaps. The upper lip, the hard and soft palates, were cleft from before backwards. On one side the palate united obliquely with the lower end of the vomer; on the other the alveolus was directly continuous with the inferior nasal meatus.

According to the *Medical Press*, Mr. Lane's procedure was as follows: He removed the mucous membrane from the margin of the hard palate on the one side, and on the other he stripped the mucous membrane from the inferior turbinated bone and from the inferior meatus, and so formed a good-sized flap of mucous tissue and periosteum whose base was continuous with the mucous membrane lining the inner aspect of the alveolus which formed one boundary of the cleft. This flap was then made to cover in the cleft, being connected by a continuous suture with the opposing freshened edge. No attempt was made to close the cleft in the soft palate: it being thought best to wait the development of the hard palate, as the child was only two years old.

◆

INDIGESTION SIMULATING CEREBRAL LESIONS.

Cortial reports[1] two cases of acute indigestion which clinically had the appearance of cerebral hæmorrhage.

The first case was that of an ordnance officer, twenty-three years old, of good history and habits. He fell unconscious in the street; and when seen an hour later was insensible, with the eyes rolled up, pupils contracted, a full, regular, fairly rapid pulse and moderate rise of temperature. The extremities were in constant motion, as was the head; but there were no convulsions of an eclamptic nature, nor any discoverable paralysis. The hands were carried to the head as if in pain. Alcoholic intoxication and insolation were excluded by the history; and the diagnosis rested between cerebral hæmorrhage (rare at this age) and indigestion. The stomach was somewhat distended, and pressure over the epigastrium called forth signs of pain from the patient, though still unconscious. On this a diagnosis of indigestion was made, and the patient treated accordingly. The bowels were moved, and emesis followed in about two hours, continuing until noon the next day, when the man slowly recovered consciousness, and the case followed the usual course of an acute gastritis.

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[1] British Medical Journal, July 8, 1893.

[1] Archives de Med. Militaires, 1893, No. 7.

The second patient, a man twenty-six years old, of good history but for occasional attacks of migraine, was heard to groan in the night, and was found unconscious, with deep stertorous respiration, contracted pupils, and constant movement of the extremities, especially on the left side. As in the previous case, pressure over the stomach caused pain, and greatly increased the movement of the limbs. Similar treatment was instituted; and after copious emesis of undigested food, the patient recovered consciousness, and in a few days was discharged well.

Such attacks, common enough in young children, are not often seen in adults. An important diagnostic point is the tenderness to epigastric pressure. Cortial is in favor of venesection in such cases, having bled both of the patients just reported. That and emptying the stomach is usually sufficient.

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THERAPEUTIC NOTES.

Phosphorus in Osteomalacia.[1] — Sternberg reports four cases of osteomalacia treated with phosphorus; three of which were cured and one greatly relieved. The first was a woman who had been for nearly a year confined to bed owing to pelvic involvement in the disease, was so far cured that during a subsequent pregnancy she was able to go about her work. When confined, there was such firm union of the affected pelvis that a Cæsarean section was necessary, from which she unfortunately died. Two other cases of puerperal osteomalacia made rapid and marked improvement. A case of senile softening in a woman sixty-nine years old, which had gone on to affection of the ribs and kyphosis, made a complete recovery. The phosphorus is given in the following formula:

℞ Phosphori . . . . 0.05 gm.
Ol. [illegible] . . . . 50.00 gms. M.
[illegible]

In all his cases Sternberg found that the drug was well borne, and he attributes the negative results of other writers to their having given too small doses.

Creolin in Summer Diarrhœa of Children. — In the antiseptic treatment of cholera infantum and summer diarrhœa, Norin reports successful use of rectal injections of warm creolin solutions. He lays the child on its abdomen and flushes the bowel with an alkaline solution, and then injects a solution of creolin of the strength of one-half to one drachm to the pint of boiled water. This is repeated several times in the twenty-four hours, if necessary; but in most cases the vomiting stops, and the diarrhœa is much lessened.[2]

Administration of Calomel. — [illegible][3] [illegible] the administration of calomel in small, frequently-repeated doses (gr. one-tenth to one-sixth every fifteen to thirty minutes) in cases of obstinate vomiting due to gastric irritation. Under this administration two grains have frequently proved enough to allay the vomiting and pain and to do away with the fetor of breath in a very short time. In cases of cardiac dropsy, also, he finds frequent small doses better than single large ones.

Salol in Tuberculosis. — Grossi recommends the use of salol in early phthisis in the following manner:

℞ Ol. amygdal. dulc. steril. [illegible] . . [illegible]
Salol . . . . [illegible] M.

Of this solution five cubic centimetres are given subcutaneously, at first once a day, gradually increased to two or three times each day. He finds that under this treatment the sweating and cough are much diminished, and a gain is made in the general strength of the patient. There is some local induration around the seat of puncture.

Facial Erysipelas. — Petrini's treatment of facial erysipelas which, he claims, does away with the need of isolation, consists in painting the affected area with a solution of corrosive sublimate in collodion, one grain to the ounce. After a free purge by calomel and scammony, the patient is given the following:

℞ Quininæ sulphat. . . . . [illegible]
Iodoform. . . . . gr. [illegible]
Syr. tolutani }
Ext. gentian. } . . . . q. s.
M. et div. in pil. No. xx.
Sig. Two pills every two hours.

RECORD OF MORTALITY

For the Week ending Saturday, July 15, 1893

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consumption.	Diarrhœal diseases.	Whooping-cough.	Diphtheria and croup.
				Percentage of deaths from				
New York . .	1,891,306	1096	681	36.90	7.20	[illegible]	.90	3.23
Chicago . . .	[illegible]							
Philadelphia .	[illegible]	632	[illegible]	34.56	8.16	28.60	1.44	3.24
Brooklyn . .	[illegible]	583	374	[illegible]	[illegible]	[illegible]	1.19	[illegible]
St. Louis . . .	[illegible]			—				
Boston . . .	[illegible]	[illegible]	[illegible]	13.77	14.28	7.65	.51	[illegible]
Baltimore . .	[illegible]		—			—	—	
Washington .	308,431	137	75	[illegible]	10.95	29.20	2.19	
Cincinnati . .	[illegible]	143	66	21.00	14.70	18.20	—	[illegible]
Cleveland . .	290,000	[illegible]	55	31.31	9.09	26.26		3.03
Pittsburg . .	[illegible]	[illegible]	104	[illegible]	[illegible]	38.43	3.78	[illegible]
Milwaukee . .	250,000	[illegible]	34	[illegible]	6.30	[illegible]		[illegible]
Nashville . .	[illegible]	[illegible]	13	20.70	13.80	6.90	[illegible]	3.45
Charleston . .	65,165							—
Portland . . .	[illegible]	[illegible]	[illegible]	10.00	—	—	—	
Worcester . .	[illegible]	33	19	[illegible]	3.03	21.21		3.03
Fall River . .	[illegible]	50	35	54.00	6.00	54.00	—	—
Lowell . . .	87,191	[illegible]	[illegible]	[illegible]	[illegible]	42.84	—	—
Cambridge . .	77,100	25	[illegible]	36.00	8.00	24.00	[illegible]	4.00
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	8.33	8.33	—	—
Springfield . .	48,684	17	[illegible]	23.52	23.52	11.76	—	—
Lawrence . .	48,355			—		—	—	—
New Bedford .	[illegible]	26	17	42.35	7.70	30.80	[illegible]	—
Holyoke . . .	41,278							—
Salem	32,233	[illegible]	7	26.66	6.66	13.33	[illegible]	6.66
Brockton . .	32,140			—		—	—	—
Haverhill . .	31,396	3	[illegible]		33.33	—	—	—
Chelsea . . .	30,264	7	[illegible]	14.28	[illegible]	—		—
[illegible] . . .	[illegible]	[illegible]		—	[illegible]			—
Newton . . .	27,556					—		—
Fitchburg . .	[illegible]		[illegible]	20.00	20.00	20.00	—	—
Taunton . . .	26,972	[illegible]	1	—	11.11	—	—	—
Gloucester . .	26,688	7	3		—	—	—	—
Waltham . .	22,058	[illegible]		40.00	—	20.00	—	[illegible]
Quincy . . .	[illegible]	[illegible]	2	[illegible]	—	14.28	—	—
Pittsfield . .	18,802	3	1			—	—	—
Everett . . .	[illegible]	3	[illegible]	33.33	33.33		—	
Northampton .	16,331	[illegible]	[illegible]	25.00				
Newburyport .	14,073	3	1	—				
[illegible] . . .	10,920							

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 1,211, [illegible] typhoid fever [illegible], scarlet fever 2[illegible], [illegible], malarial fever 11, erysipelas 4.

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[1] [illegible]

[2] [illegible]

[3] [illegible]

From typhoid fever Philadelphia 8, Pittsburgh 7, New York and Brooklyn 5 each, Washington 4, Cincinnati 3, Boston 2, Cleveland, New Bedford and Northampton 1 each. From scarlet fever New York and Pittsburgh 7 each, Philadelphia 5, Milwaukee 4, Boston 2, Brooklyn, Cambridge, Springfield and New Bedford 1 each. From measles Pittsburgh 9, New York 6, Philadelphia 2, Brooklyn, Washington, Cleveland, Portland, Worcester and Springfield 1 each. From cerebro-spinal meningitis New York 7, Brooklyn and Washington 2 each, Philadelphia, Worcester, Chelsea and Quincy 1 each. From malarial fever New York 5, Brooklyn 4, Philadelphia and Cleveland 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending July 8th, the death-rate was 23.8. Deaths reported 4,702; acute diseases of the respiratory organs (London) 235, diarrhœa 816, measles 112, whooping-cough 85, diphtheria 76, scarlet fever 54, fever 41, small-pox (London 9, Birmingham 2, West Ham and Bradford 1 each) 13.

The death-rates ranged from 11.8 in Oldham to 42.1 in Preston; Birmingham 26.2, Bradford 24.9, Gateshead 20.1, Hull 20.7, Leeds 21.6, Leicester 32.1, Liverpool 34.9, London 22.4, Manchester 32.2, Newcastle-on-Tyne 25.7, Norwich 13.5, Portsmouth 19.0, Salford 26.1.

METEOROLOGICAL RECORD,

For the week ending July 15, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...9	29.80	[illegible]	[illegible]	70	[illegible]	71	[illegible]	N.W.	N.E.	[illegible]	4	C.	F.	
M..10	[illegible]	[illegible]	[illegible]	60	[illegible]	[illegible]	52	N.	N.W.	9	7	C.	C.	
T..11	30.14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.W.	10	[illegible]	C.	C.	
W..12	[illegible]	[illegible]	[illegible]	[illegible]	54	74	[illegible]	N.W.	W.	8	[illegible]	O.	O.	0.03
T..13	29.87	72	81	[illegible]	[illegible]	56	[illegible]	N.W.	E.	8	12	F.	F.	0.01
F..14	29.97	[illegible]	70	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	S.E.	11	8	C.	F.	
S..15	21.91	[illegible]	[illegible]	[illegible]	[illegible]	72	[illegible]	S.W.	S.W.	16	21	F.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 15, 1893, TO JULY 21, 1893.

FIRST-LIEUT. JAMES D. GLENNAN, assistant surgeon, ordered to report to the president of the examining board, for examination for promotion.

MAJOR PETER J. A. CLEARY, surgeon, granted leave of absence for four months, on surgeon's certificate of disability.

FIRST-LIEUT. A. E. BRADLEY, assistant surgeon, ordered to report to LIEUT.-COL. DALLAS BACHE, deputy surgeon-general, president of examining board at Omaha, Neb., for examination for promotion to grade of Captain.

FIRST-LIEUT. J. T. CLARKE, assistant surgeon, will, on the abandonment of Camp Poplar River, Montana, proceed to Fort Sully, South Dakota, for temporary duty, and on return FIRST-LIEUT. BRADLEY, proceed to and take station at Fort Omaha, Nebraska.

Leave of absence for one month, to take effect between the 15th and 30th, is granted MAJOR CALVIN DEWITT, surgeon, U. S. A. Par. 2, S. O. 78, Hdqrs. Dept. of Texas, July 11, 1893.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 22, 1893.

T. B. BAILEY, passed assistant surgeon, from Philadelphia Hospital and to the U. S. S. "Machias."

W. M. JONES, medical inspector, from Navy Yard, League Island, and wait orders.

G. H. COOK, medical inspector, to the Navy Yard, League Island.

S. H. DICKSON, surgeon, from Marine Barracks and to the "Dolphin," temporarily.

P. M. RIXEY, surgeon, from the "Dolphin" and granted temporary leave.

J. D. GATEWOOD, passed assistant surgeon, temporary duty at Marine Barracks.

A. R. WENTWORTH, passed assistant surgeon, from the "Atlanta" and granted leave.

W. G. FARWELL, surgeon, to temporary duty on the "Franklin."

C. T. HIBBITT, surgeon, from the "Franklin" and to the "Detroit."

C. W. BROWNELL, assistant surgeon, ordered to Receiving-ship "St. Louis."

APPOINTMENTS.

MALCOM STORER, M.D., has been appointed district physician to the Boston Dispensary.

BENJAMIN TENNEY, M.D., has been appointed district physician to the Boston Dispensary.

PAN-AMERICAN MEDICAL CONGRESS.

SECTION ON MATERIA MEDICA AND PHARMACOLOGY.

A Section on Materia Medica and Pharmacology has been organized under the Executive Presidency of Prof. Joseph P. Remington, of Longport, N. J., with Prof. F. G. Ryan, 3739 Brown Street, Philadelphia, as English-speaking Secretary. Delegates have been invited from all the pharmaceutical societies and colleges in all the Americas. Those contemplating attendance are invited to prepare papers on pharmaceutical topics. Titles should be sent at once to Professor Ryan, Secretary.

CORRECTION.

On page 73 of the JOURNAL of July 20th, the four paragraphs beginning "Mr. Edwin Chadwick" belong under the head of "Vagaries of Sanitary Science," and should be at the bottom of the column.

RECENT DEATHS.

DAVID HARLAN, M.D., died at Churchville, Md., July 12th, aged eighty-four years. He was at one time a member of the Board of Visitors to the Naval Academy at Annapolis, and a Medical Director in the United States Navy.

ANDREW FRANCIS SHEA, M.D., M.M.S.S., died in Lawrence, July 25th, aged thirty-five years.

BOOKS AND PAMPHLETS RECEIVED.

The Colorado School of Medicine, Medical Department of the University of Colorado, Boulder. 1893–94.

The St. Louis Medical College, Fifty-second Annual Announcement, 1893–94, and Catalogue for 1892–93.

Thirteenth Annual Announcement of the University Medical College of Kansas City, Mo. 1893.

Training-Schools for Nurses in Small Cities. By A. Worcester, A.M., M.D. 1893.

Cholera Infantum. By E. Mienert, M.D., Dresden. Reprint. 1893.

Traumatic Lesions of the Spinal Cord. Importance of Arterio-Sclerosis in the Etiology of Posterior Spinal Sclerosis. By George J. Preston, M.D., of Baltimore. Reprints. 1893.

Some Further Remarks on Elastic Constriction as a Hæmostatic Measure, with a Letter from Professor Von Esmarch. By N. Senn, M.D., Ph.D., Chicago, Ill. Reprint. 1893.

A Medical Hand-book for the Use of Practitioners and Students. By R. S. Aitchison, M B., C.M., F.R.C.P.E. Philadelphia: J. B. Lippincott. 1893.

The Stœchiological Cure of Consumption and Diseases of the Respiratory Organs; from Letters to a Patient. By John Francis Churchill, M.D. 1893.

Thirty-fourth Annual Report of the Department for the Inspection of Milk and Vinegar, from February 1, 1892, to January 31, 1893. Boston. 1893.

A Practical System of Studying the German Language. For Physicians and Medical Students. Part I. By Albert Pick, M.D. Boston, Mass. 1893.

Clinical Notes on Chancre of the Tonsil, With Analysis of Fifteen Cases. By L. Duncan Bulkley, A.M., M.D., New York. Reprint. 1893.

Problems of Physical Education. By George Wells Fitz, M.D., Instructor in Physiology and Hygiene, Harvard University. Reprint.

Lectures.

LECTURES ON SURGERY.

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XI.

SPECIAL FRACTURES.

Fractures of the Pelvis. — To go over the anatomy of the pelvis for a moment; the ilium, ischium, and pubes, being three separate bones, afterwards consolidate at the acetabulum. The acetabulum is a little Y-shaped piece in the fœtal state, which is an epiphysis. The three bones unite around this little piece. The acetabulum is a weak point in the bone; and up to the period of adult life, if a fracture of the pelvis takes place, it is very apt to run into the acetabulum, in the line of these old junctions. Setting that aside, there are quite a number of epiphyses which are liable to be broken off. The spine, the lip, the crest, the inferior spine, the tuberosity, — those are points likely to give way in the young subject, unless the fracture takes place through the acetabulum itself.

The fractures of the pelvis in the strong person occur usually in consequence of crushing injuries. Something must seize the pelvis and compress it, either laterally or antero-posteriorly, in order to break it, for it is usually quite strong. Persons occasionally get caught between moving cars, or between the wheel and body of a cart; or occasionally when a person is at work trying to bring a vessel into a wharf; or at ferry-landings, where persons jump off in a hurry, and get caught between the boat and the dock. The next most common cause, I think, is the fall of banks of earth. This crushes and compresses the pelvis.

Fracture of the Crest of the Ilium. — The simplest one is the fracture of the crest of the ilium. It gives rise to but few symptoms. The patient feels very sore and lame about the attachments of the muscles of the abdomen, and on examination there is found a displacement inwards of the crest, and mobility. Crepitus can be found. It unites easily. It is apt to unite with displacement inwards. Bandages put on to hold it in place make it worse. The patient should be kept in bed, with sand bags, perhaps, around the pelvis; and be encouraged to lie still without any direct pressure upon the crest of the ilium.

Union takes place in three to four weeks. It always takes place. I think the resulting injury to the patient as regards the use of the part is slight, if anything at all. The danger in all fractures of the pelvis is in injury to the pelvic contents; especially the bladder, and occasionally the rectum. The bladder may be displaced, removed from its delicate cellular attachments, or torn, or ruptured, by a fracture of the pelvis. In the same way the rectum may be wounded; or the delicate spaces around the rectum may be impinged upon by broken bones and effusions of blood, in such a way, as afterwards to lead to a pelvic cellulitis and abscess, if not to absolute peritonitis. The important point, then, about fracture of the pelvis is the condition of the viscera inside; and these are to be investigated carefully both subjectively and objectively.

In investigating fracture of the pelvis we have a much better opportunity to make a complete diagnosis in the female than in the male, because we have by means of a vaginal examination the ability to map out most of the outlines in the adult pelvis, and to seize the parts within, and compress them outside, and see whether crepitus as well as displacement exists. We have this opportunity, in less degree, by a rectal examination, in both sexes. When doubt exists, we should examine by the vagina and rectum in the female, and always by the rectum in the male.

In regard to the condition of the viscera themselves, we can judge about the bladder in two ways: first, by the intensity of the immediate symptoms; and, second, if these do not exist, by the condition of the water that the patient first begins to pass. It is one of those questions we should always ask and have attended to, the first few times the patient passes water after an accident about the pelvis. Where it is absolutely free from blood the first time, there may be blood in the urine the second time. I have seen it occur several times, that the water passed the first time was clear, but the second time it began to be tinged with blood. The patient first passes off the superficial fluid. The leak begins to bleed; then it bleeds enough into the bladder to give blood with the urine on the second passage. So also we await with a good deal of anxiety the first passage from the bowels; whether that will come down free from blood, and demonstrate that the rectum is whole. Of course, in severe cases of crushing of the pelvis, where the parts have been terribly injured, we have immediate symptoms of great collapse. If the bladder is torn, intense and burning pain about the pubes comes on; the patient makes efforts at passing water without success. If the peritoneum has been involved, we have rise of temperature and all the signs of peritonitis.

We have in the vagina and in the rectum invaluable means for diagnosis by making careful explorations.

Fracture of the crest of the ilium requires but little treatment. Other fractures which run through the pelvis require treatment according to location. They all require absolute rest in bed, with the patient on the back, with the knees slightly flexed, in order to relax the mass of long muscles of the leg which take their rise from the pelvis. In addition, it is of extreme importance and comfort that the pelvis should be held together by a firm swathe, which will compress the bones. A swathe is a very awkward affair, and constantly getting out of place; consequently an apparatus made a good deal like bathing-tights is most useful. In order that this may be applied with ease, all the parts must be laced. In that way everything can be drawn firmly together. It never slips out of place. It is constructed with a view of not chafing the patient, or interfering with the action of the bowels. It is made of heavy material, and fitted as one would fit an elastic jersey, or something of that kind, to the limbs. He must lie persistently on the back; and this apparatus must be kept on a long while — two or three months usually, if the fracture runs entirely through the pelvis. If, in addition to this, we are reasonably sure that the fracture has passed through the acetabulum, this treatment alone will not be sufficient; and we must combine with it the ordinary treatment for fracture of the thigh — extension and counter-extension.

The fractures of the pelvis which are the most troublesome are those which pass through the acetabulum

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— troublesome to diagnosticate and treat — and they give the worst prognosis. The acetabulum being broken through somewhere about its epiphyseal lines, we shall have crepitus and the ordinary signs of fracture about the neck of the femur, but no shortening, and not necessarily any eversion of the foot. Marked eversion, with the femur unbroken, indicates a through and through fracture of the pelvis. Seizing the pelvis with both hands, sometimes, and compressing it, we elicit crepitus. Sometimes we get crepitus on examination by the rectum, or the vagina.

This requires a pelvic band, long rest in bed, and the full treatment for broken thigh, for a considerable length of time.

The result which we get will be union, but probably not smooth and comfortable to the patient. Stiffness of the joint, subsequent arthritis, etc., are common sequences of this fracture. There will be a more or less stiff and uncomfortable hip-joint from the fracture.

Fracture of the Sacrum. — Fracture of the sacrum can be pretty easily detected from the outside, for the sacrum is rather superficial. It can occasionally be detected by examination by the rectum.

It is difficult to restore the position of the sacrum when broken. It may be done possibly by violent pressure from within the rectum. Such cases must be treated by very gentle pressure with a pelvic band, and by keeping the patient in bed. Union is pretty sure to take place. The chance of its breaking through where some of the great nerves emerge is possible, with subsequent sciatica.

Fracture of the Coccyx. — Fracture of the coccyx presents no external signs except that the patient cannot sit down without great distress, and complains of a hard or straining passage from the bowels. Fracture of the coccyx can hardly be overlooked, if we examine properly by the rectum. Passing one finger well up into the rectum and having the thumb outside on the coccyx, you have complete control, and can tell whether there is mobility or crepitus. In addition, we often find that the coccyx is abnormally tipped in; and we can push it back into place. Usually it can be pushed back, temporarily at least, into place. It is important to rectify the position, inasmuch as if left, it interferes with the action of the bowels, causes tenesmus, and is apt to produce neuralgic pains. Coccyodynia is apt to result, and sometimes requires operation to relieve it. I have seen one or two cases of fracture of the coccyx do well under the following treatment: clear out the bowels thoroughly; replace the coccyx into position by the finger in the rectum; keep the patient on the side in bed, and do not let him lie on the back; keep the stools perfectly soft, which is best done by daily small doses of castor-oil.

The slight injuries of the coccyx which happen from persons being thrown from a carriage or sleigh, or falling on some sharp substance, the top of a chair for instance, produce a bending of the coccyx without fracture. They strain the ligaments, bruise the parts, lead to subsequent spasm of the little coccygeal muscles, and to a rheumatic condition, or to some sort of an inflammation of the ligaments of the coccyx itself. This is frequently the seat of long-continued neuralgic pain, and is sometimes relieved by dividing the ligaments; sometimes it has to be treated by excising the coccyx itself, which is not a dangerous operation, if properly conducted, although the hole that is left will surprise you by its depth and size, and take some time to heal up. The average results of any operative interference are not very encouraging.

Fractures of the Neck of the Thigh-Bone.— The neck of the thigh-bone differs very much at different ages. In the young subject it is at a very slight angle from the shaft. In youth it becomes a little more oblique; in adult life it is at a greater angle; in old age it is almost transverse; and in addition to that, it is shortened.

As to the anatomical structure of the neck of the femur, the posterior edge has the thinner wall. It is made up of cancellous tissue partially. The thinner wall being on the posterior part, after moderate injuries it is the back wall which breaks first; and if that gives way, then the femur rotates (just as it would upon a hinge) upon the back wall, and the foot turns out. That is the usual history. In complete fracture across, the foot turns out, from the loss of control of the obturator muscles.

The fact of this different structure of the bone, and its different positions in different ages, apparently explains why it is that fractures of the neck of the thigh-bone, which are complete, are very difficult to make unite again after a certain age. Bony union, it is asserted, almost never takes place beyond the age of sixty. I have seen what I supposed to be bony union at the age of fifty-four, or fifty-five. Even when a person has passed fifty, judging by the constitution and the relative age, we may infer whether they will have sufficient vigor to unite the fracture of the neck of the thigh-bone by bone.

Various reasons exist why this should be difficult to do. In the first place, the upper fragment, as you see, is like one-half or two-thirds of a billiard ball, lying in the socket, bathed in the synovial fluid, having no nutrition except that coming from the ligamentum teres. When there is a complete fracture, the neck rides out of the socket; the femur is gradually drawn up out of the socket; the limb is very much shortened; the parts do not come in apposition; and it is difficult to keep them in apposition, indeed, by treatment. Not only does shortening take place, but, in addition to that, the femur drops back by gravitation as the patient lies in bed.

Want of apposition, want of perfect nutrition, and the general feebleness of the parts, are the causes of failure of good bony union in this fracture.

On the other hand, there is another species of fracture of the neck where separation of the fragments does not take place. This is called impacted fracture of the neck of the thigh-bone: and it occurs from the strong bony tissue of the shaft being driven into the neck and head; the posterior wall of the neck, which is the thinner, giving way; and more or less impaction taking place at a greater, or less angle. By that I mean that this may possibly take place, with the foot directly forward, or in the position of moderate or extreme eversion, according as the bone is driven in posteriorly, as you must see.

Impacted fracture of the neck of the thigh-bone takes place at the same age as the complete fracture; and it is much more likely to occur in the middle-aged and old than in the young; just as in the fracture of the anatomical neck of the humerus, it is especially in middle life and advanced age that that occurs. In extreme youth the epiphyses separate; in adult age the bone breaks at the surgical neck.

The force required to make the neck of the thigh-bone crumble or yield, either to impaction or fracture, is sometimes so slight, in advanced age, that the theory has been advanced, when a person falls and a break is found, that the fall is subsequent to the fracture. Sometimes, probably, this is true; for the violence of the fall is occasionally so slight that you can hardly consider it enough to produce fracture. Old [illegible] will sink down on the floor of a softly-carpeted room, perhaps a distance of two or three feet, and be found to have either impacted, or complete fracture of the neck of the thigh-bone. The slightest possible accidents seem to be coincident with this fracture. Whether they are always the cause of them we have no means of knowing; or whether, possibly, the bone may give way first.

Moreover, there is another very deceptive point. It is this: that in these fractures when the patient merely slips down on the ground, as happens sometimes, the patient is not at first rendered so helpless but that he or she can stand, or walk a few steps, after an impacted fracture; but not after complete fracture of the neck of the thigh bone. Instances are known in which patients have ascended two or three steps of a flight of stairs, before giving out.

A great deal of importance has been laid, as to the chances of bony union and good repair, on the fact whether the line of fracture, in a complete fracture of the neck of the thigh-bone, was entirely inside the capsule, outside the capsule or partially inside and partially outside. A fracture outside the capsule of the neck, outside the socket-joint, is as likely to unite by bone as a fracture of the shaft, or of the trochanters themselves. In proportion as we approach a complete intracapsular fracture, we approach a point where non-union is liable to occur; but to diagnosticate the exact running of a fracture partially inside and partially outside the capsule is probably beyond our knowledge. Some authorities pretend to do it. There is an anatomical peculiarity which is well recognized and has been written upon, which rather gives discredit to this assertion. It would be, in the first place, down through the deep tissues of the buttock, extremely difficult to tell exactly where a fracture had gone with reference to the capsule, even if we knew the exact position where the capsule is. We know where it ought to be. It varies. In some joints it is higher; in some it is inserted lower upon the neck; and if you take this doubtful anatomical position of the capsule itself, and the difficulty of detecting a fracture which may run one-fourth of an inch one way or the other, above or below the neck, you must see the difficulty of the diagnosis of partial intracapsular fracture from entire intracapsular fracture. It is quite clear when we get a fracture outside; we can recognize crepitation directly under the trochanter, and other signs; but when it gets in the vicinity of the capsule, to tell whether wholly inside or out, I am inclined to think is beyond the ordinary run of wisdom, or of guessing.

Symptoms of these two classes of injuries. They are sometimes so slight that they are unfortunately overlooked. The patient has a fall the like of which he has had many times before without sustaining the least injury. He becomes incapacitated; sees he or she cannot walk; and the friends, and often the physician, are ready to ascribe it to a contusion, or bruising, or neuralgia of the part, rather than to a fracture. The subsequent symptoms at first are so slight, that this sort of fracture is very liable to be overlooked.

The impacted fracture. The patient has a very slight slip or fall. He [illegible] and he says he cannot go any further. On being examined it is rare that any bruise of the external parts is found. Such patients usually fall with a good deal of clothing on; and on some place perhaps where it is soft, and a bruise [illegible] fractures. Subsequent swelling comes on; but that is after a day or two. There is not much to guide to the seat of the injury except the nature of the fall and the nature of the pain. [illegible] On having such a patient put to bed and the two legs carefully compared, it will be found that there is a slight shortening and considerable eversion. Great eversion is not always the fact; and occasionally the foot may even be inverted, in some forms of impacted fracture. We should readily distinguish the inversion of this fracture from the inversion of a dislocation on the dorsum, from the fact that in dislocation on the dorsum we must have a shortening of one and a half to two inches, and in this fracture we should have a scarcely appreciable shortening, one difficult to measure; one-eighth to one-fourth of an inch, perhaps, marks the outside limit in the simple impacted fracture of the femur. One-fourth of an inch is the common thing, and with moderate eversion, inability to rotate the foot in. They can move the toes in if they make great effort. In addition to this we should not gain much by rotation of the trochanters, because although the arc of the circle through which it sweeps may have been shortened, it is not like the spindle-shaped motion when the shaft is broken completely off. In impacted fracture, then, with slight shortening and eversion, if we examine here and rotate, we shall not appreciate much difference in the arc of rotation from the normal state. These are about the only signs; and they are very slight. If such a case is overlooked, the patient will struggle to sit up, and will be taken out of bed into an easy-chair and begin to try to move about; and, either after a long time the part will slowly recover at the expense of a great deal of pain, or what is more common, the first violent motion of any kind will produce a complete fracture. Total disability will follow, and complete eversion, and a powerless and shortened limb. This, then, would emphasize very much the importance of not churning about such a suspected fracture too much to get crepitus; for if we have converted the impacted into the complete fracture, we have added very possibly a ligamentous union.

A slight injury, very slight, no bruises; the patient is not able to believe at first that anything could be broken; tries to stand, has to give it up; has great pain (being already fifty-five to sixty years of age); he is found to have slight eversion, slight shortening, inability to rotate the foot in, pain localized perfectly about the neck of the femur; and that is all. Those are the symptoms of moderate impaction.

On the other hand, in the complete fracture of the neck of the thigh-bone, as a rule, the patient has a similar fall, not necessarily a more violent one. It depends upon the age of the patient, condition of the bone, and the reception point of force, whether or not he will get a complete or impacted fracture.

The signs differ a good deal from those of impacted fracture, and the signs are very important to distinguish between these two.

Complete fracture usually gives a shortening of one to one and a half inches. At first this shortening does not take place. It comes on gradually. At first we have slight shortening with eversion and helplessness. The next day shortening will take place, unless some treatment has been applied to draw the limb down. In addition to this the foot is laid off in an everted position. It is completely helpless. The patient can hardly lift the outer side of the foot from the edge of the bed, and cannot invert it to anywhere near the extent he can in an impacted fracture. Pain is great on manipulating the limb. If ether is given, in the early stages, by drawing down gently, and bringing the shaft opposite the neck, we shall generally get crepitus; but we shall get at any rate one other sign, and that is, examining the trochanter, we shall find instead of sweeping through its normal arc, it merely rotates feebly. We can get it more particularly if we seize it; and with the patient etherized, and a person taking the knee, we can see whether this bone rotates through the arc of a circle which comprises several inches, or merely turns on itself. If the latter, you may be quite sure that the neck of the femur is broken off. In addition to this, if the case is untreated for ten or twelve hours, you will have increasing shortening, until it amounts to one, or one and a half inches, in very many cases. We all know how difficult it is to make an accurate measurement as to shortening; and a number of observations must be made and the mean taken. Great care must be taken to place the patient exactly straight on the bed, to have the limbs alike, to have the everted foot held up so as to correspond to the other, that the knees shall be down flat, that the patient shall have no pillow. The surgeon should look at the patient from the foot of the bed, and see if he can draw a line directly through the body to the axis of the head, and then proceed to measure from the anterior superior spine to the inner condyle, and from the umbilicus to the inner condyle; and usually he will detect shortening by both of these measurements, sometimes not exactly corresponding. If one gives one-half inch, and the other three-fourths, he must compromise, and conclude that the true shortening lies between these. This is of no matter one way or the other, except for purposes of diagnosis; and in that way it is of considerable importance. We know when the femur is drawn out of the socket on the dorsum, that it is pulled up and shortened a couple of inches. When we get a fracture of the shaft of the femur, we get deformity in the contour of the limb and great shortening at once. On the other hand, when we get a fracture, impacted, of the neck of the thigh-bone, we get very slight shortening, with eversion; and with complete fracture, considerable shortening after a time, but not at the first moment when the accident occurs. Do not be deceived into the idea when you are first called to a suspected fracture of the neck of the thigh bone, that it cannot be wholly broken off because at first considerable shortening does not exist. You must take all the signs together; examine carefully again during the next twelve hours, and you will probably arrive at an accurate conclusion.

In addition to the chances of getting no union, the patient, if advanced in life and at all of the rheumatic diathesis, is liable also to have a great effort of nature to throw out bone in the wrong place. She will not join the broken part; but throws out bony growths about the socket, and perhaps about the trochanters; the result of which is indurations, bony osteophytes occurring at various points, pain, and more incapacity of the limb than if the patient had not undergone this rheumatic change. We have got to take that into account in making a careful and guarded prognosis with regard to the future utility of a hip-joint injury in an old person. This change may come on after impacted fractures; and it is not safe to say to the patient, "Your bone is cracked, not broken off, and in a few weeks it will join and be as useful as ever," for that is not always the case. In addition to this, a great many of these patients suffer from sciatica, which is annoying, exhausting to the patient, leads of course to wasting and non-use of the muscles about the hip, and subsequent more feeble use of the limb for a long while. This also has to be taken into account.

Now, as to the treatment of these two classes of injuries. It is evident that every effort should be directed to prevent an impacted fracture from being separated from the place where it has been forced in. We are willing to have a little shortening, to have eversion, provided the impaction can stay; because that assures us of a firm bony union. To extend the limb by weights is to risk breaking it off. No extension should be used after an impacted fracture, except with the idea of steadying the limb. It is important that the parts should be held still; and it is best accomplished by the pelvic belt. Put a pad up behind the trochanter, which they cannot shift about and lie on — a pad of hair or cotton, or a little sand bag, which will hold the weight of the trochanter up; the pelvic belt; and additional sand bags to lie about the limb to correct the eversion as far as possible, and to keep the patient as still as possible. In this impacted form, this mode of treatment seems to give very fair results. If we can get along in the old person without long internal or external splints or extension, we by so much diminish their suffering, and the chance of bed-sores, and they generally do better and get about sooner. In the impacted fracture, when we are quite clear about it, we should not manipulate it too much; should support the back of the trochanter; support with a pelvic belt, use sand bags and rest. Six weeks usually will suffice to get it into the condition where the patient can sit up in a chair. After a while the neck will get quite strong; and with the exception of slight shortening and slight eversion, the patient frequently does very well.

On the other hand, in the complete fracture of the neck of the thigh-bone, we cannot be quite sure whether we are to have bony union or not; and we know that if we let the part alone, the muscles within the next twelve to thirty-six hours will pull the lower fragment far up beyond the upper one and produce shortening, and that no union can take place because the parts are not in apposition. Moreover, in addition, this muscular contractility keeps the patient in constant pain; and therefore in this particular injury, at any age, I am inclined to think a moderate extension by weight and pulley, for a while, at least, is a useful mode of treatment. It overcomes muscular spasm; overcomes the pain; draws the parts down into contact; keeps them at rest; puts them in a position where they can unite, if there is any union to take place. The objection against using extension and apparatus on these old people is that occasionally the shock and confinement kill them; and where they show any signs of flagging we should accept the fact that the chance of

This is better than any disability about the hip. We should take off the apparatus, and put them on the double-inclined plane chair, perhaps. In that way we may save life; prevent disasters by sores; retain for them, perhaps, control over the bladder, which is frequently lost; and they may live a number of years. If they are strong enough in the arms and shoulders they get along; for they will be able to use crutches and go about. Many of them live for years, and go about on crutches, with a ligamentous union and a dangling and everted foot. That is the reason why it is sometimes dangerous to use extension; but if the patient can tolerate extension, I am inclined to think a moderate degree of it is indispensable in the early treatment — not applied with the same rigidity or hope of union as we should in fracture of the shaft of the femur, but as a conservative measure to relieve the spasm and pain, and to put the fragments in proper position, and, in addition to that, to keep the parts quiet until nature makes the next change, which she makes if union is going to fail. This change consists in rounding off and smoothing the fragments and leading to a sort of fibrous union; and after that change has taken place, the parts are no longer painful; do not rub together; slide smoothly on each other; and are protected by a species of false membrane. Extension can then as well be taken off as not, for no further relief is to be expected from it.

In old times the whole treatment of fractures of the lower extremity was so much more rigid than now, that the patients, even in vigorous life, frequently got bed-sores, frequently got bad ulcerations of the perineum from the straps that were applied for counter-extension, not infrequently sloughing of the heel from the heel being held in a tin box so long. No wonder that the older surgeons, seeing these disasters in strong subjects, should find that they were pernicious and fatal to an old person.

Now, on the other hand, we have fortunately altered that, and the treatment of fractures of the lower extremity is not so severe. Bed-sore is rare. Sloughing of the heel is practically unknown. I have not seen one for many years, in treating fractures. The perineal strap has been wholly abandoned. The modern treatment of fracture of the thigh is extension by weight and pulley; raising the foot of the bed; preventing rotation outwards of the limb by a long splint or sand bags; and this can be much more safely applied to an old person than the former harsh treatment could be.

These are the arguments, pro and con, in treating complete fracture of the neck of the thigh-bone. Moderate extension, carefully applied, is useful, for it may lead to union. If union has failed to take place after six or eight weeks, there is not the slightest hope of its taking place. Then extension should be abandoned, and the patient got up on crutches; and massage should be used to strengthen the muscles about the joint.

In a certain proportion of cases we shall be annoyed by the persistence of roughness and grating in and about the joint, which is not due to the fracture, which has been rounded and softened in a false membrane, but to the occurrence of chronic rheumatic arthritis. That is the bane of this class of injuries; and it is difficult to do much for the comfort of the patients, unless they can wear some sort of leather splint or support, which will prevent much motion of the joint; or are sufficiently strong to wear a Sayre's apparatus, which extends the leg a little, and allows the patient to walk without much motion or friction in the joint itself.

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TUBERCULOUS PLEURISY.[1]

THE SHATTUCK LECTURE FOR [illegible]

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Case IX. Cough and hæmoptysis a year before; gradual onset of the effusion; repeated aspirations; tubercle bacilli found in the exudate; subsequent development of pulmonary tuberculosis.

Christian T., aged thirty-nine, German, admitted September 25, 1889. Patient is a large, well built, muscular man, very well nourished, with thick panniculus adiposis. With the exception of measles as a child, chills and fever in Germany, and a chancre with mild secondaries in 1884, he has enjoyed excellent health. No history of pulmonary trouble in his family. His wife died of consumption four years ago. He was very well and strong until about a year ago, when he had cough with much expectoration, and on one occasion he spat up a mouthful of blood. In January, 1889, he lost in weight, and for the first time began to be short of breath. He had no pain, and was able to be at work, but on any exertion he became breathless, and he states that this has been his chief symptom, and for it he now seeks relief. He does not think that he has had any fever; temperature on admission was 98°. The patient looks in excellent health; weight about 160 pounds; pulse is 72; tongue is clean. The chest is large, well formed. On quiet breathing there is no special difference noticed, but the right side looks fuller than the left. When he draws a deep breath the right expands very slightly. The apex beat of the heart is visible in the fifth interspace, but an inch and a half outside the nipple line. The intercostal spaces are not marked on either side. From behind, the right side of the chest looks fuller than the left. On palpation there is absence of fremitus on the right side, except just below the clavicle, and there is absolute dulness from the clavicle down, and anteriorly it extends to the left border of the sternum. Breath sounds are feeble and distant on the right side, except in the lower interscapular space, where they are tubular and distant. On the left side the breathing is breezy and loud. On the 28th, 30 ounces of clear fluid were removed. On the first of October the dulness was practically the same, and 30 ounces were again withdrawn. This time it was more turbid. On the 6th he was aspirated again; 25 ounces. Cover slips and cultures were negative. His general condition all this time was excellent. He was up and about the ward, and the temperature was normal. On the 11th he was again tapped, and 32 ounces of fluid withdrawn. He had a very slight cough with much muco-purulent expectoration, which was examined daily for seventeen successive days without discovering bacilli. Although the history of an attack a year ago, with cough and hæmoptysis, raised a suspicion that the process might be tuberculous, there was nothing whatever to guide us to that conclusion; and it was not until he had been under observation for nearly three weeks, and his convalescence was practically established, that tubercle bacilli were found.

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[1] [illegible]

On the 18th he was aspirated and 32 ounces were withdrawn, and the note became clear as low as the nipple. On the 27th 19 ounces were removed. On November 7th, the note reads: "The right lung is fairly resonant to the fourth rib, and in axilla to eighth, posteriorly to middle of scapula." The fluid again accumulated, and on the 16th 28 fluid ounces of a greenish-yellow, slightly turbid fluid were removed, in which tubercle bacilli were found by two separate observers on the 16th and 17th. The measurements on the right side, 19 inches, on the left 18½ inches. On the 14th he was aspirated for the eighth time, and 32 ounces of fluid removed, of the same clear character. The note was resonant to the fifth rib and behind to the middle of the scapula. In these regions the breath sounds were loud and free from râles. Cultures from this fluid remained negative, and no bacilli were found. Patient gained in weight, lost the cough entirely, and was only short of breath when walking fast. Appetite good; sleeps well. He decided to go out, and was discharged December 19th. At the time of his discharge resonance was clear and a little high-pitched on the right side to the third rib in front; below this there was absolute flatness. Behind it is high-pitched to spine of scapula, and below the note is flat; left lung clear. Breath sounds are normal. This patient was under my observation on and off in the dispensary for many months, and at first seemed to do well. Subsequently he was lost sight of, but I heard that he had developed extensive tuberculous disease of the lungs.

Case X. Cough for several years, but good health; gradually shortness of breath; right-sided pleural effusion; repeated aspiration; great improvement; discharge: subsequent detection of bacilli in sputum; development of pulmonary tuberculosis.

Henry H., stevedore, aged thirty-six, admitted June 13, 1889, complaining of severe cough. A sister and one brother died of consumption; father of asthma. The patient has been an extremely healthy man, and looks vigorous and well nourished. He states, however, that he has had a cough for many years, certainly for as long as three years. He has been getting short of breath lately. Patient is not at all anæmic; chest is well formed; the right side looks full, and is almost motionless on deep inspiration; the apex beat is in the fifth interspace, two inches outside the nipple line. The left side measures 19 inches, the right 20 inches; expansion on the right side is scarcely a quarter of an inch; on the left over an inch. Percussion gives on the right side a dull note to the clavicle in front, behind to the top of the lung, and to the left a little beyond the mid-sternal line. The left side is resonant. Tactile fremitus is very much lessened, but on saying 99 it is not entirely absent on the right side. Breath sounds are distant, feeble, scarcely audible. Whispered voice over the dull region behind is not heard. Exploratory puncture shows a thin, greenish-yellow, sero-purulent fluid. The following day he was aspirated and 2½ litres of fluid withdrawn; the accumulation was rapid, and on the 17th the condition was very much as before. He was aspirated again, and 32 ounces of fluid removed. This fluid was greenish yellow, with many fat molecules. The fluid re-accumulated rapidly, and he was aspirated again on the 19th with a withdrawal of 32 ounces, and on the 22d with a withdrawal of 29 ounces, and on the 26th with a withdrawal of 27 ounces. On the 29th it was noted that in front percussion is now clear to the level of the nipple; dulness from this point down. Posteriorly it is clear to the middle of the scapula. There are fine crackling râles in the axilla, distant breath sounds over the dull area. By the 8th of July he had improved so much that he was discharged. The heart impulse was in the fifth interspace, just below the nipple, and there were marked friction sounds in the left mammary region and in the scapular region behind. The cover slips and cultures made by Dr. Abbott from the fluid were negative. When he entered the hospital the sputum was abundant, sero-purulent, and was examined repeatedly with negative results. Subsequently his cough lessened and expectoration was more scanty, thicker, and grayish yellow in color. At no time did the temperature rise above 100°, and it was usually between 98° and 99°.

He left the hospital with a diagnosis of pleurisy with effusion, and though there was a suspicion, based chiefly upon the fact that he had had a cough for so long, the diagnosis of tuberculosis could not be positively made, and he looked such a vigorous, healthy man that it did not seem likely. He attended in the dispensary, where I saw him repeatedly. On the 20th of July it was noted that though the apex beat was just below the nipple in normal position, there was everywhere defective resonance over the right side, not absolute flatness, and everywhere from the second rib down there could be heard a loud, leathery, creaking friction. He remained in very good condition, though the cough still persisted. He had no fever. On September 10th tubercle bacilli were found in his expectoration. The leathery, creaking friction persisted, and the defective resonance on the left side. He had lost somewhat in weight, and the cough had become aggravated. On September 4, 1890, I made the following note: There is marked depression of the right shoulder; shrinkage of the right chest. Heart is a little drawn over; impulse in left parasternal line. The resonance is defective above, and shades to dulness below the level of the fourth rib. The tactile fremitus is felt to the base. At the right apex the breath sounds are somewhat feeble; there are numerous râles on coughing, and on drawing a deep breath the sounds are amphoric. Marked cavernous breathing at the apex behind. The breath sounds are feeble over the whole of the right base. Patient was under observation throughout 1891. He constantly had cough, and lost a good deal in weight. On the 22d of June the note was: He still looks well; the feet swell at intervals; temperature normal; the right chest more contracted and the spine is curved. Even on deep inspiration there is very little mobility. Marked cavernous signs at the right apex. There is no note of the patient after this date.

Case XI. Pleurisy five months before; acute onset of second attack; effusion on left side; gradual recovery; detection of tubercle bacilli in sputum, three and a half years after signs of disease at both apices.

The following case illustrates the importance in diagnosis of a systematic examination of the sputum:

Jos. A., aged twenty-nine, German, admitted July 1, 1889, complaining of pain in the chest, cough and shortness of breath. A brother died of consumption in 1885. Parents dead, but not of tuberculosis. The patient was well as a boy and enjoyed excellent health.

Five months ago he had an attack similar to the present one; was [illegible] in bed for two weeks. He got quite well, but it left him with a little cough. Present illness began six days ago, June 24th, with fever, chilly feelings, and slight cough. He worked until the 29th, and only went to bed yesterday; temperature on admission 102°; respiration 40; pulse 96. Well-built, healthy looking man. Chest well formed, movements equal in upper zone, less on the left side below; most evident on deep inspiration, when the difference in expansion is also very noticeable. Tactile fremitus is much lessened at the left base. There is a hyperresonant note at the left apex, extending into mammary region and axilla, which shades into dulness below the seventh rib, a dulness which is extremely movable and ascends when he sits up. Behind, it reaches to the middle of the scapula. Distant, tubular breathing over the dull region. No friction. Sounds on the right side clear.

Apex beat of the heart not palpable; sounds clear. Dulness in the sitting posture at the level of the fourth rib; movable dulness very marked. The temperature 101°; the cough is better; sputum is muco-purulent, and does not contain bacilli. On the 8th the temperature had fallen to 98°. The effusion had not increased, and the movable dulness is now more difficult to obtain. Though there were a few râles in the left infra-clavicular space, there did not appear to be signs of any cavity. The pleural effusion gradually diminished, and we were inclined to regard the case as one of simple pleurisy. He still had cough, with streaked mucoid and yellowish expectoration, and in it, on the 18th, well characterized tubercle bacilli were found. He improved very much, and on the 22d decided to go out. On the left side the resonance was clear to the sixth rib. There were sub-crepitant râles over the third rib, and in the lower axilla slight friction sounds. There was dulness in the infra-scapular region, diminished tactile fremitus, and feeble breath sounds.

This man was lost sight of until February, 1893, of the present year, when he applied at the dispensary, complaining of cough and pains in the chest, and diarrhœa. He has kept pretty well since his attack in 1889, and has been at work. He is now fairly well nourished. He has very slight expectoration, and none could be obtained for examination. There is rather a high-pitched note over both apices and there are moist râles, greatly increased by coughing.

The effusion in these cases is sero-fibrinous, often has a greenish tint, is sometimes a little turbid. The fluid is not hæmorrhagic so frequently as in the more acute cases. Bacteriologically it is commonly sterile, though in the case of Christian T. tubercle bacilli were found in the exudate itself.

Sero-fibrinous pleurisy, occurring in the course of pulmonary tuberculosis, does not interest us very much. The cases are by no means uncommon, and the diagnosis is readily made. It may be a very early complication and overshadow in great part the lung disease. The insidious onset and the absence of pain in the side not infrequently lead to errors in diagnosis, and the increasing shortness of breath may be attributed to advance in the original disease, or even to a general tuberculosis. It has seemed to me that the early implication of the pleura, even with recurring exudation, gives a stamp of chronocity to the case. Sometimes it is difficult, even post-mortem, to determine which has been the primary disorder, as in the following case; though, from the great thickening, it is probable that the affection of the pleura preceded the disease at the apices.

Case XII. Extensive pulmonary tuberculosis; chronic tuberculosis of right pleura.

Alice S., aged twenty, colored, admitted October 12th, complaining of cough, shortness of breath, and weakness. She knows nothing of her family history, further than that her mother died of asthma.

Patient was healthy as a young girl. About four months ago she had a child; was in bed for eighteen days. Her present illness began, she thinks, about a month ago. She has had a cough, but has been able to work until three weeks ago. Says she has only been spitting "thick stuff" for about two weeks, and during this time she had had a great deal of shortness of breath.

Present condition. She is emaciated; much more so than is consistent with a history of an illness of such short duration. The thorax is long and narrow. The clavicular depressions are marked. The expansion is more marked on the left than on the right side. Briefly, the physical examination gave — at the left apex, signs of an extensive cavity, with cracked pot sounds, and amphoric breathing; at the right apex there were indications of a smaller cavity. Behind, there was marked dulness in the supra-spinous fossæ, and impaired resonance over the whole of the right side below the spine of the scapula, with feeble breathing, and râles only on full inspiration. The abdomen was swollen and tympanitic; no signs of effusion.

The patient had an irregular, hectic fever; her pulse was very rapid; she failed progressively, and died on the 18th.

Post-mortem (by Dr. Flexner, abstract). The pericardium is adherent to the right pleura, but is itself smooth on both of its layers. The right lung is universally adherent; the left is adherent at apex and in places behind. The left lung presented a large, irregular cavity at the apex, numerous groups of miliary tubercles and caseous masses, with small cavities in the middle and lower lobes. Where adherent, the pleura is not specially thickened.

On the right side, the pleura is everywhere adherent; the entire lung is much reduced in volume, and measures only 12.5 cm. in length. The top of the upper lobe is occupied by an irregular cavity lined with slate-colored granulation tissue. The pleura of this lung is enormously thickened, more particularly the costal layer, which measures 9 mm. on the side, and about 11 mm. on the diaphragm; and in other places it is at least 2.5 cm. The thickened membrane is uniformly yellowish in color, and shows cheesy masses. Where the visceral and costal layers are not adherent there is fibrinous exudate on both surfaces, which, when scraped off, shows tubercles on the membranes.

The bronchial glands are coal black in color, and caseous. There is marked intestinal tuberculosis, and the retro-peritoneal glands are enlarged and caseous.

(b) *With Purulent Exudate.*

I have already spoken of the acute purulent form of tuberculous pleurisy. Such cases, however, are rare. The purulent tuberculous pleurisies are much more commonly subacute in onset, chronic and latent in their course. The effusion is usually sero-purulent, thin, and contains a large amount of fatty matter. It is somewhat interesting to note that among the 32 cases in which tuberculous pleurisy of one form or another was present in the cases examined post-mortem from my wards, there was not an instance of purulent effusion, except in pyopneumothorax secondary to tuberculosis of the lung. In the non-tuberculous cases there were but two with purulent exudate, one consecutive to an acute croupous pneumonia, in a case, oddly enough, of tuberculous peritonitis; the other, in an old man with arterio-sclerosis, who had a purulent effusion on the left side and a sero-fibrinous pleurisy on the right. In both instances pneumococci were found in the exudate.

Our clinical reports embrace ten cases of pyopneumothorax, of which eight were tuberculous, and which, of course, do not interest us specially in this connection. Of the 16 cases of empyema, nearly all of which were transferred as soon as possible from the medical to the surgical side, there was a history of tuberculosis in the father or mother in five cases; in one case two sisters died of tuberculosis; and in one an aunt. One case followed cancer of the pancreas, and one was in an old man with arterio-sclerosis; four cases followed pneumonia. Of the 14 cases which were operated upon, 12 left the hospital either perfectly well or very much improved. The only death was in the instance of empyema secondary to cancer of the pancreas. Unfortunately I have not full particulars of the bacteriological examinations made in all of the cases. The details of the early ones, taken by my late assistant, Dr. Meredith Reese, have been mislaid since his untimely death; so that, from our personal experience here, we can draw no conclusions as to the number of these cases in which the lesion really depended upon the presence of tubercle bacilli. I would again refer to the somewhat interesting circumstance that, with the exception of the pyopneumothorax cases, not a single instance of tuberculous purulent pleurisy was met with in the 101 autopsies in which pleurisy of one form or another was present.

(c) *Chronic Adhesive Tuberculous Pleurisy.*

The special feature of chronic tuberculous pleurisy is the enormous thickening of the serous layers. In all the cases of chronic sero-fibrinous exudate the visceral and parietal layers were greatly thickened. Post-mortem, we see three varieties of this form.

(1) Primary proliferative tuberculous pleurisy. Any one of the three great serous membranes may be primarily affected in tuberculosis, though probably in the majority of all these instances the affection of the lymph sacs is secondary to that of the glands in connection with them, or the organs which they ensheathe. In this form the tubercles developing in the pleural and pericardial membranes cause early union of the surfaces, and there is never at any time a free exudate. With the progressive growth of the tubercles the layers become greatly thickened, and united may measure from one to two or more centimetres in diameter. On section the thickened membranes seem to be made up of diffuse tuberculous tissue, sometimes caseous layers and much fibroid tissue. In the early stages of the process, gray and grayish-yellow tubercle nodules are seen. With the exception of involvement of the bronchial glands, this may be the only tuberculous process in the body. It may be unilateral or bilateral. I have seen but two instances in which it was strictly confined to the pleura, without any sero-fibrinous exudate. One was a young, vigorous Irish girl, who had recently come to the country and was admitted to my wards at the University Hospital, Philadelphia, and died on the third day of an attack of malignant scarlet fever. The pleural layers on one side were enormously thickened and in the condition just described. The other instance was a case of typhoid fever, which died under the care of my colleague, the late Dr. Ross, where the young man had bilateral chronic adhesive tuberculous pleurisy without any effusion. It is not infrequent to see this condition in part of the pleura, with pockets of a sero-fibrinous or curdy exudate at the sides or back, or on the diaphragmatic surface. Dr. Flexner showed at the Johns Hopkins Hospital Medical Society, a remarkable case, to which I shall refer again in a few moments, in which both layers of the pleura, but particularly the costal, were enormously thickened, and miliary tubercles and larger cheesy masses were present. On the diaphragmatic surface alone there was an encapsulated sero-fibrinous exudate.

(2) Much more commonly, with very great thickening, and in the upper zone, perhaps, union of the pleural membranes, there is separation of the layers below and on the diaphragmatic surface, by an exudate usually sero-fibrinous, but sometimes containing curdy or even cheesy material. Thus of the 32 cases presenting post-mortem tuberculous pleurisy, there were 12 with very greatly thickened pleural membranes and sero-fibrinous exudate. Of these six were in connection with old pulmonary tuberculosis. As in Case I, referred to under the acute form, the onset may be abrupt as in acute pleurisy. The membranes gradually become greatly thickened. In that case there was an encapsulated serous effusion over the postero-lateral part of the left pleura, and in the rest of its extent the two layers had united and ranged in thickness from one and a half to two centimetres. In connection with this variety there are two points of very great interest. In the first place it may be extremely difficult to recognize at sight that the process is tuberculous. In this very case of John A., who had been under our care and tapped repeatedly two and a half months prior to his entrance to the hospital with an acute pneumonia, it was only the closest examination of the dense, thickened pleural membranes which revealed old fibroid tubercles. A superficial, macroscopical examination might have entirely overlooked the tuberculous character of the process, as the lung on the left side presented no tubercles or caseous areas. Of course, it would have been in any case a suggestive fact that at the apex of the right lung there was an area of caseation and softening the size of a walnut, but I repeat again, as it is a point of importance, that without the most careful scrutiny the nature of the extensive, chronic pleurisy on the left side might have been overlooked. The second point of interest is the fact, well shown in the case just mentioned, and also in the case of John P., that a chronic tuberculous pleurisy may exist for a long time, and lead to great thickening without any extension of the fibroid process into the lung itself.

(3) And lastly, in some instances, the fibroid processes in the pleura may invade the lung tissue and lead to extensive sclerosis. In only one instance out of the 32 instances of tuberculous pleurisy was there any evidence of direct involvement of the lung.

Case XIII. Chronic tuberculous pleurisy; interstitial pneumonia.

Wm. S., aged sixty, admitted November 1, 1890. The patient is a large, strongly built man; states that his family history is good; denies syphilis; has used alcohol to excess; had typhoid fever five years ago; rheumatism six years ago. He came in complaining of shortness of breath and cough, which symptoms he has had since the spring of the present year. He states also that he has lost very much in flesh. Has had no diarrhœa; no hæmoptysis, and does not think that he has had much fever.

Though a large-framed man he is somewhat emaciated, and is anæmic. Pulse is 100; respiration 36. Chest is broad, of good depth; costal angle 90. There is deficient expansion on the left side; no definite dulness at the apices or axillæ; at the left base the note is high-pitched. The breath sounds are enfeebled in front; expiration slightly prolonged; a few dry râles heard occasionally. There is a friction sound in the lower left axilla. At the left apex the breathing is puerile in type, with fine crackling râles. Many tubercle bacilli were found in the sputa. The case was regarded as one of senile tuberculosis, with some emphysema. He had repeated attacks of shortness of breath, and on the morning of the 9th he had a very severe attack, with small, rapid pulse, and died apparently in syncope. The temperature was very irregular, frequently sub-normal, as low as 96°, and on several occasions 95°.

Autopsy. In right pleural cavity about 200 c. c. of cloudy fluid. The pleura is divided into many compartments by fibrous septa. Both layers are thickened, and present many miliary tubercles and tuberculous granulation tissue. Left pleural cavity is obliterated by firm adhesions. The lungs are voluminous, and they do not retract on opening the chest. There are numerous, dense bands of fibrous tissue running through them, most marked at the apices, and these bands extend directly from the pleura into the lung substance, particularly from the root. There are small areas of caseous pneumonia. The bronchi of both lungs are somewhat dilated and filled with muco-purulent contents. There is a cavity the size of a hazelnut at the apex of the right lung. The condition is that of an interstitial pneumonia, with dilated bronchi, and an extensive tuberculous pleurisy on the right side. There is a small tuberculous ulcer in the larynx.

General Serous Membrane Tuberculosis.

There is a group of cases of tuberculosis in which the serous membranes are chiefly involved, either simultaneously or more commonly one after another, forming a clinical type fairly distinctive and readily recognized. There have been several interesting studies of this condition, notably the Paris Theses of Moran and Boulland in 1884 and 1885, and the careful study of Vierordt.[2] The pleuro-peritoneal membranes may be alone involved, or the pleuro-peritoneal and pericardial surfaces. There are, as noted by Boulland, three groups of cases.

First, an acute tuberculosis, with rapid evolution of the disease in pleuræ and peritoneum, generally consecutive to local disease of the tubes in women, or of the mediastinal or bronchial lymph glands.

Second, cases in which the disease is more chronic in its nature, with exudation in both peritoneum and pleuræ, the formation of cheesy masses, and the occurrence of ulcerative and suppurative processes. In this group the pleural involvement is much more commonly secondary to the peritoneal, or both may be a sequence of pulmonary tuberculosis.

And, third, there are instances in which the pleuro-peritoneal affection is still more chronic, the tubercles hard and fibroid, both the membranes showing much thickening, often with very little exudation. My experience with this form of general involvement is not great, and of the thirty-four instances of peritoneal tuberculosis which have been under our observation at the Johns Hopkins Hospital, in only one was there involvement of the pleura.

I have not met with an instance in which the three serous surfaces were involved together, though many such are on record, and in some the disease has been almost exclusively confined to these membranes.

A knowledge of the existence of this combined infection is somewhat important, as such cases are often of great obscurity. More commonly the affection begins in the peritoneum and may be extremely chronic, and then gradually invades the pleura. In other instances there is a sub-acute pleurisy and subsequent invasion of the peritoneum. The cases often have a very protracted course; there are periods of great improvement, and there may be little or no fever. The following case is at present under observation:

Case XIV. Pleuro-peritoneal tuberculosis; an illness with anasarca; great improvement; persistence of ascites; development of right-sided pleurisy; drainage of peritoneum.

R. A. B., colored, aged thirty, farmer, admitted May 9, 1893, complaining of swelling of the abdomen. Father and mother, two brothers and one sister living. Was healthy as a boy; measles at nineteen, scarlet fever at twenty-seven, no other serious illnesses. Married ten years, wife healthy, three children. Has not had venereal disease; has been a temperate man. For two years past patient has had failing of eye sight (cataract), which, he says, is due to irritating dust.

Present illness dates from last October, when he had an attack of gradually increasing shortness of breath, with swelling of the legs and body. Evidently this was a very severe illness, as he was confined to a chair for three months, and was not able to lie down. He had no special cough, but does not know whether he had much fever. The swelling in the legs gradually disappeared, and has been absent now for about three months. The swelling in the abdomen has persisted. He complains chiefly of shortness of breath on exertion, and of the swollen abdomen. He has a little cough and slight, scanty expectoration. Patient is a medium-sized, moderately well-built man; face not specially emaciated. The temperature on admission was 97.5°; rose in the evening to 103°. He lies quietly in bed, head not elevated, no respiratory distress. The conjunctivæ are a little yellow, pupils are dilated. Mucous membranes are somewhat pale. Pulse is regular, 90 to the minute, the vessel-wall a little sclerosed. The brachials pulsate visibly. The chest is well formed; costal angle good; the lower part of the thorax is expanded. On deep inspiration, the left side moves more than the right. Percussion gives a dull note on the right side, beginning at the sixth rib in the recumbent posture, and in the erect posture at the fourth rib, the dulness being distinctly movable. Behind, when sitting up, the line of dulness is above the angle of the scapula. Percussion is clear throughout the left side. Tactile fremitus is diminished over the dull area on the right side, and the breath sounds are feeble. There is no friction murmur heard. Apex beat of the heart is not very distinct; pulsation in the fifth space, just inside the nipple line. The sounds are everywhere clear. A needle was inserted into the pleura and a serous, greenish-yellow fluid was withdrawn, containing a little blood, which did not coagulate on standing. Cover-slip preparations of the serum showed no organisms, and cultures on agar remained sterile.

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[2] [illegible]

The abdomen is distended and large, but symmetrical in the flanks and a little prominent in the umbilical and epigastric regions. On palpation it is everywhere soft, painless, not resistant, except in the upper zone, a little above the level of the navel. In the whole of this region up to the xiphoid cartilage and the costal margin, there is an ill-defined, doughy resistance, which terminates below in a tolerably well-defined border. On three separate occasions a very definite friction murmur was felt. The edge of the liver is not palpable on deep inspiration, nor can the margin of the spleen be felt. On percussion, there is tympany in the hypogastric and umbilical region, slight dulness in either flank, which is movable; no distinct fluctuation wave. There is a flat tympany in the epigastric and hypochondriac regions. The liver dulness begins at the border of the sixth rib, and extends to the costal margin in the nipple line. There are no glandular enlargements; no œdema of the feet. The urine is clear, faint trace of albumin, and a few leucocytes, and a few red blood-corpuscles. The temperature during the first week of admission was irregular, ranging usually between 98° and 100°, but on three occasions rose to 103° in the evening. Frequently the morning temperature was very low. After May 16th his temperature did not go above 100°. He has gained in weight, and the small amount of sputum which has been obtained has always been negative.

A diagnosis of pleuro-peritoneal tuberculosis was made, and on the 10th Dr. J. T. M. Finney made an exploratory operation in order to drain the peritoneum. A quantity of dark, reddish-brown liquid was removed. The peritoneum was deeply injected, and the visceral layers studded with numerous gray and yellow-gray nodular tubercles. The omentum was rolled up, and there was great thickening about the stomach and colon.

It is not very uncommon to see the pleura and peritoneum involved secondarily in chronic disease of the lungs.

(*To be continued.*)

Medical Practice in Colorado. — Hereafter, the Colorado State Board of Medical Examiners will recognize, as entitling their holders to a license, diplomas from such medical schools only as require three years study of at least twenty weeks each year. The school must have required a preliminary examination and given instruction in anatomy, physiology, chemistry, pathology, therapeutics, obstetrics and gynecology, surgery, theory and practice, and hygiene. In default of a diploma from such a school the candidate must pass an examination in the above subjects.

Original Articles.

PHAGOCYTOSIS.[1]

BY HAROLD C. ERNST, M.D.

(Concluded from No. 4, page 89.)

This work of Christmas-Durckinck-Holmfeld is a fair example of the arguments brought forward by the opponents of the theory that phagocytosis plays any important part in the production of immunity, even if it is somewhat old; and it is of interest to see in what way Metschnikoff meets the objections, which he does in a paper written shortly afterwards.[8] He says here, that his critic is wrong in the assertion that there were few results obtained by experiments upon warm-blooded animals, as can be easily seen by a reference to his article "Ueber den Kampf der Zellen gegen Erysipelkokken,"[9] with which his opponent is not familiar, and further in the article upon "die Abschwachung der Milzbrand-bacillen im Blute immuner Schafe,"[10] in which he (Metschnikoff) uses the occurrence of phagocytosis as a prognostic sign; when many cells containing bacilli are found, the animal may be considered likely to live, when few are present (or none) death is likely to occur. He says also, that he has worked so often with rabbits, and has got such positive results, that he cannot accept those of his critic, and suggests that perhaps these latter were due to the technique employed; which is not fully described. He says that *fresh* preparations must be used, to which have been added some old Vesuvin solution, or distilled water, as suggested by Koch.[11] If this be done, there will be invariably found, in animals immune either by nature or artificially, many phagocytes containing bacilli. Metschnikoff says further, that he has many times used rats for experiment, and always with the same results as above (except that the distinction is not so sharp), and that he has also used preparations (dried only, however,) from his own blood, for the study of the struggle between the leucocytes and bacteria. He says that the observations of the behavior of bacteria in pus contained in capillary tubes, are not trustworthy,[12] even if the tubes be kept at 37° C., for they are not under natural conditions; and it is also the fact that the bacteria observed by him under these conditions produced no spores, even after three days.

From what we know of Metschnikoff's work, it is but natural to suppose that he does not agree with the objection to the experiments upon cold-blooded animals, on the ground that the results cannot be applied by analogy to warm-blooded animals; for it is just this point upon which he is most insistent. Neither does he agree with the theoretical objections and explanations that the bacteria are destroyed by the absence of oxygen, which fall to the ground since the particular bacteria under consideration are facultatively anaërobic. He goes on to say, that he has never, as is asserted, defined phagocytosis as "a power of the leucocytes of certain animals to eat the invading bacteria (and so destroy them)," any more than he has ever asserted that "every organism is immune to such parasitic dis-

[1] Read before the Boston Society for Medical Improvement, April 10, 1893.

[8] Fort. der Med., Bd. V., 1887, s. 541.

[9] Virch. Arch., Bd. 107.

[10] Ann. de l'Inst. Past. T. I., 1887, No. 1.

[11] Virch. Arch., Bd. 97.

[12] See Ann. de l'Inst. Past., July, 1887.

cases, the parasites of which, the phagocytes of such organism can destroy" — anybody who will take the trouble to read his assertions will see that this is not so. The assertion that "most suppurative bacteria are never enclosed by the leucocytes" is not true, as is shown by many observers; and, in point of fact, the enclosing of bacteria by the leucocytes was first demonstrated in the suppurative bacteria. When the assertion is made that the fluid of pus itself can destroy bacteria, by depriving them of oxygen, how is the retention of its vitality and pathogenic properties by the bacillus of tuberculosis explained, an organism that is extremely aërobic, and requires so much oxygen for its continued vitality? He closes by saying that while he certainly has difficulty in explaining certain diseases by means of phagocytosis, — such as erysipelas, relapsing fever, as well as mouse-septicæmia and tuberculosis, — very certainly he finds nothing in anything of them diametrically opposed to the theory. He has had the greatest difficulty with chicken-cholera; but, in his later work he seems to have surmounted much of it.

Baumgarten's opposition has probably done as much as that of any individual to destroy the influence of Metschnikoff's work. Giving the results of experiments in his own laboratory,[13] he says that they are in wide opposition to the claims of Metschnikoff upon the importance of the leucocytes in producing immunity against, or the healing of bacterial processes. If anthrax spores or bacilli be injected into the dorsal lymph-sack, some of the elements are, after a time, taken up by the leucocytes; *but*, the degeneration and disappearance of the bacilli occur *first* among those in the lymph-fluid, *later* in those contained in the cells. On the contrary, in frogs kept at 25°–30° C., an *increase* of the englobed bacilli may be found, but the frogs die with a great increase of the bacilli in the blood and organs (as of course would be the case, if the phagocytic action had not been sufficient to arrest their development). In pigeons immune to anthrax (and not all of them are so immune) the injected bacilli have disappeared, at the latest, in twelve hours, without the slightest perceptible entrance of any of them into the cells (several of the lantern slides will show that this is not so), and even without the slightest *microscopic* appearance of suppuration; observation of the disappearance of bacilli in distilled water shows that it occurs in the same way, as Baumgarten thinks, by the absence of nutrient material. The process of healing of the cornea after staphylococcus infection seems to show that the leucocytes die *before* the cocci (?), so that they can have nothing to do with the destruction of the cocci.

Again [14] he criticises Metschnikoff's work very severely, saying that it can be concluded, from his own (Metschnikoff's) observations, that phagocytosis was not the healing agent; that in rothlauf, healing occurs without any phagocytic action; that warmed frogs would die any way, without the injection of anthrax bacilli; that in cold frogs there is never a complete attack of the bacilli by the leucocytes, and that these cannot therefore be the curative agent (?); that the same thing is to be said in regard to recurrent fever in apes. His criticism is ironical; and he concludes by saying, that the results of his own and his assistant's work are diametrically opposed to those of Metschnikoff.

Metschnikoff [15] reviews the work of Fahrenholz [16] and Czaplewski [17] with especial care, because they form the basis of Baumgarten's criticisms upon phagocytosis. Fahrenholz's conclusions (working with the spores of anthrax) are exactly the opposite of those of Metschnikoff; and the latter in turn shows that the experiments of Fahrenholz of keeping frogs at a temperature of 25°–27° C. were exceedingly crude and unsuccessful, and cannot be taken as evidence. Not only was the temperature faulty, but the spores themselves were of poor quality (p. 37), he having used those that were six years old. Metschnikoff remarks that the wonder was that any results in keeping with his own were obtained with such material; and then says, that, if the experiments had been made in accordance with proper regulations, the results would doubtless have been the same as those of Lubarsch [18] which are in complete accord. Czaplewski rejects phagocytosis, and the "chemical" theory as well, as explaining the immunity of pigeons against anthrax, and frankly confesses that he does not know how it occurs. Whereupon Metschnikoff refers him to Hess [19] and Nuttall [20] on the one hand, and on the other declares that the immunity of pigeons, in this affection, is one of the very best examples of macrophagocytosis; these macrophagocytes being the large mononuclear cells, easily staining with the aniline colors, and occurring so abundantly that Czaplewski must have seen them, but failed to recognize them — probably meaning them by the term "little masses in which the bacilli are crowded together," the occurrence of which he notes as common. They were probably poorly stained; for which reason, Czaplewski did not recognize the nucleus.

Baumgarten makes himself responsible for these two articles;[21] and in the same place from which we have been extracting, Metschnikoff shows that Baumgarten makes statements differing from the original ones of Fahrenholz.

To take another instance: Finger [22] concludes, from the varying behavior of glanders bacilli in susceptible, immune, and immunized animals — their growth in the tissue fluids, their death in other situations, the appearance of leucocytes in immunized and susceptible animals, and their complete absence in immune animals — that we have to do with a complicated process, and that, not only the leucocytes, but the tissue fluid itself, has a great part to play in these processes; facts with which Metschnikoff's theory cannot well be brought into harmony. Which would be very true if that theory claimed all that the critic ascribes to it; but Metschnikoff [23] says that, "among the biological causes [of immunity] are to be mentioned cellular action in general, and especially the microbicidal action of the phagocytes . . . the most difficult point in the study, being to separate the different agents that can assist in producing immunity," showing distinctly that he does not ascribe it all phagocytosis.

Bitter [24] gives a long review of all the work done up to that date upon phagocytosis, including Hess,[25] Ribbet,[26] Lubarsch[27] and Pawlowsky,[28] in favor of Metschnikoff's arguments; and Baumgarten,[29] Weigert[30] Christmas-Durckinck-Holmfeld[31] and Emmerich[32] against his conclusions. Upon the basis of this review and the work of Nuttall[33] he concludes as follows: "Nowhere do we find in Metschnikoff's work, or in that of his supporters, *absolute proof* that phagocytes take up and destroy vigorous disease-producers that are dangerous to the body. Against this conclusion are the new observations upon the intensive degeneration of virulent bacilli in the body-fluids without the help of the cells; the late taking up of the injected bacilli by the cells; the greater taking up, and with increased readiness, of the injected cultures in complex cases; and, finally, the appearance and activity of the phagocytes, especially at such a time and in such a condition of the body, that the attack of the infectious element and the pressing need of the body is over; further, he considers that the phagocytes employ their "eating" power only against bacteria that have lost some of their vital energy. He does not deny that phagocytosis *may* occur in accordance with the hypothesis of Metschnikoff, but he does not consider that its general applicability (validity) is established. If it is desired to prove this, it must be demonstrated, without doubt, that phagocytosis occurs at once upon the entrance of living and fully virulent bacilli, and that an effective destruction of them does not occur without the intervention of the cells. That phagocytosis does occur as soon as it may be reasonably supposed that the cells can exercise their function may be seen in some of the slides to be shown; but neither Metschnikoff or any one else would attempt to claim that this is *all* that is necessary for the resistance of the organism to an attack in all cases.

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[13] [illegible]

[14] Zeit. f. klin. Med., xv., s. 1.

[15] [illegible]

[16] [illegible]

[17] [illegible]

[18] Cent. f. Bakt., Bd. v, No. 19.

[19] [illegible]

[20] [illegible]

[21] [illegible]

[22] [illegible] zur Path. Anat., Bd. vi, Heft, iv.

[23] [illegible]

[24] [illegible]

[25] [illegible] cx, s. 313.

Wolfheim[34] experimenting with the staphylococcus aureus, and producing keratitis with it in the rabbit, found many more cocci between than in the cells, and that, after from two to six days, the phagocytes showed more or less signs of degeneration. Therefore, the phagocytes can in no way act *alone* as the destroyers of the bacteria.

Buchner[35] seeks to oppose phagocytosis by asserting that the leucocytes are attracted solely by substances extracted from the bodies of bacteria, and that, as a consequence, the bacteria must have been already destroyed by the bactericidal properties of the body-fluids, before the leucocytes proceed towards the invaded region. Such a supposition is opposed by these facts: (1) leucocytosis in infectious diseases is observed from the beginning, that is to say, when the bacteria are living; (2) the increase of the leucocytosis is seen to occur along with the rise of temperature, and ceases exactly at the "crisis," just when a large number of bacteria perish; (3) leucocytosis is seen in cases in which bacteria are living in the blood, as in the anthrax of susceptible animals and in the recurrent fever of man; (4) the leucocytes, as Buchner himself acknowledges, englobe living bacteria — when the bodies of the bacteria are very numerous, but associated with toxic products, the leucocytes, instead of being attracted, are repelled by these toxines.

Emmerich[37] goes much further than Behring, asserting that phagocytosis has *nothing* to do with immunity. Metschnikoff shows that his experiments were fallacious, when he asserted that the bacteria of "Rouget" were completely destroyed in twenty-five minutes, a time too short for phagocytosis to occur, for Metschnikoff could not, and Emmerich has not since been able to, show the complete destruction of the bacilli in less time than a number of hours, which is plenty of time for the leucocytes to arrive at the threatened point and to exercise their phagocytic property.

Among the mass of papers that have been written upon the subject it is a relief to find the following conclusions by Lubarsch:[37] (1) It appears as yet to be impossible to give a general explanation of immunity, even for a single bacterial disease; (2) for certain cases, it appears extremely probable that immunity is produced by a reciprocal action between the cells and the bacteria, which, as I suppose in opposition to Metschnikoff, has its results outside of the cells; (3) a bacterial-destroying property of the circulating blood *independent of the body cells* is, as yet, unproven.

Ruffer[38] has made a series of investigations "On the Phagocytes of the Alimentary Canal," and formulates his conclusions as follows: first remarking that it is interesting to note that the phagocytic phenomena seen in the intestines occur most commonly in, and in the neighborhood of, Peyer's patches, the seat of so many of the diseases occurring in them; (1) migratory cells possess the power of passing to the surface (of the intestine); (2) there are two sorts of these cells, the *micro* and the *macro* phagocytes; (3) the latter produce also microphagocytes; (4) the macrophagocytes possess the power of destroying microphagocytes; (5) both destroy bacteria; (6) in the normal mucous membrane, the bacteria never occur free between the cells in the lymph or blood channels; (7) the destruction of the bacteria constantly going on in the lymphatic tissue of the intestines has the greatest similarity to the destruction of pathogenic bacteria in resisting animals.

Metschnikoff[39] has shown the very interesting fact, that phagocytic intracellular digestion goes on in certain cases in an acid medium, although, in other instances in the same experiment, no reaction makes itself apparent. In some of the macrophagocytes seen in his experiments, there was to be seen, near a red granule of litmus, a vacuole containing blue granules of the same substance, showing that the production of the acid intracellular material may be limited to one special portion of the cell.

Time might be taken up almost indefinitely by reviewing articles for and against the assertions of Metschnikoff, but this would be useless. Perhaps the best method for bringing this part of the discussion to a close will be to quote from his book upon "Inflammation," his answer to one of the most prominent objections to his theory. He says (p. 230 et seq):

"But, they say — and this objection has been made many times — if phagocytic reaction is developed in order to protect the organism against danger, how is it, that just when the organism is the most menaced, the phagocytes refuse to carry out their part? Here, also, the objection comes from an incomplete knowledge of the principles of the theory. Just because the defence by the phagocytes is developed in accordance with the law of natural selection, and not following out a predestined purpose, it is perfectly natural that cases should occur in which the phagocytes do not accomplish their function, which threatens great danger and death to the organism. In nature, there are found varying characters, sometimes useful, sometimes hurtful to the organism. The first produce survival, the second death. If, for example, we consider two organisms — the one, the phagocytes of which are easily repelled by the bacterium; and the other, whose phagocytes manifest a positive sensibility, bringing on an abundant phagocytosis — the first will easily become the prey of the parasite, will be eliminated by natural selection; whilst the second will resist the infection, will survive, and will produce successors endowed with the same phagocytic powers. It is evident that in such conditions, the activity of the phagocytes will augment, supported by selection.

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[26] Deut. Med. Woch., 1884; and Der Unt. path. Schimmelpilze im Korper, Bonn, 1887.

[27] Ueber Abschwachung der Milzbrand-bacillen im Frosch Korper, Fort. der Med., 1888, Bd. vi, s. 1.

[28] Die Heilung des Milzbrands durch Bact. u. s. w., Virch. Arch., Bd. cvii, s. 494.

[29] Path. Mykol., Bd. i, s. 105.

[30] Fort. der Med., Bd. vi, No. 3.

[31] loc. cit.

[32] Die Heilung des Milzbrands, Arch. f. Hyg., Bd. vi, 4.

[33] Zeit. f. Hyg.. Bd. iv, s. 353.

[34] Beit. z. Path. Anat. Zeigler, Bd. iii, 1888, s. 403.

[35] Munc. Med. Woch., 1891, Nos. 32, 33; and Trans. Int. Med. Cong., 1891.

[36] Munc. Med. Woch., 1891, s. 551.

[37] Ueber die Ursachen der Immunitat., Fort. der Med., Bd. viii, No. 17, 1890.

[38] Quart. Journ. Mic. Science, p. 484, 1890.

[39] Recherches sur la digestion intracellualire, Ann. de l'Inst. Past., T. iii, 1889, p. 25.

"But the curative force of nature, of which inflammatory reaction is the most important element, has not yet reached a perfect adaptation. The frequency of disease and of premature death proves this quite sufficiently. The phagocytic property has not yet reached its last stage of development, and is still undergoing perfection. Often the phagocytes retreat from the enemy or destroy the elements of the organism of which they form a part (as in the scleroses). It is this imperfection that has for so long rendered necessary the intervention of man — not satisfied with the action of his natural curative force. . . . But if on the one hand, medical science has so much that should rest upon biology, of which it constitutes but a part, this service should not be gratuitous.

"General biology itself can gain great advantages by including morbid phenomena in its studies. Often biology finds difficulties in its study of the processes of evolution, because these phenomena are presented under a completed form. So that, for the close analysis of natural selection, the too well-balanced phenomena occurring in nature do not furnish favorable material. To shed light upon this general law, less stable phenomena must be studied — in short the actions less completed, in which the action of natural selection can be observed from day to day. Such are precisely to be found in morbid phenomena with the reactions which they excite — the struggle between the organism and its aggressors, which gives the best opportunity for a consecutive study of the progress of natural selection. In this struggle there always occur survivals, the result of selection, and deaths, occurring for the same reason. On the one hand there are the victorious organisms selected and the parasites destroyed; on the other, the vanquished organisms are eliminated and the conquering parasites selected."

I have endeavored to give, as briefly as possible, a selection of the main arguments against the theory that phagocytosis plays an important part in many of the processes resulting from the attack of the living organism by infectious bacteria, together with some of the replies that may be made to these criticisms. I have also endeavored to show that it is not possible to ignore all the facts that have been brought forward in favor of such a view, as well as to do away with the common impression that the theory is urged to the exclusion of any of the other phenomena that undoubtedly occur. Personally, I am constrained to believe that it is a force that is always present and ready to act, although under many conditions its action is of the slightest, and practically imperceptible by the rough means of observation at our command.

There are, of course, many gaps to be filled in the chain of evidence, but there seems to be no one more ready to acknowledge this than the original author of the theory himself; and certainly no one has, of late years, shown as much brilliancy and persistency in carrying out the investigations necessary to establish his point.

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LEUKOCYTOSIS AS AN ELEMENT IN THE PROGNOSIS OF PNEUMONIA.

BY RICHARD C. CABOT, M.D.,
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In view of the conclusions reached by Uskow, Kilodse, W. S. Thayer and others, on the prognostic importance of leukocytosis in pneumonia, the blood of forty-nine cases of well-marked croupous pneumonia occurring at the Massachusetts General Hospital since February 1, 1893, has been examined in dried cover-glass preparations. These cases occurred in the services of Drs. E. N. Whittier, W. L. Richardson, R. H. Fitz and F. C. Shattuck, to whose kindness I am indebted for permission to report the results:

Leukocytosis was present in 41 cases, of whom 10 died.

Leukocytosis was absent in 5 cases, of whom *all died.*

Leukocytosis was doubtful in 3 cases, of whom 1 died.

In order that the influence of personal equation might be as nearly as possible the same in all cases, an exactly identical technique was used in all.

A small drop of blood flowing freely from a prick in the ear, was touched with the centre of a carefully cleaned cover-glass. This glass was then quickly dropped with the wet side against another glass, and the two slid apart before they had time to stick. The layer of blood on the dried glasses is, after a certain number of trials, approximately of the same thickness in each case, if the observer use always the same technique. In the writer's experiments the field of a Leitz No. V objective with a No. 3 eye-piece focused on the centre of a cover-glass so prepared, contains from 500 to 1,000 red corpuscles. This has been verified by repeated counts. Such a field, if the blood were normal, would contain one to three leukocytes. In the pneumonia cases examined, there were in a large majority of the cases from five to ten leukocytes in such a field; one case was counted, and showed a proportion of one white to fifty-four red.

In the five cases above mentioned, in which no leukocytosis was found, the examination was repeated several times at different hours of the day, but the results were always the same.

As far as these figures go, therefore, it would seem that while the presence of leukocytosis is not a very hopeful sign (one-fourth of those in whose blood it was present having died), ***its absence makes the outlook bad.*** Moreover, in two of these five cases the other reasons for giving a bad or guarded prognosis were not present. The individuals were both under fifty, were not at all alcoholic or weakly, and there was nothing in the condition of pulse, temperature, nor in the physical signs in the chest, to lead one to expect a fatal result. Yet both went down with surprising rapidity, and without any reaction to vigorous stimulation and supportive treatment.

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Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY CHARLES M. GREEN, M.D., BOSTON.

IMPREGNATION DURING THE PUERPERIUM.

Kronig,[1] at a meeting of the Obstetrical Society of Leipzig, March 20, 1893, reported the following case:

The patient, twenty-two years old, healthy, had always menstruated regularly every four weeks. The birth of her first child took place July 4, 1892: the child was suckled by the mother for ten days, and throve. On the eighth of July, four days post partum, coitus took place, followed by sexual abstinence for three months: the menstrual periods did not appear. Fœtal motion was first felt in November, 1892, and the child was born March 10, 1893, 243 days from the date of coitus, and 247 days from the birth of the last preceding child. The infant bore every appearance of maturity, although, of course, it was premature by 27 days: it was 20.8 inches long, and weighed over 7.5 pounds.

From this case Krönig draws the following conclusions:

(1) During a pregnancy of 243 days, reckoned from the fertile coitus, a mature child can be developed. [This amounts simply to saying that an eight months infant usually *appears* mature, a statement which no one can gainsay. — Rep.]

(2) Spermatozoa retain [that is, may retain] their vitality in the lochial secretion.

(3) Ovarian activity does not entirely cease during pregnancy; the follicles ripen so that they may reach maturity very soon post partum.

(4) Menstruation and ovulation may occur independently of each other.

(5) In strong and healthy persons in the puerperium the endometrium may rapidly reach such a degree of regeneration that it is possible for the impregnated ovum to obtain a nidus very early in the convalescence.

In the discussion Rösger remarked that he had seen in the dead subject, as early as two days post partum, glandular crypts in which an ovum could take root. The customary representation of the puerperal endometrium as a wound-surface holds good only for the placental site. Rösger cited, as a curiosity, a case of coitus intra partum.

THE MANAGEMENT OF BREECH PRESENTATIONS.

Etienne[2] (Nancy) reports a series of fifty breech labors, with viable fœtuses, with no infantile mortality, — a remarkable result, considering the usually accepted mortality of ten per cent., or even of 25 to 33 per cent. (Hegar) in primiparous cases. Etienne's cases were conducted in the Nancy Lying-in Hospital between 1883 and 1891: there were 76 cases in all; but 26 were rejected in which the fœtus was either dead ante partum or non-viable.

The secret of the success in the Nancy Clinic is a skilfully exerted suprapubic pressure during the extraction, whereby the extension of the head and the slipping up of the arms are prevented. [This is no new manœuvre: it has long been taught in the best schools, and its importance is occasionally emphasized in journal articles. It is probable that the usual mortality, while partly due to a general want of obstetric skill, is almost entirely attributable to the want of intelligently applied vis a tergo while the operator is making tractions on the child's legs and trunk. Unquestionably, well directed pressure in the proper axis on the fundus uteri through the abdominal walls will almost invariably prevent the extension of the head and the upward displacement of the arms; and consequently it should be an invariable rule of practice that the obstetrician should have with him, during the second stage of breech cases, a skilled assistant. It is not enough to send for assistance after the arrest of the head has taken place, for then it is too late. We are confident that if the above rule is conscientiously followed the fœtal prognosis in breech cases will be greatly improved. — Rep.]

CEPHALIC VERSION IN PRESENTATIONS OF THE BREECH.

Owing to the greater fœtal mortality in breech labor, this mortality being about ten per cent. as compared with two per cent. in head presentations, many teachers of obstetrics, especially of the French school, have recommended that cephalic version be performed by the external method, before rupture of the membranes. The wisdom of this procedure as a rule of practice has been questioned by teachers in this country, owing to risks of prolapse of the funis or of the fœtal extremities, or again of entanglement of the cord and interference with the fœtal circulation. Now, no less an authority than Tarnier[3] reports a case as a warning against cephalic version in most cases of breech presentation. A patient had been admitted to hospital with a breech presentation, and a foot not being within reach Tarnier decided to perform cephalic version by the external method: this was done; but subsequent vaginal examination showed that a hand had prolapsed, and a little later the cord also prolapsed, and meanwhile the membranes ruptured. Tarnier admitted that it would have been better not to turn the child.

THE INFLUENCE OF CHLOROFORM UPON THE COURSE OF NORMAL LABOR.

Dönhoff[4] gave chloroform to various degrees in five cases of normal labor, and observed its influence upon the expulsive forces (uterine and abdominal muscles), as shown by the tachadynamometer. His conclusions follow:

"(1) The administration of chloroform, even in diminutive doses, exercises a retarding influence upon the progress of labor. The muscular pressure sinks to one-half of the amount of that present before the administration of the anæsthetic. In eight observations the average figures were as 13 : 7.

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[1] Centralblatt für Gynäkologie, No. 19, 1893.

[2] Arch. de Toc. et de Gynéc., May, 1893; British Med. Jour., June 3, 1893.

[3] Journ. des Sages Femmes, November 16, 1892; British Med. Journ., December 17, 1892.

[4] Archiv für Gynakologie, xlii, 2; Amer. Jour. of Obstetrics, June 1, 1893.

"(2) The expulsive force of the uterine contractions steadily diminishes during the exhibition of chloroform.

"(3) The labor pains, besides being weaker, are also more irregular during a slight anæsthesia. During deep anæsthesia the intervals between the pains are longer, and all the pains are diminished in strength.

"(4) The pains increase immediately after discontinuing the anæsthetic. The expulsive force of the contractions after stopping the chloroform, compared with the force just before its administration, is, as expressed in figures, 2 : 3.

"(5) The labor pains generally continue diminished in power for some time after discontinuing the chloroform. In one case they had resumed their normal intensity in ten minutes, while in two other cases two hours had expired.

"(6) If the action of the abdominal muscles is only slight, this action is checked entirely by a superficial anæsthesia, but soon reappears after the stopping of the chloroform.

"(7) The action of the abdominal muscles continues, but in diminished force, during superficial anæsthesia, if before the exhibition of the chloroform it was vigorous in character.

"(8) Deep anæsthesia abolishes entirely the action of the voluntary muscles.

"(9) The intervals between the pains become longer immediately after chloroform is administered, and the labor pains, besides being less intense, decrease in numbers about 25%.

"These experiments show that chloroform, no matter in what degree it is administered, exercises a retarding influence upon the progress of labor. The expulsive forces are lessened, and there is no corresponding diminution of the resistance."

INVOLUTION OF THE PUERPERAL UTERUS.

Ries [5] has studied this subject clinically and anatomically, dividing the work into two parts, of which the first deals with the question "How long does the internal os uteri remain patent?" while the second discusses the involution of the placental site, clinically considered. He bases his conclusions on an examination of 46 puerperæ from the fifth to the sixteenth day of convalescence. There appears to be no actual distinction between primiparæ and multiparæ in respect to the completion of os closure. The earliest day on which the inner os was no longer open, Ries found to be the eighth. When the lochial discharge is very profuse, the os is found to close less soon than when the discharge is scanty. On the other hand, the earlier the fundus sinks to the brim, the more surely one expects to find the os closed. After premature labor, and especially after abortion, the os closes earlier than after full-term labor.

The placental site was generally found near the inner os, and about the size of a saucer. Its surface was either only somewhat uneven and rough, or one found firm, roundish, projecting humps, which could not be separated by forcible pressure with the finger-tip; or, finally, these humps were covered with soft masses, which in some cases had spread, fungus-like, over the whole placental site. These humps are thrombi in the venous sinuses: by their varying degree of firmness one can discriminate between old and fresh thrombi. The soft covering is formed by the blood flowing over and coagulating on the thrombi from unclosed vessels at the time of placental separation. The humps and their covering, so far as they do not become organized, disappear partly [illegible] lochial discharge, partly they are cast off as small clots, and finally a part is discharged only at the next succeeding menstruation. It cannot be said with certainty just when the placental site is completely restored to the condition of the rest of the endometrium.

THE INFLUENCE OF TREATMENT OF A SYPHILITIC MOTHER, ESPECIALLY DURING PREGNANCY, UPON THE HEALTH OF THE INFANT.

Etienne [6] draws the following conclusions from the study of thirty-two cases of pregnancy in syphilitic women:

"(1) The fœtal mortality, in cases in which the mother has never been treated, is enormous, reaching 95.5 per cent. If treatment be applied throughout pregnancy, we may [illegible] immunity from this infant mortality.

"(2) Syphilis attacks the fœtus especially during the fifth, sixth, and seventh months of intrauterine pregnancy.

"(3) Paternal syphilis is less injurious to the fœtus than maternal syphilis.

"(4) The prognosis differs according to the stage of pregnancy when the mother becomes contaminated.

"(*a*) If infection occurs during the first three months, and is not treated, the mortality during the first few days after delivery reaches one hundred per cent.

"(*b*) The prognosis is a trifle better, if infection occurs during the fourth and fifth months.

"(*c*) In one case of infection at the eighth month, the child lived and was apparently healthy; in a second similar case the child was in good condition at birth, but developed symptoms of syphilis later.

"(*d*) Whenever suitable treatment was administered, the mortality was *nil*.

"(5) In no case were any unfavorable results met with from internal medication during pregnancy."

RECENT LITERATURE OF PUERPERAL ECLAMPSIA.

(1) Gerdes reports the results of a number of bacteriological investigations made by himself, with cultures from the blood, lungs, liver and kidneys of two women who died from eclampsia. Keeping these cultures in an incubator for twenty-four hours, he found colonies of bacteria resembling the bacillus of chicken cholera. Inoculations with pure cultures produced in mice convulsions, coma, and death: and he concludes that "Puerperal eclampsia is produced by a specific micro-organism found in the blood and various tissues of women suffering from this disease."

(2) Hofmeister experimented with cultures obtained from Gerdes, and believes that Gerdes's eclampsia bacillus is nothing but the bacterium of putrefaction.

(3) Haegler subjected three cases of well-marked eclampsia to a number of bacteriological experiments; but his results were not in accordance with those obtained by Gerdes, and he does not believe in the bacteriological origin of eclampsia.

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[5] [illegible]

[6] Annales de Gynécologie [illegible] ruary, 1893.

[7] American Journal [illegible]

(4) Fehling considers the theories of Gerdes, Doléris and others as unproven and improbable. He says that in four hundred cases of eclampsia, observed by Olshausen, Duhrssen, and Gusserow, albuminuria was present in ninety-eight per cent.; and that we do not need bacteriological theories to explain the etiology of puerperal eclampsia.

(5) Döderlein made bacteriological investigations in eight cases of eclampsia, subjecting the blood, urine and various tissues to a number of experiments, all of which resulted negatively. He agrees with Haegler and Hofmeister, and concludes that the Gerdes bacillus is not the cause of puerperal eclampsia.

(6) Dührssen has written an important article on this subject. He considers that blood intoxication is the most frequent cause of puerperal eclampsia, the toxic agents being kreatin and kreatinin, the elimination of which is prevented or diminished by a simple nephritis of pregnancy, by chronic nephritis, hydronephrosis, hyperæmia of the kidneys, and through a retention of urine caused by pressure upon the ureters. The kreatin and kreatinin are deposited in the cortex of the brain, and excite certain motor centres capable of producing convulsions and coma. Excitability of the nervous system, especially of the nerves of the genital organs, and strong emotional disturbances, add to the irritation produced by the altered condition of the blood. Rarely a hyperæsthetic nervous system may in itself produce a reflex eclampsia.

[The weight of authority, therefore, discards a microbic origin of eclampsia, and for the present, certainly, the theory of renal insufficiency with central toxæmia holds good.—Rep.]

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular meeting, April 8, 1893, the President, **Dr. Charles M. Green**, in the chair.

Dr. F. B. Harrington, for the Committee, read resolutions on the death of Dr. C. P. Strong, which were published April 13th, in the *Boston Medical and Surgical Journal*.

An account of Dr. Strong's last illness and the postmortem results were given by Drs. F. B. Harrington, W. F. Whitney and A. K. Stone.

Dr. Abbot said that the lamentable death of our beloved associate brought very forcibly to one's mind the question whether it is possible for a septic fluid to be absorbed by the skin without any lesion of the surface. Such occurrences, he thought, must be extremely rare, but he could testify from personal experience to their possibility.

Some years since, after making at the Massachusetts General Hospital an autopsy in a case of double empyema, in which he removed the lungs without protecting his hands in any way, he was taken within a few hours with severe chilliness and a feeling of general *malaise*, which were followed at once by an eruption on both hands of a general dermatitis, which appeared in the form of bright red, swollen patches, from an inch to an inch and a half in length, and half an inch to an inch in breadth, mostly on the dorsal surface, accompanied by a general uncomfortable sensation of fulness rather than pain, and much swelling of the fingers and thumbs, especially of the left hand. He remembered particularly that the left thumb was at least a quarter larger than natural. The symptoms, both general and local, passed off in two or three days without special treatment, except cooling lotions. The septic poisoning in this case could only be explained by a general penetration of the skin, as there was no lesion anywhere. As to the question whether such an absorption could have taken place merely by the way of the ducts of the glands of the skin without penetration of the epidermis, Dr. Abbot inquired whether Professor Whitney could give the Society any fresh information on the mooted question of the possibility of fluids passing through this membrane.

Dr. W. F. Whitney said that there was no doubt but that chemical products of bacterial life could be absorbed through the unbroken skin, producing symptoms of septicæmia. This had been done experimentally in animals. As to the absorption of bacteria themselves through the unbroken skin, this is doubtful, although they may get into the sweat glands and hair follicles, and from these gain an entrance into the system.

Dr. J. C. Warren reported

A CASE OF DIFFUSE HYPERTROPHY OF THE BREASTS.

M. C. G., twenty-three years of age, was born in Newburyport. Her father and mother died of phthisis. Her general health has always been good. She was confined three years ago with her first child. The labor was normal and she made a good recovery.

Her breasts have always been large. At the time of entering the hospital she was six months advanced in pregnancy. During the past month the fœtal movements have been distinct. The breast began to enlarge six weeks before a lump made its appearance first in the right breast after which there was a general enlargement of the whole breast. This was followed by the same growth in the left breast. Both axillæ were occupied by soft, almost fluctuating, swellings, but there is no redness, or other symptom of inflammation. The left breast measured twenty-seven inches in circumference; the right twenty-six inches. The areolæ are large and deeply pigmented. The patient appeared to suffer no pain or inconvenience from the growth. According to Billroth these tumors consist of fibrous tissue principally. They belong to the class of growths sometimes called cysto-sarcoma. The hypertrophy usually begins at the time of puberty or a year or two later. The growth takes place rapidly and is completed within two to four months. In one of the cases reported by Billroth the growth began again at the time of puberty.

In the case recently reported by Dr. Porter,[1] the largest breast measured thirty-eight inches in circumference and the smaller twenty-eight inches. The microscopical examination by Dr. Whitney showed the growth to be diffuse intra-canalicular fibroma; therefore, not a true hypertrophy of the breast. Dr. Porter reports sixteen cases operated upon with only one death. The operation was amputation in all cases. Barton has collected in all thirty-four cases of this affection.

Since this report was made the patient has been confined, and the breasts have, according to Dr. W. F. Anthony of Bradford, diminished in size.

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[1] Boston Medical and Surgical Journal, March 3, 1892.

A CASE OF CONGENITAL HERNIA OF THE LIVER.

The mother was married five years ago. Her first child was born three years ago, but died aged four months of cholera infantum. This child was born November 14, 1892. Labor began at 6 the evening before and was completed at 10 a. m. and was normal in every respect. Dr. G. W. Nickerson, of Stoneham, who was present at the birth of the child, states that he noticed quite a tense bladder-like tumor expanding the umbilical cord at its point of insertion. The child was brought immediately to the hospital and an examination showed that there was an umbilical hernia into the covering of the umbilical cord.

An operation for its reduction was performed twenty-four hours after birth. The coverings of the cord were dissected off from the tumor with some difficulty as they were adherent at several points. It was then found that the contents of the hernia were the liver. The umbilical vein and hypogastric arteries being tied, the cord was removed and the liver pushed back with considerable difficulty through the umbilical opening. The liver was about the size of an mandarin orange. The wound was closed with six silk sutures. Union took place partly by first and partly by second intention. There has been no return of the hernia at the time of writing (April 7th) and the child is in good general condition with the exception of an eczema and a right inguinal hernia.

Dr. W. L. Richardson said there had been two cases at the Boston Lying-in Hospital of hypertrophy of the breasts, and in neither case was there any milk.

Dr. T. M. Rotch said Dr. Warren's case of hernia of the liver reminded him of a case reported in the English journals, where several abdominal organs were found in the rupture.

Dr. F. B. Harrington said that the operation in this case shows how well prolonged etherization is borne in young infants if done carefully. He had operated on an infant of two weeks for webbed fingers, ether being given continuously for two hours by Dr. Scudder. Very little ether was required, a few drops only at a time, in the way that chloroform is given to adults. The infant showed no ill effects of the prolonged etherization.

Dr. Edward Reynolds mentioned an operation for the relief of imperforate rectum he had performed on an infant of a few days, where prolonged etherization was needed, and without ill effects as far as the ether was concerned.

Dr. Rotch remarked that fifteen or twenty years ago it was often thought unsafe to give ether to infants.

Dr. J. Chadwick said that in the first volume of the Proceedings of the Gynæcological Transactions he had given the result of the dissection of five cases of umbilical hernia in infants, in some of which he believes the liver was present, as in Dr. Warren's case. In the case of the Siamese twins a portion of the liver was found together with an extensive blood circulation in the band uniting the twins.

Dr. Warren said that his case perhaps differed from others in the fact that the liver and nothing else, came out in the rupture. It was a case of wandering liver. His own experience had been that children bear etherization remarkably well.

Dr. T. M. Rotch reported orally

A CASE OF INTERNAL HYDROCEPHALUS,

in a child of four years, where recovery was complete with the exception of total blindness.

Dr. F. B. Harrington reported a case of

ECTOPIC PREGNANCY,

where he had recently removed the left Fallopian tube in which the pregnancy had taken place. Two years previously he had operated for pregnancy of the right tube.

Regular meeting, May 13, 1893, the President, **Dr. Charles M. Green**, in the chair.

Dr. F. W. Draper reported

A CASE OF CRIMINAL ABORTION,

that had come under his observation as medical examiner. A single woman, two months pregnant, went to an abortionist on or about the 7th of January. She grew very sick and died on the 13th of January, and Dr. Draper was called upon to make the post-mortem examination eight hours after death. There was a profound general icterus. There was a foul discharge from the vagina with diphtheritic patches about the introitus. On opening the abdomen a general diffuse, purulent peritonitis was found, with large, soft spleen and gray liver and other evidences of general septic poisoning. The os uteri was patulous and there were diphtheritic ulcerations about the os. The uterus measured four and three-quarter inches in depth. Near the os there was distinct evidence of puncturing with some sharp instrument. Higher up in the uterus was another puncture one-half an inch deep, while at the fundus was a hole with sloughing edges, through which three fingers could be easily passed. There was evidence in the uterus of pregnancy, as well as a clearly defined corpus luteum in one ovary. Death was clearly due to peritonitis, following instrumental puncture of the uterus. The abortionist was arrested and, what rarely follows in these cases, was convicted. The question arose in the course of the trial as to whether it would be possible for the patient to puncture the uterus herself. Dr. Draper had thought this impossible, as the pain would be so great as to cause the patient to desist.

In the discussion which followed, several of the members suggested that the uterus was comparatively insensible to pain, bearing curetting, for example, and even accidental puncture during that operation without suffering, so that as far as pain was concerned that would not prevent extensive puncture.

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Recent Literature.

The Obstetric Examination: A Short Guide for Physicians, Students of Medicine, Midwives and Students in Midwifery. By Prof. E. Credé, M.D., and Prof. G. Leopold, M.D. Edited by J. Clifton Edgar, M.D. 8vo. pp. 16, with five cuts. New York: L. Hydel. 1893.

This little treatise is a reprint of two chapters from the fifth edition of the "Text-Book of Obstetrics for Midwives," published by the authors in 1892. It is presented in this accessible form with the commendable object of "giving the widest possible publicity to the most recent experiences concerning the prevention of puerperal fever." The preface states that these two chapters "contain the external examination and the antiseptic regulations, which are to be regarded as new and of fundamental importance." The great and fundamental importance of these teachings no modern obstetrician of note will question; but we can hardly look upon them as new. The value and the technique of the external examination were fully taught in Vienna, to our personal knowledge, some fifteen years ago; and both Chadwick and Mundé, in this country, wrote on the subject, essentially as now, at least as long as fifteen years ago, if our memory serves. Moreover, rigid asepsis has been taught and practised in the best schools and lying-in hospitals in this country for the past eight years.

It is not to be denied, however, that the value of the external examination, as a means of restricting the necessity for frequent vaginal examinations, and thereby diminishing the opportunities for septic infection, is not as fully appreciated as it should be: nor are the rules of rigid asepsis carefully carried out by any considerable proportion of physicians who were educated more than eight or ten years ago. We welcome, therefore, this and all similar treatises which will spread the doctrine of the heterogenetic origin of puerperal infection. We cannot agree with the authors (page 15) that "it is nothing less than criminal to try to assist in the stage of dilatation by attempting to stretch the cervix with the fingers and to push back the anterior lip of the cervix." While agreeing that a normally progressing first stage should not be interfered with, we know that the above procedure in some cases is distinctly indicated, and is unattended with danger, if skilfully and aseptically performed.

As a whole, we commend the teachings of this monograph highly, and bespeak for it an extensive circulation.

A Hand-book of Local Therapeutics. By ALLEN, HARTE, HARLAN and VAN HARLINGEN. Edited by HARRISON ALLEN, M.D. Philadelphia: P. Blakiston, Son & Co. 1893.

This book describes the local action only of the more important drugs under four heads: general surgery, diseases of the skin, diseases of the ear and air passages, and diseases of the eye. The pharmaceutical and physiological action, as far as it applies to external medication, are given for each drug, and by the omission of everything pertaining to internal therapeutics, it has been possible to condense in such a way as to make a hand-book easily referred to. It will be found very useful and convenient to the general practitioner, as well as to the specialist, in one of its four departments, but it might very probably have been found of more general use if these departments had been separated, and four separate publications sold. The book is well prepared. Where the use of a drug for a particular purpose is recent, the authority is mentioned in full.

Kirke's Hand-book of Physiology. By W. MORRANT BAKER, F.R.C.S., and VINCENT DORMER HARRIS, M.D. Thirteenth edition. Philadelphia: P. Blakiston, Son & Co. 1892.

The thirteenth edition of this well-known handbook does not need an extended notice. This edition has been thoroughly revised and somewhat enlarged It is eminently well fitted as a text-book for students or for interesting reading for the general practitioner

THE BOSTON

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CAUSES OF LONGEVITY.

In this age of conventions and organizations, the very aged have not been forgotten. Arrangements have been made by the editorial staff of *La Science Médicale* for a convention of old men at Paris. No one under ninety years old will be eligible, and every one offering himself for membership must show proof of the time and place of his birth. Travelling and hotel charges are to be defrayed by the management of the congress, and good medical care is promised, that the guests may undergo no improper strain or exposure. Prizes are offered, and will be presented by the presiding officer. The president is a hearty centenarian who has practised medicine at Havre for seventy years. No restrictions as to nationality are to be placed upon the delegates, but extremely old persons are not expected from countries outside of France. At the time of the last census about 200 persons were reported in France as being 100 years old and over. A considerable portion of these were residents of departments bordering along the Pyrenees.

The foregoing statement leads us to consider, briefly, some of the conditions and circumstances which are attendant upon the attainment of advanced age, as gathered from observation of our own population. By the Massachusetts State Census of 1885, it appears that there were then living in the State 1,016 persons between the ages of 90 to 94 years (inclusive), 245 were between the ages of 95 and 99 years, and 43 persons of 100 years and over. A very small portion of those living between 90 and 99 years arrive at, and pass the age of 100.

The number of patients who have died in each year, having been recorded as attaining the age of 100 and over in Massachusetts, has been about 20 annually, or about one in 100,000 population, a ratio which considerably exceeds that of France.

In the Forty-ninth Registration Report of Massachusetts (1890), the compiler presents the statistics of 203 persons who were reported as having died during the ten years (1881-1890) at the age of 100 and over. Of this number, 153 or 75.4 per cent. were females. (By the State census of 1885, the number of females living over 80 years of age was nearly double that of males.) The greater exposure of men to accidents, to weather agencies, to the constant strain of business life, to the anxiety of providing for the family, all tend to shorten the life of men. The deaths by accident among men are more than threefold greater than among women, and men commit suicide in about a threefold ratio as compared with women.

Of this number of 203 deaths of centenarians, 115 or 56.7 per cent. were of foreign birth; 184 or 90.6 per cent. were married. It should not be inferred, however, from this, that married life is necessarily conducive to longevity, since at least nine-tenths of all persons who arrive at advanced age (80 years or more) are married. Of this class, a large part are widowed; and the number of widows of 80 years and over is about three times as great as that of widowers in Massachusetts.

In scrutinizing these data more carefully, there are found to be other considerations, which have an important bearing upon the attainment of advanced life. Of these 203 persons, more than half were born in foreign countries, chiefly in Ireland and the British Provinces. Of the early history of these persons, and of the accuracy of the statements relative to their ages little can be known, since their birth registers are not readily accessible. There were, however, eighty-four centenarians who were born in the United States, and of whom we have a more definite account. Two-thirds of these were born in Massachusetts, and the remainder in other States, mostly the adjoining New England States. A considerable number of these (twenty-one) died in the same towns in which they were born; and these were not mostly cities, but such small, quiet, rural towns as Seekonk, Williamsburg, Templeton, Leicester, Halifax, Essex, Bernardston, Duxbury, Holland, etc. In each one of twenty-four other instances a centenarian was born in one town and died in an adjoining town; and in nearly all of these, each town was a small agricultural community, free from the turmoil and bustle of city life. For example: one was born in Sturbridge and died in Brimfield; another was born in Goshen and died in Chesterfield, etc. These are places remote from railway communication, and are rarely heard of, outside of each quiet circle of rural life. It does not appear that any of these centenarians were burdened with great wealth, or that many of the number were excessively poor. One only is reputed to have filled a pauper's grave at Tewksbury.

Aside from the very important and controlling influences of inheritance, of diet, and of temperate habits, the points to be learned from these few statistical data, are that longevity is promoted by a quiet, peaceful life, in a retired and rural community, where there is freedom from nervous strain, and worrying, and excessively laborious toil. The business man, with increasing cares and responsibilities, the mill-operative toiling hard to keep together the souls and bodies of himself and his family, the politicians, the hard-working professional men are not the chief contributors to the centenarian ranks. Dr. Holyoke, indeed, became a centenarian, but his example has rarely been followed by his professional brethren.

English statistics confirm some of the foregoing statements. The Registrar-General stated, in 1871, that the number of persons in England who arrived at the age of 100, averaged 78 annually for the preceding ten years, and of this number 21 were men and 57 were women.

Men of science have occasionally expressed doubts as to the evidence of any human life having exceeded a century. But the testimony of town and parish records too often confirm the fact to admit of reasonable doubt. One insured life closed at the age of one hundred and three, in which all the necessary documentary evidence was produced in confirmation of the accuracy of the statement.

The conditions and environment which favor long life appear to be a long-lived ancestry, mental tranquility, sobriety, freedom from care and anxiety. It would, therefore, seem to be a hazardous undertaking to summon a congress of extremely aged people to the noise and tumult of a gay and crowded city, many of whom have probably never traveled far beyond the confines of the rural villages in which they were born.

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THE MILK SUPPLY OF BOSTON.

The annual report of the department for the inspection of milk and vinegar, shows a very satisfactory condition of the milk-supply of the city, and especially a satisfactory system of inspection by which the purity of the milk-supply is insured. Although this system of inspection has existed for several years, weak spots have been strengthened by more or less recent legislation and decisions of the courts. An important advance was obtained in the decision by the Supreme Court, that the milk laws apply to sales by hotel keepers of milk to be drunk on the premises. The inspectors found a very large proportion of samples obtained from these establishments to be of a very poor grade — skimmed, watered and colored. This poor milk was especially found in restaurants frequented by the poorer classes. Many prosecutions were undertaken against these restaurant keepers, resulting in nearly every case in a conviction, the result of which has been a very speedy improvement in the quality of the milk sold in restaurants throughout the city. A large number of dealers during the hot weather have been convicted of mixing different preservatives with the milk. These preservatives are manufactured by the wholesale and sold through the country, the contents often being unknown to the milkmen who buy them. The common preservative is a substance made of a mixture of boracic acid and borax, and its presence in milk is easily detected. An important decision has recently been given by the Supreme Court, on the question whether cream is a form of milk, and whether the milk laws are applicable to it? The decision sustains the government in its prosecution of those who were complained of for selling poor cream.

An appendix to the report includes the laws of Massachusetts in regard to the inspection and sale of milk, and the important decisions of the Supreme Court under these laws. The decision previously mentioned in regard to cream makes it illegal to sell cream containing a foreign substance, in this case boracic acid, under the same law as applies to milk.

A person may be convicted of selling adulterated milk, although he did not know that it was adulterated. The constitutionality of the law is confirmed, providing that if the milk shall be shown upon analysis to contain more than 87 per cent. of watery fluid, or to contain less than 13 per cent. of milk solids, it shall be deemed to be adulterated. If milk, reduced below this standard by the subtraction of the cream, be offered for sale, it must be sold as skimmed milk, and not as milk. Skimmed milk must contain at least nine and three-tenths per cent. of milk solids, exclusive of fat, and the vessels containing it must be plainly marked "Skimmed Milk." In the case of skimmed milk, the defendant would be liable, unless the buyer had notice or knowledge that the milk was skimmed milk. The addition of annotto, whether injurious to health or not, is punishable under the statute.

The inspection and regulation of the sale of vinegar and oleomargarine is under the same department. In the case of the latter, the law provides that whoever sells oleomargarine or any other imitation of butter, shall have a label in plain sight upon the package, and that all carts peddling such articles, and all shops in which they are sold, shall show a sign announcing the fact.

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THE CHOLERA.

The East still continues to be the chief seat of the cholera. In Marseilles, Toulon and some of the smaller towns of the French Riviera a few new cases occur from day to day, but no alarm is felt as yet. In Spain there has been a small outbreak in the province of Corunna since the 25th of July, but no official proclamation has been made. On July 28th one case occurred at Altona, but with that exception no cases have been reported from last year's seat of the plague. Smyrna has been declared infected since July 25th, though the number of deaths has been small. In Buda-Pesth the precautions taken on the first appearance of the cholera July 12th, have been successful, and only a few sporadic cases have occurred. In the provinces of Turkey there has been no special increase in the number of cases reported. Russia has not fared so well. While the epidemic in Moscow has been confined chiefly to the poorer classes with an average of about fifteen new cases a day, it has steadily increased in the provinces, especially in Podolia and Toola, where there have been nearly five hundred deaths so far.

The condition at Mecca is as bad as ever and becoming worse. Since June 8th there have been over 6,000 deaths in that city alone. In Jedda the death-rate is equally high; and the combined mortality of Jedda, Mecca and Minah is already over 15,000. The daily death-rate is about 1,000, and the pilgrims still continue to arrive and depart. It is estimated that there are now 200,000 of the faithful gathered in the vicinity of Mecca. The quarantine station at El Tor, which accommodates 11,000 only, is quite inadequate for the 40,000 pilgrims on their way. As they arrive worn and exhausted by the journey, they are in no condition to stand out against the disease. The death-rate is already reported to be large, but no figures are given.

The only point of immediate danger to our own country at present is Naples. The cholera made its appearance there July 16th, with four fatal cases; and a week later was reported to be prevailing quite generally, though not recognized officially by the government. So far there have been about 400 cases and nearly 200 deaths. Telegraphic reports state that the daily number of cases is not increasing, and the number of deaths is less.

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MEDICAL NOTES.

Another "Diploma Factory." — "The Preparatory Medical College of New York" has ceased to exist since the arrest of the entire faculty and treasurer, a Dr. W. M. Rew, who sold diplomas for twenty dollars apiece.

Yellow Fever. — Reports from Santos show that the yellow fever is still widely prevalent. The daily mortality is among the hundreds. Business is at a complete standstill, and the hospitals are totally inadequate to care for the sick, who die faster than the bodies can be buried.

A New Medical School. — A new medical school has been organized and chartered in Richmond, Virginia, to be known as The College of Physicians and Surgeons. Dr. Hunter Maguire is the President of the Board of Directors.

A New Columbarium. — The United States Cremation Company has just dedicated a new columbarium in connection with its crematory at Fresh Pond, Long Island. It is a two-story building of white marble and contains six hundred niches for cinerary urns.

A Case of Blue-Illness. — Pic recently showed the Society of Medical Sciences of Lyons, the heart of a patient who died of cyanosis at the age of forty-two years. The cavities were dilated, the walls hypertrophied, and the auricles communicated by an opening large enough to admit a wheat straw. During life the man had been subject to bronchitis, and to cyanosis upon slight causes. Bleeding during attacks of cyanosis had relieved the patient and prolonged his life.

Hypnotism in Russia. — Hypnotic suggestion as a therapeutic remedy has received official sanction in Russia. The government has announced that physicians may have the right to apply hypnotism in the care of the sick, on the sole condition that they report to the authorities each case of its application with the names of the physicians present at the time. All announcement of "private sittings" is forbidden.

NEW ENGLAND.

The Garbage Crematory in Lowell. — For some time past a crematory of garbage has been in operation in Lowell and there seems to be much difference of opinion about its merits and defects. At a meeting before the Board of Aldermen, a petition was discussed, claiming that the odors from the crematory were offensive, and evidence was brought to show that its presence was detrimental to the health and religion of the community. This latter accusation was founded upon the allegation that the odor in a neighboring church was so bad that it was impossible to gather a congregation in it. The petitioners swore to six different kinds of odor, and about as many diseases caused by them, but this evidence was somewhat weakened by the defence, which showed that one of the principal objectors had entered a similar complaint against a glue factory some years ago, which had finally been decided in court to be unobjectionable and which is still working. An agent of the Board of Health gave evidence on the part of the defence that he had gone to the top of the crematory and smelt the smoke as it issued from the chimney, not only without injury to his health and his religion, but even without any unpleasant sensation. The Board finds it impossible to identify all of the numerous odors described, but believes that none of them came out of the crematory with the smoke. The matter is still under consideration.

NEW YORK.

State Board of Health Reports. — At a meeting of the State Board of Health held July 27th, Dr. Florence O'Donohue, of Syracuse, was elected President of the Board in the place of the Hon. Thomas Newbold, resigned. The bulletin of the Board states that the death-rate for June was 17.50, while that for the six months ending June 30th was 21.30. Four thousand three hundred deaths are attributed to the epidemic of influenza which began in March and is now practically ended.

The Electrocution of Taylor. — The execution of the murderer Taylor at Auburn prison on July 27th was accomplished in a very unsatisfactory manner. Immediately after the first shock, which rendered the man unconscious but did not destroy life, the armature of the dynamo became burned out and the instrument was consequently useless. It therefore became necessary to make connection with the Auburn city electric-lighting plant, and there was a delay of an hour before the second, and successful, application of the current. Among the spectators on this occasion was Dr. Nettie E. Jenkins, who was the first woman to witness an execution by electricity. She will probably not be anxious to witness another very soon.

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Miscellany.

THE STATE BOARD OF HEALTH EXHIBIT AT CHICAGO.

Among the interesting hygienic exhibits at Chicago, that of the Massachusetts State Board of Health is particularly valuable. Besides the diagrams and charts illustrative of the statistics of life and health and comparative mortality, of diseases and epidemics, and the general work of a well organized Board of Health, there are several features of the exhibit which are especially interesting. The models of the Lawrence Experiment Station and the apparatus there used for study and research in municipal hygiene; the maps and plans of the Metropolitan Sewerage System; and photographs of the sewerage fields already in practical operation, gives one a new sense of the extent and importance of proper, thorough control of public sanitation. The Department of Food and Drug Inspection, showing types of injurious or fraudulent adulterations found in this State, is well worth a visit, if only to see the dishonest ingenuity of man.

The display of the official reports and blanks which are used for the routine work of the Board, are full of suggestion for physicians from small towns where local sanitation is just beginning.

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METATARSALGIA.

Bradford,[1] in his article on metatarsalgia, spoke of the desirability of further evidence upon the nature of this affection. Morton reports six new cases. It will be remembered that Morton [2] accounts for the severe and paroxysmal character of the pain by referring to the anatomical relations of the plantar nerves to the bony structure of the foot. Owing to the setting back of the fourth and especially the fifth metatarsal joints they have more lateral motion than the other three toes. The base of the first phalanx of the little toe is on a line with the joint of the fourth, and the head of the fifth metatarsal bone when subjected to lateral pressure is, therefore, jammed against the neck of the fourth metatarsal bone or rolls under it to a slight degree, thereby pinching the branches of the plantar nerve distributed to the joint.

It is this pressure of a tight boot which demands the instant relief so characteristic of the affection. The frequent occurrence of a slight degree of this neuralgia may be relieved by careful selection of the shoes worn by the patient. Firm low-heeled shoes which allow no slipping of the foot may be sufficient to give relief. The obstinate and severe cases, however, yield only to operative treatment. According to Morton this should consist always of excision of the metatarso-phalangeal articulation which is the seat of pain, or of amputation of the toe above the joint. This view of the cause and treatment of metatarsalgia is opposed by Hoadley [3] on the ground of clinical and anatomical experience. He points out that while the fourth and fifth metatarsal bones are shorter than the others, the head of the fifth is not sufficiently far back to allow it to fall against the neck of the fourth, and although the outer bones are movable and can roll up and down it is not possible for them to slide above or underneath as described by Dr. Morton.

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[1] Boston Medical and Surgical Journal, [illegible]
[2] Annals of Surgery, [illegible]
[3] Chicago Medical [illegible]

"Another reason for believing that this supposed cause for the neuralgia is not correct, is that the nerve which supplies the toe, and the one that has been accepted as the neuralgic nerve, could not possibly be implicated if one bone pressed upon the other, as described, as the nerve lies below the transverse ligament and not between the heads of the metatarsal bones. Without regard to the length of the metatarsal bones, it is quite possible for the nerve to become injured by lateral compression, as the foot will fold upon itself so as to involve the digital nerve. It being the digital nerve that is involved, the articulation, or the articular nerves, have but little to do with the painful affection."

Accordingly, the author advises the trial of thick leather or of metal insoles to prevent the rolling together of the foot. If the neuralgia is persistent, he recommends the division of the internal branch of the external plantar nerve, the one usually affected. His clinical experience bears him out in this belief as the report of six cases goes to show. The only case not relieved by proper shoes was at once cured by excision of the nerve on which was found a small neuroma. The advantage of being able to offer a patient a simpler operation than excision of a joint of the foot is worth consideration.

◆

DIET IN GLYCOSURIA.

Whatever the underlying cause of glycosuria may prove to be, there are certainly two well-marked clinical forms of the disease. The simpler one, in which the glycosuria is dependent upon and commensurate with the ingestion of saccharine or starchy foods, responds well to a rigid diet, and by careful regimen may be entirely controlled. The graver form in which the sugar seems to be formed in the body from the albuminoids, is controlled with great difficulty even by the most rigid diet. Schmitz,[1] after careful study of several of these cases, found that the excretion of sugar, instead of being diminished by a strictly nitrogenous diet, was increased so soon as the meats and broths were in great excess over the carbohydrates.

Guided by this fact and the great distaste for nitrogenous foods which the patients all had, he changed the character of the diet. Meat, eggs and fish were given in small amounts only; and he ordered more varied foods, containing fats, but scanty albuminoids and starches. Under this change the patient's strength, appetite and weight increased, and the sugar excreted diminished in some cases four per cent.

The diagnosis between the two forms is made particularly upon the time of sugar excretion. In the simpler form the urine contains sugar chiefly by day and shortly after eating; the urine which is passed early in the morning before breakfast containing little or no sugar. In the grave form, the sugar being formed more independently of the diet, the urine shows less difference between night and morning; and it may usually be considered when the urine contains sugar eight hours after the taking of food, that the case is of the graver form and that the sugar is formed from the albumens.

In this latter class he gives the following diet:

For Breakfast: Preferably, cocoa, when pure and unadulterated, on account of its fat; a little milk; and either twenty to thirty grammes of rye, or forty to fifty of white bread. If the cocoa is not liked, the patient may have tea or coffee, and an egg-cake made as follows: two or three teaspoonfuls of oatmeal, one egg, and two teaspoonfuls of sour cream are beaten together, salted, and baked with a little fat or bacon.

For Lunch: a glass of wine, and a sandwich of twenty to forty grammes of bread and some sardines.

For the Noon Meal: a broth with a little rice or vermicelli (two pounds of meat should furnish enough broth for three meals); a little fish; potatoes, if not meally; vegetables very sparingly — as young beans, spinach or cabbage — may be given. Potato salad is often much relished, as are cakes made of raw grated potato-meal, as above described.

For Tea: a meal as at noon, but always varied. Dry wine may be allowed.

He reports three cases so treated with a scanty nitrogenous diet, in which the sugar diminished very much, although the daily ingestion of bread was nearly one hundred grammes. Under this regimen also the acetons disappeared from the urine.

Saundby[2] offers the following receipts for diabetic food, which he has found palatable and not expensive.

Almond cakes: One pound of ground almonds; four eggs; two tablespoonfuls of milk; a pinch of salt. Beat up the eggs and milk, and stir in the almond flour. Bake in flat tins in a moderate oven for forty-five minutes.

Cocoanut cakes: Three-fourths of a pound of fine dessicated cocoanut: one-fourth of a pound of ground almonds; six eggs; half a cup of milk. Mix as in the other cake, and bake for twenty-five minutes.

Both these cakes keep well for a week.

Blanc-mange made of Iceland moss, and sweetened with saccharine, is absolutely free from injurious constituents, and very palatable.

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THE NON-OPERATIVE TREATMENT OF SALPINGO-OVARITIS.

The importance and proper relations of the non-operative treatment of salpingo-ovaritis are well shown in a recent paper by Dr. Shoemaker, of Philadelphia.[1]

Certain cases of pelvic disease are, of course, unmistakably surgical. A large number of women, however, have of late years been treated most lavishly by surgical procedures, have desired or allowed their uterine appendages removed for chronic tubal inflammation, when with proper and patient treatment the operation could have been avoided.

The questions chiefly to be considered in any given case are:

(1) Will the woman be improved by the operation, and ought it to be done in her case?

(2) What are the prospects, temporary and permanent, of systematic non-operative treatment?

The first question will be answered differently for each case. The social, personal and physical conditions of the patient are all factors to be considered. The long and tedious road of douching and massage cannot be opened for the working woman, whose right to an early operation is far greater than that of a woman of riches and full leisure. The domestic undercurrents are by no means to be ignored. There are a small number of cases in which the adhesions are old, firm and numerous, and the cause of obstinate reflex disturbances. These should be operated upon early, where they occur in women dependent upon their own labor for existence. At first examination, however, it is not easy to distinguish old adhesions from firm, new ones, which may, however, be absorbed.

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[1] Deutsche Med. Woch., 1893, No. 27.

[1] Annals of Gynecology and Pædiatrics, vol. vi, No. 10.

[2] Birmingham Medical Review, May, 1893.

The second question can be answered more categorically. In the author's experience no case of chronic pelvic inflammation can be cured permanently by non-operative treatment. There will always be the line of weakened resistance and the focus for a lighting up of the old trouble. It leads to far better judgment and treatment of a case to have this point well understood; it is always a question of relative palliation.

Under systematic treatment, faithfully carried out, both by patient and physician, the patient's health can be so restored, the attacks of inflammation so lessened and alleviated, that her life may become of comfort and usefulness. The rest-cure, massage, careful tamponing and douching must be unremitting. Tampons of elastic wool were found more satisfactory if covered with a thin layer of cotton. Where much tenderness is found, a useful addition to the well-known boroglyceride tampon is ichthyol, which when made into an ointment with four parts of lanolin, may be put on the tampon against a tender region. This substance seems to have a decided influence over subacute inflammation, and serves to lessen tenderness very rapidly.

A true conservative treatment, which is not an easy dalliance has much promise, and should receive greater attention than it has had heretofore.

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VISCERAL PHLEBOTOMY.

Harley[1] claims great success in the treatment of hepatic inflammation by withdrawing blood directly from the congested liver. His method consists in piercing the viscus with a long trocar about seven millimetres in diameter, so as to "wound one or more blood-vessels of sufficient caliber to yield a free stream of blood." After sufficient blood is withdrawn the finger is held over the mouth of the trocar till the stream of blood has clotted back into the viscus. The trocar is then withdrawn and the wound closed by adhesive plaster and a bandage applied.

He reports successful treatment by this means of several cases of chronic and acute hepatitis, and has seen it applied to pulmonary congestion. He seems to have met with no cases of subsequent internal hæmorrhage, a danger not to be disregarded, for his only reference to this occurrence is indirect. He says, that on withdrawing the instrument it is important to get the clot in the canula to break off from that in the canal so as to leave the latter behind, in order that by its presence there it may prevent any oozing of blood from the organ. This is best done by giving a slight twist to the canula at the moment it is felt to leave the organ. The external puncture is closed by adhesive plaster and a flannel bandage bound firmly over it to bring the internal surface of the parietes against the wounded organ, to prevent the possibility of accidental internal hæmorrhage.

It is hardly probable that the recommendation to extend this procedure to all the viscera, as the spleen and kidneys, will meet with a wide acceptance.

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THERAPEUTIC NOTES.

The Care of Catheters. — Gouley[1] gives the following directions for the care of catheters. Web catheters should be kept at full length to prevent cracking. In cold weather they should be warmed slightly before being shaped for use. In spite of good care web catheters are liable to harden in a few years, especially if not in constant use: they then lose their shape, even if they do not crack, and should be discarded. After use they should be carefully dried inside as well as out, and kept wrapped in *dry* antiseptic gauze in metal cases. Soft-rubber catheters should be kept at full length in *moist* antiseptic gauze, away from the air, as exposure to it causes the rubber to become dry and brittle. The life of a soft-rubber catheter is short at best, but when in daily use and annointed with fatty lubricants, they swell and become soft and useless in a few weeks. Where continued daily catheterization is necessary, it is best for the patient to have a set of ten or twelve catheters and to use two each day, so that the same catheter may be carefully dried and sterilized and used only every fifth or sixth day. Both web and rubber catheters are much injured by fatty substances, and even by vaseline, though to a less degree. The lubricant should be unirritating to the urethra and contain no fat or free alkali to deteriorate the varnish of web catheters or to soften the rubber catheters. The following formula has been found satisfactory: Three hundred and sixty grains of white castile soap, powdered, are added to two fluid ounces of boiling water and stirred until a homogeneous jelly is formed. Enough hot water is then added to bring the whole up to 1,200 grains, after which the mixture is strained through cotton gauze and one-half a fluid-ounce of tincture of quillaja poured into it. This mixture when cool has the consistency of honey. A little carbolic acid may be added and the lubricant kept in collapsible tubes.

Piperazin in Uric Acid Diathesis. — Witzack reports the following conclusions from the use of piperazin in cases of uric acid diathesis:

(1) In all cases the diuresis was noticeably increased; the daily amount in one case of uric acid arthritis being more than doubled.

(2) The specific gravity of the urine was always lowered; the urine was acid, but never neutral or alkaline.

(3) The appetite was not affected, nor was there any general disturbance from the drug.

(4) Subcutaneous injection even of the smallest doses was always painful and accompanied by considerable infiltration around the point of injection. Abscess formation was avoided with great difficulty.

(5) The salts of the drug were more reliable than the drug itself since they are less hygroscopic and allow a more accurate dosage.

(6) The drug should be given in sufficiently large doses, one gramme a day, over a considerable period before the effect can be rightly estimated as some patients respond slowly.

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[1] Journal of the American Medical Association, vol. xxi, No. 4.

[1] New York Medical Journal, [illegible]

METEOROLOGICAL RECORD.

For the week ending July 22, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...16	29.72	79	[illegible]	68	71	52	62	S.W.	W.	17	11	C.	C.	
M..17	29.86	75	84	69	[illegible]	72	[illegible]	W.	W.	3	4	O.	O.	
T..18	29.88	78	87	70	[illegible]	81	75	S.W.	S.	6	15	O.	R.	0.23
W..19	29.98	74	81	67	66	66	[illegible]	N.	N.W.	8	6	C.	C.	0.02
T..20	30.03	70	[illegible]	59	48	[illegible]	54	N.	S.W.	7	17	C.	C.	
F..21	29.88	[illegible]	88	[illegible]	[illegible]	52	54	W.	W.	10	10	C.	C.	
S..22	[illegible]	78	[illegible]	66	57	88	72	W.	N.W.	12	8	O.	O.	.38
☞	29.90		86	66			64							0.63

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 22, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal Diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	1257	793	43.36	6.96	37.12	.16	3.36
Chicago	1,438,000	812	436	34.92	5.40	29.16	1.44	1.56
Philadelphia	1,115,562	677	413	41.25	8.25	34.85	.90	1.95
Brooklyn	978,394	582	372	44.52	9.35	40.29	.34	.51
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	204	77	24.50	12.25	17.64	—	3.92
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	146	71	28.98	5.52	18.63	4.14	3.45
Cincinnati	305,000	148	76	25.46	13.40	20.10	2.01	2.68
Cleveland	290,000	133	80	51.00	3.00	40.50	3.00	2.25
Pittsburg	263,709	142	85	42.70	2.10	32.20	2.80	2.10
Milwaukee	250,000	80	40	25.00	5.00	15.00	1.25	5.00
Nashville	87,754	26	10	19.25	11.55	3.85	7.70	—
Charleston	65,165	47	13	21.30	10.65	10.65	2.13	—
Portland	40,000	13	3	15.38	7.69			15.38
Worcester	96,217	44	21	34.05	6.81	29.51	—	—
Fall River	87,411	59	45	66.11	3.38	64.22	1.69	—
Lowell	87,191	60	38	46.48	3.33	41.50	1.66	1.66
Cambridge	77,100	38	21	42.08	2.63	36.82	—	—
Lynn	62,656	24	10	20.80	4.16	8.32	4.16	—
Springfield	48,684	23	11	52.20	13.05	34.80	8.70	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	24	16	62.40	8.32	58.24	4.16	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	13	6	15.38	7.69	15 38	—	—
Brockton	32,140	9	3	33.33	11.11	11.11	-	11.11
Haverhill	31,396	8	2		12.50	—	—	—
Chelsea	30,264	8	6	12.50	—	12.50	—	—
Malden	29,394	13	4	15.38	15.38	15.38	—	—
Newton	27,556	—	—	—	—	—	—	—
Fitchburg	27,146	9	5	22.22	—	22.22	—	—
Taunton	26,972	16	6	25.00	—	18.75	—	6.25
Gloucester	26,688	—	—	—	—	—	—	—
Waltham	22,058	8	4	25.00	—	25.00	—	—
Quincy	19,642	6	1	16.66	16.66	—	—	16.66
Pittsfield	18,802	1	0	—	—	—	—	—
Everett	16,585	5	3	20.00	20.00	—	—	—
Northampton	[illegible]	3	0	33.33	33.33	—	33.33	—
Newburyport	14,073	5	0	—	20.00	—	—	—
Amesbury	10,920	2	0	—	—	—	—	—

Deaths reported 4,675: under five years of age 2,756; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 1,823, diarrhœal diseases 1,534, consumption 341, acute lung diseases 229, diphtheria and croup 104, typhoid fever 50, whooping-cough 33, cerebro-spinal meningitis 32, measles 25, scarlet fever 25, malarial fever 10, erysipelas 3, small-pox 2.

From whooping-cough New York 9, Philadelphia 7, Chicago 5, Pittsburgh 4, Washington 3, Brooklyn, Cincinnati, Cleveland, Milwaukee and Brookline 1 each. From cerebro-spinal meningitis New York and Chicago 8 each, Brooklyn and Cleveland 5 each, Philadelphia 2, Boston, Washington, Worcester and Brockton 1 each. From measles New York 7, Chicago 5, Philadelphia and Pittsburgh 4 each, Brooklyn 3, Lynn 2. From scarlet fever New York 6, Chicago 4, Philadelphia, Brooklyn, Boston, Milwaukee, Cambridge and Springfield 2 each, Worcester and Everett 1 each. From malarial fever Charleston 4, Brooklyn 3, Nashville 2, Cleveland 1. From small-pox Philadelphia 2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 22, 1893, TO JULY 28, 1893.

Leave of absence for one month, to take effect when his services can be spared at Fort Wingate, New Mexico, is granted **Major Louis M. Maus**, surgeon, U. S. A.

Leave of absence for two months, to take effect on, or about, September 15, 1893, with permission to apply for an extension of one month, is granted **First-Lieut. Benjamin L. Ten Eyck**, assistant surgeon, U. S. A.

Captain William B. Davis, assistant surgeon, is relieved from duty at Fort Sam Houston, Texas, and ordered to Fort Brown, Texas, for duty, relieving **Captain George H. Torney**, assistant surgeon.

Captain Torney, upon being relieved by **Captain Davis**, will proceed to and take station at Philadelphia, Pa., as attending surgeon and examiner of recruits at that place.

Captain Leonard Wood, assistant surgeon, is relieved from duty at Presidio of San Francisco, Cal., and ordered to Fort McPherson, Georgia, for duty.

Captain Louis W. Crampton, assistant surgeon, is relieved from duty at Fort Spokane, Washington, and from temporary duty at Hdqrs., Dept. of Colorado, and ordered to Baltimore, Md., as attending surgeon and examiner of recruits, relieving **Captain Charles B. Ewing**, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 29, 1893.

H. J. Babin, surgeon, to temporary duty at Naval Station, Port Royal, S. C.

A. R. Alfred, assistant surgeon, from the "Franklin" and to the "Minnesota."

J. M. Moore, assistant surgeon, from Norfolk Hospital and to the "Franklin."

E. Kershner, medical inspector, to duty on board the U. S. S. "New York."

J. F. Urie, passed assistant surgeon, to duty on board U. S. S. "New York."

H. D. Wilson, assistant surgeon, from the "Minnesota" and to the "New York."

B. H. Kidder, medical inspector; **H. M. Wells**, medical director; **Frank Anderson**, surgeon; **Clement Biddle**, passed assistant surgeon, granted leave of absence.

RECENT DEATHS.

Justus Carriere, M.D., has died in Strassburg, aged thirty-nine years. He was a grandson of Von Liebig and Professor of Zoölogy at Strassburg.

John Rae, M.D., died in London, Eng., July 24th. He was a noted Arctic explorer and had charge of one of the expeditions of Sir John Franklin.

BOOKS AND PAMPHLETS RECEIVED.

Eczema Infantile. By B. Merrill Ricketts, M.D., of Cincinnati, O. Reprint. 1892.

College of Physicians and Surgeons, Richmond, Va., Announcement, Session of 1893–94.

Report of the Commissioner of Education for the Year 1889–90. Two volumes. Washington. 1893.

Laws Relating to Public Health Passed by the Ninth General Assembly of the State of Colorado. 1893.

Apparent and Actual Mortality. By F. D. Bullard, A.M., M.D., Los Angeles, Cal. Reprint. 1893.

Proceedings of the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons, Session, 1892.

Bacterial Poisons. By N. Gamaleïa, M.D., translated by E. P. Hurd, M.D. Physicians' Leisure Library. Detroit: George S. Davis. 1893.

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon-General, Marine-Hospital Service. Vol. VII. 1892. Washington. 1893.

The Indications for Amputation in Chronic Disease of the Larger Bones and Joints, with a Report of Seventeen Recent Cases, Including Three Successful Amputations at the Hip-joint. By J. E. Summers, Jr., M.D., Omaha, Neb. Reprint. 1893.

Lectures.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XII.

SPECIAL FRACTURES.

Fracture of the Greater Trochanter. — It happens occasionally that a person breaks off the greater trochanter. That can be easily diagnosticated, because the trochanter is so superficial that we can feel it through the tissues, grasp it and detect crepitation.

If it is a fracture of the trochanter alone, then we can apply treatment by the pelvic belt and gentle extension, and keep the parts quiet, and we are sure of union. If it is a fracture through the trochanter and the neck, we must treat it as a fracture high up, either in the straight position, or sometimes, if the fracture occurs below the trochanter minor, then in the double-inclined-plane position, which will favor the approximation of the fragments.

When the femur happens to be broken off just below the lesser trochanter, the upper fragment is strongly pulled upon by the psoas and iliacus muscles. The injury throws them into spasmodic contraction. They are ordinarily so strong as to move and evert the fragment. Everything is gone except this little piece, and they seize this and turn it, and tip it outwards. The shaft goes, usually, backwards; and no approximation of the fragments is possible, without great care. It is sometimes possible in the straight position to get this fragment down to match the shaft. If you are unable to do this, you must bring the lower fragment up. So that it is this class of fractures that is best treated on the double inclined plane. That is Nathan Smith's method of treating fractures of the thigh. Nowadays most fractures of the thigh are treated in the straight position. It is a noteworthy fact that Hippocrates treated fractures of the thigh in the straight position. People got dissatisfied with that; and two or three centuries ago they treated them all on the double inclined plane. Now they are almost all treated in the strictly horizontal position, once more.

When an old person falls and breaks the neck of the thigh bone completely off, you apply treatment; and the two questions always asked are: Is the patient going to be lame afterwards? You can safely say, "Yes." If they do well they will go on crutches a long while. If they do extremely well, they will be able to use a cane; but not be able to go without a cane, in all probability, for the rest of their lives. How long are they going to be confined? That you must put at a long period. The treatment that you apply to complete fracture of the neck would not cover more than six, or eight weeks; but the subsequent recovery of the powers of the old person always consumes months; and four to six months is perhaps none too long to say, before they get to moving about freely; and, of course, in a limited class of cases you would say, this person is so old and feeble, having already reached the age of eighty, or more perhaps, that it is hardly worth while to subject him to hard confinement and to apparatus; but the better way is to put the patient of that age upon a soft bed with springs and mattress so arranged and divided, that the bed can be tilted about on a double inclined plane; and subsequently get him on a lounge or chair of the same plane; and look after the bladder. Look after bed-sores. Keep up the nutrition without applying rigid apparatus. Be cautious about applying bandages firmly to the parts, for you run a great risk of so interfering with the circulation, that gangrene may be set up in the toes, to which they are extremely liable. In the first place, as you know, the venous circulation on the surface is extremely sluggish; the vessels are much dilated. In addition to that there may be atheroma of the arteries, which has reduced their calibre and elasticity so that the nutrition of the extreme parts of the foot is very poor. Such a limb will stand very little exposure to cold; will heal very slowly if it is injured; will slough very readily if it is compressed by a bandage or apparatus.

Fracture of the Femur. — It is this bone which gives rise to the greatest number of cases of shortening; conspicuously so because it supports the whole weight of the body, and because it is small; and also, especially, because the muscles that are attached around it are so powerful. When the femur breaks, shortening is immediate and considerable, and amounts frequently to an inch within the first few minutes. The deformity of the limb is very marked. The limb appears twisted out of place as well as helpless. The muscles above are irregular, and the deformity of outline is always considerable in fracture of the femur. Shortening and deformity. In addition to that if you draw the part down, you get crepitus; and a hinge or false joint in the middle of the thigh, for instance, is very conspicuous when you try to lift so large a portion of the body, so that the signs of broken femur are marked from the beginning.

In consequence of the power of these muscles shortening is very difficult to overcome by extension, and it frequently happens as the result of treatment that a considerable shortening remains. I think I said in the beginning of this course that recent measurements conducted in a number of museums of specimens of fracture of the femur, for instance, had proved that that bone especially, of the long bones, never united without shortening. This may be qualified a little perhaps in the case of the femur of children, where the break is usually transverse, and where union without shortening frequently occurs. In the adult shortening is the rule.

How much shortening is to be considered a fair result? Experience has proved that a patient will walk without perceptible limp with three-fourths of an inch shortening. He may need possibly another lift upon the sole and heel of the boot, but will not limp perceptibly with three-fourths of an inch shortening; for the pelvis tilts, and the whole side of the body accommodates itself to that shortening, without showing appreciable lameness. What is called a first-rate result in broken femur is one-fourth of an inch shortening. One-half inch does not make us ashamed. Three-fourths of an inch is not desirable; but still we may feel that the patient is not going to be lame, and conspicuous to himself and others. Beyond three-fourths of an inch marked lameness occurs; and instances are seen, frequently, in which either without treatment, or from unfortunate treatment, shortening results of from one to one and a half inches.

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[1] These are [illegible] lectures [illegible] part of the regular course.

We may then in attending a fracture of this bone expect to be able to make an easy diagnosis; expect to have a case that will require treatment and a great deal of care to avoid shortening; and expect to have some shortening any way; and it is just as well, if anything is said upon the subject, for the patient and his friends to understand from the beginning, that no treatment can make a broken bone, of that character, as long as it was before. They must be made to understand that it shortens in mending. That is true; but there is another point true, for which we are responsible if we allow it to occur; and that is this, that after union has taken place to a pretty firm degree, if we allow the patient to go about too soon upon such a bone (as it bears such a weight and is so small), subsequent shortening will take place after union has occurred, from pushing up, shortening and shrinking of the soft callous union, which has not yet become bone. These are the cases that get out of bed at the end of six weeks; come out with a shortening of one-fourth of an inch, and are found to have increased the shortening by another one-fourth or one-half of an inch. It is remediable. The limb can be drawn down and the original length secured; but, unfortunately, unless we are on our guard, it is liable to occur, and very frequently it is not detected. Some shortening we are responsible for; and that is this kind; but the shortening that occurs in the beginning from the mending of the bone we are not responsible for, at all; and if the patient escapes with not over three-fourths of an inch shortening, he is not going to be essentially lame.

In all the ordinary fractures of the femur, anywhere from an inch or two above the popliteal space to an inch or two below the trochanters, the treatment is the same. In old times it was treatment in the straight position. Two or three centuries ago treatment vibrated back to the double inclined plane. Latterly, it has returned to the straight position; and it is the rule now that all fractures of this kind that I spoke of are treated in the horizontal position, and by extension and counter-extension. Since the use of the weight and pulley, which, by the way, is mentioned far back in the Middle Ages; and since the use of plaster extension, which was used in 1771; since the re-discovery and re-use, so to speak, of these two methods of treatment, the treatment of fracture of the femur has become very much simplified. When I was a student, it was customary to treat in the straight position; but the counter-extension was made by a perineal strap, and the extension by having a long splint pocketed in the belt; a foot-piece attached, movable by a screw; the foot being fastened to the foot-piece, and the screw being turned, the leg was extended. Then you pulled against the perineum entirely, to the great suffering and annoyance of the patient. Sores occurred. Many of the hospital apparatuses in those days had a padlock to prevent the patient from unbuckling his straps. The result was sloughing heels, sloughing perinei, and general discomfort. This did not occur in all cases; but it was liable to occur in a good many cases. Now, by the use of counter-extension, by raising the foot of the bed, and by the plaster-extension, we have overcome, practically, all these miseries, and have as good results as they had before. One surgeon, I think, has undertaken to treat fractures without extension, by the immediate application of plaster-of-Paris, but the results have not been very successful. You will find in "Hamilton's Surgery" a table of results of treatment by plaster, which is not very encouraging. The trouble is this: The limb is drawn down into place, the plaster-of-Paris applied, and at first all goes on well; but within a few days, when swelling has subsided and the leg begins to shrink, it absorbs more and more as time goes on. It soon lies like a loose substance within a case; and shortening of the fragments takes place inside the plaster, out of sight; and it may result in a union with considerable shortening.

Extension and counter-extension, on the whole, are the best methods. It is not a part of this course to show the application of apparatus. I only undertake to lay down the rules. Inasmuch as the fracture of the thigh-bone is one of the most serious we have to treat, it seems proper that these rules should be laid down very slowly and exactly with regard to the apparatus; and that I hope to do plainly now.

Counter-extension, in the first place, by raising the foot of the bed at least four inches. This is useless if you allow the patient a bolster and two or three pillows, because you immediately tip up his body and shoulders on a double inclined plane, and do not get the weight of the thorax and head pulling. The head should literally be lower than the heels, for the first few days until the muscles have got tired out, to make this treatment perfectly successful. Moreover, the bed must be very firm and hard. A bed made of wire or of soft springs is not suitable, unless there are put under it three or four cross-pieces of wood to prevent sagging of the apparatus; for the upper fragment may be tilted up by the sinking of the apparatus. Everything must be square, straight, horizontal and smooth, and the foot of the bed raised four inches; and if any pillow at all is allowed, an extremely thin one, and one only. The patient must necessarily be forced and instructed to lie on his back, which he is very reluctant to do. He suffers a good deal; has backache and wants to turn; and if he turns he disturbs the fragments. Extension is made by long strips of plaster, water-proof plaster, spread on heavy cloth, which will not soften up under the influence of perspiration or accidental wetting — two long strips, which are carried up to the end of the lower fragment, always above the knee-joint, and then surrounded with circular, or spiral strips enough to keep them in place. Fasten this around a cross-stretcher, to a cord, which runs over a pulley, and to which is attached a weight. It is of no consequence what the weight is made of, as long as it is a weight of a certain definite amount. A strong man, in the early stages, requires twelve or fifteen pounds' weight to pull down the femoral muscles. Ten to fifteen pounds is a common weight, and five to six for a child. Five to ten for a child or young adult; ten to sixteen for a fully developed and strong person. We must be guided a little by the size of the thigh of the individual, by the power of the muscles, by his weight. Weight is to be put on until the thigh is brought down to a length equal to the other, as determined by careful and repeated measurements. We may not accomplish this the first thing, but ought to accomplish it in twenty-four to seventy-two hours. It is found that, after a few days, the muscles get so tired that they will give out considerably, and the length of the limb can be maintained with a diminished weight. It is questionable, I think, whether it is desirable to have sixteen pounds pulling for six weeks upon a leg. It is conceivable that we may separate the fragments, may delay union in that way. We should also give some chance to come together, but at first a great power has got to be used. When the muscles get tired, we take off several pounds, and go down from sixteen to twelve, or from twelve to nine or ten, according to the amount which was first used.

You must also be extremely careful that friction about the bedstead, friction of the foot pressing against some rod or cross-piece, friction of the heel pressing against the edge of the mattress does not defeat your object in getting perfect extension. It is important that the heel should swing free from the bed, and be separated by a pad in the hollow of the ankle, so that the heel may lie off and not touch. The heel is the part above all others that does not bear pressure well. In health it is almost wanting in sensitiveness, as you know; but pressed upon, it becomes as tender and aching as a diseased bone; and when it once sloughs, it of course being of a thick and semifibrous and feeble tissue, it repairs very slowly; makes a disastrous ulcer; which is a long while in skinning over, so that the patient can move about; so that ulcerations over the end of the os calcis are to be dreaded. You can see in the skeleton how much of a protuberance this bone makes, and the importance of having this lifted up by a pad.

The next point is to prevent the lower fragment and the knee from rolling out, which they will do if not supported; to avoid eversion; to keep the great toe on an exact line with the inner border of the patella; and in order to do that we have got to immobilize the places where motion can occur.

What are these? The hip-joint, knee-joint, to a less degree the ankle-joint. These three joints must be immobilized; and the foot inverted; the toe kept straight up, and on a line with the inner border of the patella. We accomplish this best by the long outside splint. This is a relic of the old period. It must extend down below the foot, and must be placed on the outside of the limb and fastened so that the limb shall be inverted a little and not allowed to turn out. It is a part of the old apparatus, but does not fulfil the same office as in the old apparatus. In the old apparatus it was the means of carrying on the extension. In the new apparatus it is simply to prevent rotation; and I wish to insist very strongly upon that point; for many people make the mistake of thinking that this is a long board which lies down beside the limb in the bed as a splint, which is keeping up the extension, and keeping up the length of the limb. It has nothing to do with it. It prevents rotation, and prevents motion of the joints, that is all. In order that it may keep a perfectly vertical position it is useful to have a cross-piece attached to it, so that we have a long piece coming down, and a piece crossing below, but not touching the foot, to hold the splint upright on its edge. We have to have a belt and pocket to confine it around the body, like a swathe. It can be carried up to the arm-pit, and fastened around the body.

So far, then, we have drawn the leg down, and held it by weight; have prevented rotation, and motion of these three joints. It is also necessary to compress the muscles immediately around the fragments of the broken bone; and this is done by means of four narrow pieces of wood, like shingles, placed above and below and on either side of the thigh, to compress the muscles which are about the fracture. No bandage should be put on the thigh under the splints. That cannot be too strongly insisted upon. The splints should be properly padded. They should be fastened on with three or four inch wide webbing straps and buckles. In that way you can watch the circulation of the part; see the amount of swelling; tighten or loosen at any time; and the object of these splints is only to keep the parts still. When this is done, that is all. You have got the length by pulley from the foot; counter-extension by the weight of the body; you have got position; compressed the muscles, and held the parts in position; and after two or three days you may begin to take off weight.

How long should this be kept on? About six weeks in an adult. Much less than that, for a broken femur, in a child. At the end of six weeks, take off the entire apparatus; strip the patient completely; let down the foot; measure to see the length; and gently lifting the ankle and foot, and putting the hand upon the trochanter, rotate to see whether you have union. If you have union, and fair length of the limb, it is very satisfactory; but this union is of the softest possible character; will not bear the weight of the limb; and certainly no moving about. Now extension by the weight and pulley may, perhaps, be given up, as long as the patient remains in bed; but in place of that put on a plaster-of-Paris, or dextrine, or starch, or some firm bandage, which extends from the toes to the groin, and compresses the parts evenly, and holds the united femur in its proper position. After that the patient should lie in bed two weeks longer; then sitting up may be allowed; moving around with crutches without putting the weight of the foot on the ground. Still keep on a light plaster or dextrine bandage for three or four weeks more; and if it shrinks and the leg wastes, as it usually does, it can be cut open, and fastened with external straps so as to make a snug evenly-moulded case for the limb. At the end of three months, it is safe to let the patient put weight upon the limb; but it is six months before he can lift on it and shovel, as with the other leg.

In the upper third of the femur a modification of this treatment is required, on account of the fact that the psoas and iliacus muscles attached to the inner trochanter seize upon the upper fragment and tip it up and out. In order to make the lower fragment match it, we must put the leg in the Nathan Smith splint.

When we come to the breaks of the lower part of the femur we meet a new difficulty. The two heads of the gastrocnemius muscle are strongly inserted into the posterior part of the femur. The moment the shaft is broken off, they pull on the two condyles and draw the lower fragment directly back into the popliteal space; and occasionally make a laceration of the vein, or an abscess, if not properly treated. Now this requires extension in the same position, but, in addition, a padded ham-splint to go in the popliteal space, to force up this fragment, while extension is kept up in the ordinary way. The result of treating the fracture in this way is generally good.

In all these fractures of the femur we are obliged to keep the knee-joint so long stiff and motionless, in the course of the treatment, that fibrous anchylosis is always the result; and the patient, at the end of three months, goes about with a stiff knee, which he is some time in overcoming. This will, with a little care, cure itself; does not need violent pumping, or friction, or massage. It is very prone to inflammation. I have seen, after fractures, when the limb had got strong and the patient was going about, have seen him put back by injudicious movements of the joint, which brought on synovial accumulation. The patient will overcome the stiffness himself, by natural means. Encourage him to sit on the edge of a chair, and lower his foot-stool an inch a day.

Fracture of the Patella. — The knee-pan almost always breaks transversely, and frequently the lower fragment breaks into two pieces. Unfortunately the fragments are very seldom exactly alike in size, and these peculiarities explain why it is so difficult to get good union between the fragments. If we had a perfectly square break across the middle of the patella we should be able to hold the fragments more firmly and evenly and get better union, but we almost always have to deal with one large fragment and one small fragment, and frequently with one large fragment and two small irregular fragments. You will see at once how much these increase the difficulty of coaptating the parts or of making them unite. This being a sesamoid bone, developed in the tendon, has no great active or reparative power, and is incapable of uniting by bone, unless provoked by some foreign substance. A simple fracture, by wiring, will unite by bone; but if left to the processes of nature it will not unite by bone. The lower fragment is fixed, tied to the tubercle of the tibia by the ligamentum patellæ. The upper fragment is movable, fastened to the quadriceps femoris, and pulled up violently by the contraction of the rectus muscle. This separation usually takes place at once; and when we see a patient with a broken knee-pan, we generally find that considerable separation already exists. If untreated, and the patient is allowed to go about, this increases more and more, until, in one extreme case I saw at the hospital, of a sailor, there were between four and five inches between the two pieces of the patella. You may remember that the vasti muscles are inserted into the sides of the tibia and fibula by very strong extensor tendons, which are flat and fascia-like and firm. They form a sling which lifts the leg, after the attachment of the rectus to the patella is broken off; and they are the salvation of the patient who has broken the patella. This sling becomes very much increased in strength; grasps the knee as the two hands would; and in that way the foot is held with considerable safety, and moves with considerable force.

Fortunately it happens after fracture of the patella that, although union is not by bone, yet a simple separation of the fragments with membranous union, is just about as useful as union by bone. Hamilton lays down the law that separation up to an inch gives as good a limb as close apposition of the fragments, with regard to future utility. In this case the patient is not only dependent upon the membranous union of his broken knee-pan, but also upon the sling of the two vasti extensors, which become enormously thickened.

On the other hand, we have the means, if we succeed in the operation, of provoking bony union by cutting down on the fracture, converting the simple into a compound fracture, washing out antiseptically, drilling the bones, wiring, forcing the wire to hold them in contact a good many weeks, finally untwisting and removing the wire, and then eventually healing up the part, if fortunate, without sepsis, or destructive suppuration in the joint. Whether the good to be gained by this procedure is worth the risk it entails, must be left with every patient and surgeon to judge for themselves. I think an important point to be borne in mind is this, that we should never lose sight of the constitution, age and vitality of the patient when we are considering the propriety of subjecting them to any operation of this kind. We have got, on the one hand, the certainty of ligamentous union with fair result to the patient, if he is well taken care of; on the other hand, a better and firmer union, if the patient undergoes a certain risk. Will he keep up nutrition; is he likely to go into the condition of delirium tremens; or to sink in any other way? On the other hand, if we think it more prudent to use the old method, he is pretty sure of getting a fair leg, any way.

The principles of treatment are to treat the leg in the extended position. The patient must not only lie flat upon the bed, but the leg and foot must be raised up from the bed at a slight incline, in order to relax thoroughly the rectus muscle. The rectus has two heads. One is fastened to the pelvis just above the anterior inferior spine. We cannot relax that head unless we bend the femur on the trunk, and that is the object of lifting the foot a little higher than the bed. The fragments may be drawn together by a plaster, or figure-of-8 bandage; and finally a plaster-of-Paris bandage may be applied to the whole limb; an opening being left through which we can watch the fragments. This treatment cannot be applied at once. The fracture is a break into the knee-joint; and the injury, in consequence, is pouring out blood, and there is leaking into the joint. There is also a large effusion from the synovial sac, and we have a state of acute synovitis and ecchymosis; therefore we cannot apply this treatment, at first. You find, at first, the leg cool and the fragments separated, and you say "we can treat this at once," but the next day, you find the synovial sac full of fluid; the fragments wholly separated; the parts extremely tender; the surface black and blue, and risk of destructive suppuration in the joint, if you persist in harsh treatment.

The early treatment of fracture of the patella must be, in almost any case, to put the limb on a ham-splint; place it on pillows on a soft bed; to treat the synovitis for the first few days, sometimes by evaporating lotions, sometimes by cold, sometimes by leeches; and, after this, by more stringent treatment. I suppose this treatment would not apply to the case where you were to cut down and wire it.

The trouble about these fragments is not so much that we cannot draw them together, as that they tilt. Any pressure on the edges tilts up the middle; and the broken surfaces, instead of lying in contact perfectly, rise up, and it is difficult to control them. Malgaigne's hooks are, no doubt, an excellent means of holding the fragments perfectly in apposition. The plaster; the figure-of-8 bandage; the method known as Sanborn's, which consists in putting two rollers above and below the patella and applying plaster up and down the limb, and twisting it with a stick over the rollers, are also sometimes very good methods of keeping the fragments together. I think we should be reasonably satisfied if we can hold them together so nearly that no more than a quill or pencil can be laid between the fragments while treatment is going on; and if the limb is immobilized, you will get good union. That union is liable to stretch, at any time, for four or five months. Hamilton says, after five months, union is strong enough to resist anything. Consequently, in the first place, the primary treatment must be very long, three months, at least; and subsequently to that, the patient must wear a ham-splint, with a joint, for two or three months more. I mean a ham-splint so made that, although it has a hinge in the back, it can only bend to a slight degree, and brings up by a catch, so that the patient cannot possibly drop.

What is the consequence if he gets an accidental early bending or fall? Re-separation of the fragments. This happens very often indeed. The patient is going about the wards and begins to feel pretty strong; his crutch slips, and that leg gives out at once; and the fragments are more widely separated than ever. Unfortunately, re-union is much slower and poorer and more imperfect than in the first place; and it is a great disaster to happen, in addition to the loss of time, because he never gets so good a leg as before.

Patient treatment for months. Care afterwards for many months later. Wearing this ham-splint for more than five or six months, perhaps; and finally, the patient will get a very useful limb. It is an annoying accident. For the size of the bone and of the injury, it entails more delay and loss of utility of the limb, than the fractures of a great many larger bones.

Fracture of the Tibia. — The tibia never breaks alone, I think, except in consequence of a direct blow. When it is broken alone, the fibula is a splint for it and holds it in place.

The treatment is very simple. A plaster can be put on; and the fibula will hold it in place. There cannot be shortening; and union will take place in four weeks.

Fracture of the Fibula. — When the fibula is broken alone, it gives way about two inches above the ankle-joint, as a rule, where the bone becomes quite thin. It always occurs by the same sort of violence that gives what we call a sprained ankle. When a person has a sprained ankle he steps off of some height and turns the toes in, or the foot into the position of varus. The ordinary sprained ankle consists in tearing some of the ligamentous fibres, and loosening the joint. The same sort of accident, in some patients causes fracture of the fibula. Unfortunately fracture of the fibula one and a half or two inches above the joint is often mistaken for a sprained ankle; and so treated, with disastrous results. The sprained ankle gets better at the end of ten days; but at the end of ten days the broken fibula is just as bad and painful as ever. Some one then makes a more careful examination, and detects the fracture. It is detected by placing the two thumbs on the fibula, and springing the bone up and down, and comparing it with the other leg. In the limb where the fibula is broken you have perhaps crepitus and localized pain and tenderness; a little irregularity of the surface of the bone; and it springs up and down, under the thumb, like two pieces of whalebone. People can walk with this fracture. Booth shot Mr. Lincoln and went off with this fracture, and rode two nights; and if he had not had to go through other hardships, probably he would have done very well. People can go about with that fracture, but it will not get well.

Dupuytren's splint is a good one. Apply on the inside of the limb and bandage over. Simple plaster-of-Paris, put on, is sufficient; and with the plaster on, the patient can get on crutches, and move about very soon without putting weight on the limb.

The essential point in regard to this injury consists in its diagnosis. Its treatment is easy, and its cure certain.

Fracture of the Tibia and Fibula. — Fracture of both bones of the leg almost never takes place on the same level. One is above or below the other. As a rule, the tibia is low down and the fibula higher up. Moreover, fractures of the tibia anywhere between its upper and lower thirds are almost always oblique from before backwards and upwards, so that the upper fragment has a sharp shell of bone which lifts up against the skin. If the fibula is also broken, the gastrocnemius muscle acts as a bow-string on a broken bow, and forces both of the bones upwards against the skin and out of line. The difficulty in fracture of both bones consists in keeping both these oblique fractures down in place. The skin is extremely thin, and liable to be irritated and to slough unless very carefully treated. Great shortening does not take place in fractures of the lower leg. It is usually not noticed by the patient afterwards; and does not occur to any great degree. Moderate shortening, perhaps, always occurs. It is best detected by setting the patient square on a chair, with the knees at right-angles; feet naked, and toes carefully placed together. In that position we can detect whether one knee is on a higher level than the other.

The difficulty in treatment is principally in getting this oblique fragment of the tibia down in place and keeping it there. Sometimes we can do this with gentle compression and bandage; sometimes by a lateral splint holding the parts. Sometimes we are obliged to raise the heel and the foot in order to draw the lower fragment up into contact with the obstinately riding-up upper sharp piece, which threatens to break through the skin of the leg.

There do exist, occasionally, very irregular and oblique fractures of the tibia which have a split running up the bone besides, in a triangular direction. These are extremely troublesome. They are among the most painful that exist; and the patient suffers from neuralgic pain later. You must warn the patient that such a fracture will repair, in time; but that he will have lameness and pain for a good while afterwards.

Four to six weeks for fracture of both bones of the lower leg; and plaster after that put on for some time, and crutches. Weight put on the feet slowly afterwards.

Pott's Fracture. — The most troublesome fracture of both bones of the lower leg is Pott's fracture; described by Mr. Pott, who was himself a victim of the accident and who devised means of treating it. It consists of fracture of the fibula at the classical place, one to one and a half inches above the joint; rupture of the internal lateral ligament alone, or rupture of the internal lateral ligament with breaking off of the tip of the inner malleolus as well. So that the tibia projects inwards and the foot is dislocated outwards at an angle from the leg.

Now it is very plain what we want to do in order to get this back into place, and if we can accomplish this it can be successfully treated. The dislocation is to be reduced by carrying the foot in. The foot is to be set at a right-angle to the leg so that the lower surface of the foot is at a right-angle with the tibia; the great toe on a line with the inner border of the patella. It is desirable in setting this fracture with dislocation outwards, to carry the great toe a little further inwards than the inner border of the patella; and instead of having the foot dislocated outwards, have it turn a little inwards, in the opposite direction, as if the patient had a commencing varus. We do not expect to maintain that position always; but we exaggerate a little in order to retain enough of the right position when the foot comes out of the splint. There are some cases of this fracture where the parts will not stay in place; where dislocation backwards occurs; where the astragalus pushes out in front of the tibia; and it is in this class of cases that we are to do tenotomy of the tendo Achillis. Cut that, and the whole thing is in place at once. The proper position is with the great toe a little further in than the inner border of the patella, and the sole of the foot strictly at right angles with the limb. It is best confined with a plaster-of-Paris bandage. The dorsum of the foot and the front of the leg should be left open, so that we can see the position and guard against swelling.

This is a tedious fracture to treat. It takes eight weeks; and you must warn the patient that he will be extremely fortunate if he gets through without stiffness of the ankle-joint, since he has had dislocation and fracture into the joint.

I cannot too strongly call your attention to the fact that in treating all fractures of the lower leg it is of the last importance that the foot should be kept up at right angles to the leg. If we allow the foot to droop, the result is that the bones are so much shortened that the patient walks ever afterward in the position of talipes equinus, on the ball of the foot; and cannot get the heel down to the ground; whereas if from the first he is treated in the rectangular position, subsequently there is no trouble.

Fracture of the Os Calcis. — Fracture of the os calcis is rare. It happens from the person's stepping off a height and lighting on the arch of the foot. If the os calcis is broken off, you can see what must happen. The tendo Achillis, all the strong calf muscles of the leg being inserted there, pulls the large fragment up on the back of the leg.

In order to approximate the fragments of the bone, we have got to put the leg strictly in the equinus position; drawing the heel up as far as possible with a strap, in order to get the fragments together.

Union generally takes place and the result is fairly good.

Fractures of the Tarsus. — Fractures of the tarsus are almost always compound, the result of crushing; or if not, they do not occasion much displacement, and readily heal.

Fractures of the Metatarsal Bones. — Fractures of the metatarsal bones, on the other hand, are frequently produced as simple fractures by the fall of timber on the foot; and give rise to the same sort of displacements and deformities that occur in the metacarpal bones of the hand. Fracture of the metatarsal bones corresponds very much to the fracture of the metacarpal bones. The bones should be held nicely in splints and carefully padded. If subsequent irregularity in the union occurs; and there is any knob or projection above, or below, or at the side of the metacarpal bones, the patient is sure to feel it. Careful attention must be given to the setting and adjustment of bones; and so also with the toes, as with the fingers.

The only point of any importance is this; when you have to treat fractures of the metatarsal bones, the foot does much better upon a large splint shaped like the leather sole of a shoe than upon any narrow splint, fitted on any one individual toe; you want a large wooden sole; adjust it with other splints, plaster or what not, in order to compress the parts into shape.

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TUBERCULOUS PLEURISY.[1]

The Shattuck Lecture for 1893.

BY WILLIAM OSLER, M.D.,
Professor of Medicine in Johns Hopkins Hospital, Baltimore.

(Concluded from No. 5, p. 114.)

Case XV. Pleuro-peritoneal tuberculosis in chronic pulmonary tuberculosis (abstract).

D. W., aged eighteen, colored, admitted November 21, 1889, complaining of cough, fever, and pain in the abdomen. About two months before admission he was wrecked and exposed in a boat for twenty-four hours. He dates his illness from this time. He can give no details as to his family history. He had syphilis in the spring of 1889. The patient was a medium-sized, fairly well nourished young man, and at the first examination there were signs of disease at both apices, most marked at the right. There was high fever, and very rapid extension of the pulmonary disease, a large excavation developing within a few weeks at the top of the right lung. There were friction sounds heard in the axillary regions, and particularly marked on the left side. The abdomen was full and distended, sometimes painful, and he had diarrhœa. The patient did not improve in any way, but the fever persisted, and he became greatly emaciated, progressively weaker, and died January 25th.

Autopsy. Anterior mediastinal glands caseous. Both lungs were bound down by firm adhesions. The pleural membranes thickened; the costal layer, easily stripped off, was covered with fibrinous exudate, beneath which were numerous tubercles and caseous masses. On the pulmonary pleura there were numerous tubercles and flat caseous areas. Both lungs showed large cavities at the apices, numerous caseous areas, and miliary tubercles disseminated and in groups.

There was only a small amount of clear fluid in the peritoneum; the intestines were agglutinated, and on the peritoneal surface many groups of tubercles and flat caseous masses. The mesenteric glands were greatly enlarged and caseous. There were numerous tuberculous ulcers throughout the entire intestine, beginning just beyond the pylorus and extending to the rectum. There was tuberculous ulceration of the bladder.

We have many opportunites of seeing slight extension of the disease through the diaphragm, either downward from the pleura, or more often from the peritoneum into one or other pleura. In the following case there was extension from the right pleura to the under surface of the diaphragm, and to the peritoneum covering the liver.

Case XVI. Pulmonary tuberculosis; chronic tuberculous pleurisy; tuberculous peri-hepatitis; circumscribed tuberculous peritonitis (abstract).

A. F., female, aged nineteen, admitted June 6, 1892, complaining of shortness of breath. She had been in failing health ever since the birth of her child March

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[1] Delivered before the Massachusetts Medical Society, June 13, 1893.

19, 1892, when she had a severe cough, which has persisted ever since. She was pale, emaciated; respirations 44; pulse 148. There was deficient expansion at the right apex and signs of commencing cavity. She was in hospital during July and August, and signs of extensive pleurisy developed on the right side, for which she was aspirated and seven and a half litres of serous fluid removed. She had marked hectic fever. The pleural symptoms were complicated by the presence of a large abscess in Scarpa's triangle, which was opened and drained. She died September 12th of hæmoptysis.

Autopsy. In the anterior mediastinum there were miliary tubercles and caseous masses; both pleural sacs obliterated. The parietal layer of the pericardium, adherent to the pleura, presented numerous fresh gelatinous-looking tubercles. The lungs and visceral pleura on the left side removed together. The layers were greatly thickened, and were covered with a hæmorrhagic, rough exudate one to two millimetres in thickness. The right pleural sac also obliterated, and the membranes united by old adhesions; no acute pleurisy. Throughout the left lung there were several cavities; one at the apex, nine centimetres, and in this there was a ruptured aneurismal dilatation of a branch of the pulmonary artery.

The under surface of the diaphragm on the right side was adherent strongly to the liver and covered with numerous gray tubercules, which were also present in numbers on the upper surface of the liver, and there were numerous hæmorrhages about them.

There was tuberculous disease of the lumbar vertebræ. The mesenteric glands were enlarged, but not caseous. There were tuberculous ulcers in the ileum.

Attention has often been called to the frequent association of tuberculous pericarditis with tuberculous pleurisy. Thus of seventeen cases which I recently described[3] there was combined disease of these membranes in Cases IV, VII and XV. In the following case the pericarditis in all probability followed the chronic tuberculous pleurisy.

Case XVII. Chronic tuberculous pleurisy on the left side; acute tuberculous pericarditis and pleuritis dextra.

John P., aged thirty-eight years, admitted August 18th, with swelling of the legs and dyspnœa. The family history is good. He has been, as a rule, healthy, though in his childhood and youth he had many of the infectious diseases. He has been a moderate drinker. He denies syphilis. The present illness began about two weeks ago with pain in the left shoulder and about the heart. Feet began to swell ten days ago, and he has had cough and shortness of breath for about the same length of time. He has had no nausea; his appetite has been fairly good. Within the past few days he has become much worse.

On admission the patient had intense orthopnœa; pulse 130, but moderately full. He had a distressing cough, with clear watery expectoration. There was great œdema of the lower extremities and of the scrotum. The finger-tips and mucous membranes were bluish in color. In the examination of the heart at the time no murmur could be detected, but the second sound was accentuated at the pulmonary cartilage.

On the following morning the patient was quiet; respirations 28 to the minute; pulse 84, the beats irregular both in rhythm and force, the volume fair, and tension not diminished.

Thorax apparently symmetrical, but the manubrium very prominent, expansion equal. In front, resonance on both sides good, though on the left side flatness begins at the fifth rib midway between the nipple and axillary line, and the dulness seems here to be somewhat movable. There are numerous sibilant and sonorous râles to be heard in front. Passing down the left side and into the axilla, the breath sounds become more feeble and fine moist râles are heard. Pitch of resonance of the extreme left base is higher than at the right, and the vocal resonance is somewhat diminished.

On auscultation there are numerous coarse and medium fine râles to be heard at both bases. At the extreme left base the respiratory murmur is almost absent.

Heart: Point of maximum impulse difficult to localize; slight general heaving over the whole præcordial area; relative dulness begins above at second rib and extends well to the right of the sternum. The prominence above noted is just at the junction of the manubrium and gladiolus, and just at this point there is dulness over a very limited area. Relative dulness extends outward to a point nearly five centimetres outside the nipple. The heart-sounds are heard with the greatest intensity at the fifth space a little inside of the nipple line. There the first sound is full and booming; the second not so loud. Passing inward toward the sternum the sounds become associated with a superficial, soft, squeaking sound, diastolic in time, heard loudest over the mid-sternum, and pericardial in character. This is heard faintly all over the base. The murmur is more distinct in forced expiration than during inspiration. The second pulmonic is a trifle louder than the second aortic sound. The radial pulses are equal in volume, and there is no pulsation in the upper sternal notch; there is no tracheal tugging. The examination of the abdominal organs is negative. The urine is yellow-colored, acid, specific gravity 1024, distinct trace of albumin; several hyaline casts were found. Throughout the 20th and 21st the patient remained in much the same condition. On the 22d there was a slight rise in temperature to 100.5°; the pulse varied greatly in rate and character; at noon was slow, regular and full, from 70 to 90 per minute, and again was as rapid as 140. The patient, in many respects, was better. The œdema of the legs had disappeared. The urine had increased in quantity. On the 19th only 180 c. c., and on the 20th 350 c. c. had been passed. On the 21st and 22d the amounts were 700 and 1100 c. c.

August 23d. The temperature has been between 97° and 98°; at the morning visit the pulse was 148, regular in force and rhythm; the respirations 32. The patient was lying quietly on left side. The physical signs practically those noted above, with the exception that there is an extension of the œdema at the base of the lung. The patient died suddenly at 4.30 P. M. to-day.

Autopsy (by Dr. Flexner). Large, muscular man; moderate œdema of the legs and of the subcutaneous tissue of the trunk. Fat well retained, both beneath the skin and in omentum and mesentery.

Pericardium is adherent to the left pleura; the sac thickened and contains a considerable amount of clear serum. Both layers are covered with a thick fibrous deposit, looking like a hairy coat. The thickness of the pericardium over the heart is 3 mm. When incised the thickened layer is grayish in color, with many opaque or yellowish points scattered here and there, often continuous, and having the well-recognized characteristics of tubercles of this membrane. The heart was greatly enlarged. The valves were normal. The thickness of the left ventricle was 17 mm.; length of ventricle, 8.5 cm.; mitral orifice, 10.5 cm. in circumference. Thickness of right ventricle, 6 mm. Tricuspid orifice, 12 cm. in circumference. The walls of the auricular appendix are almost completely converted into a grayish-white material with only a thin internal film which appears like muscle. In the endocardium of the left ventricle are numerous ecchymoses. There are also a few small ones on the right ventricle and in the auricles, and on the endocardium of the auricles are a few small, round, whitish miliary tubercles.

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[3] American Journal of the Medical Sciences, [illegible]

The left pleura is much thickened; parietal and costal layers adherent in places, but where not in actual contact there is clear serum between them. The costal pleura strips up with difficulty, and is very hard and cuts like cartilage. The diaphragmatic pleura is especially thickened, and on section it is seen to be composed of a dense, almost cartilaginous, grayish tissue, containing yellow, opaque, caseous masses. The apex of the left lung is retracted, hard to the touch, and on section contains a dense, deeply pigmented connective-tissue, and old areas of caseation; no calcification. There are a few small foci of miliary tubercles, and scattered fibrous tubercles elsewhere in the lung.

The right lung is voluminous, and in the greater part of its extent free from adhesions, but the pleural surfaces present numerous grayish-white elevated masses, single and conglomerate, which can be scraped off with difficulty. The costal pleura present similar tubercles. About these there are, here and there, fresh fibrin. In the apex, the upper lobe presents a few foci of fibrous miliary tubercles.

The spleen contains a few scattered tubercles. Nothing of note in the abdominal viscera; the intestines did not present tubercles.

III. GENERAL PATHOLOGY.

The pathology of serous membrane tuberculosis turns on the avenues of infection rather than upon any special peculiarity in the lesions. Miliary tubercles, with inflammatory exudate, serous or hæmorrhagic; acute, rapidly caseating and ulcerative processes with necrosis and suppuration; a chronic fibro-tubercle, nodular and diffuse, are here met with as in the lungs and elsewhere — and the chief interest relates to the

Avenues of Infection.

(1) Doubtless a great majority of all cases of tuberculous pleurisy arise from direct infection from the lung, a tuberculous focus invading the membrane, as may be seen any day in the autopsy-room. Rapid development of a fibrinous exudate at the spot controls the extension, blocking the lines of transmission and limiting the process. Though directly excited by contiguity, the pleurisy is not always associated with an eruption of miliary granules, but may be simple. There would appear sometimes to be an antagonism between the pleural and pulmonary disease, and it will have been noted in several of the post-mortems of the cases previously given that very extensive affection of the pleura occurs with very slight or even without any disease of the lung on the side involved. The possibility of infection of the pleura by contact from tuberculosis of the mediastinum, tuberculous abscess of this part, and, indeed, from cold abscess of the thoracic wall, must also be considered.

(2) Infection through the lymphatics. It was one of the great generalizations of Bichat when he spoke of the serous membranes as "grands reservoirs," a truth demonstrated by the intimate connection known to exist between these surfaces and the subjacent lymph vessels. The beautiful investigations of Klein, Arnold, and others, have taught us the complicated anatomy of the lymph apparatus of the lungs and pleura, and also the course of the lymph streams, so that it is not difficult to understand how the serous membrane may be affected. We all inhale tubercle bacilli, perhaps not daily, but dwellers in cities and workers in hospital wards certainly inhale them very frequently, attached to the dust particles, the fate of which in the respiratory system is well known. A certain proportion in the trachea and bronchi are dealt with by the leucocytes, and are brushed by the cilia to the larynx: the sweepings of the night appear in the dark morning expectoration. Many of the particles reach the alveoli, and are here also in part attacked by the large desquamating cells of the alveolar epithelium, an important function of which is, no doubt, to help in the general scavenger work which goes on incessantly in the lungs. But a considerable number escape the phagocytes of the bronchial tree and of the alveoli, and pass through the openings in the latter into the alveolar stroma. Those from the air-cells enter the deeper lymph channels which surround the bronchi, and in their course pass through many of the lymph nodes, at every one of which they are attacked, and many of the particles remain fixed in the cells of the follicular cords or permanently imbedded in the stroma. Those particles which reach the more superficial alveoli pass into the wide sub-pleural lymph streams. Here, too, at the periphery of the lobules, as may be seen in the lung of any adult, many of the dust particles are picked out and fixed in the perilobular tissue, so that often the lobules are accurately mapped out by a line of black particles. Ultimately, a certain number reach the bronchial glands, which become gradually in all of us, as the years pass, more and more deeply pigmented. The tubercle bacilli attached to the dust particles follow these routes, and their fate depends very much upon the local conditions, which, happily for the majority of us, are not favorable to their growth. It is interesting to note, however, with reference to the mode of infection in tuberculosis, the large proportion of individuals in whose *dust-filters*, as the lymph nodes of the respiratory system may be called, tubercle bacilli effect a lodgement. Indeed, there have been important observations within the past few years to show that the bacilli may be present (without having caused any mischief) in apparently healthy lymph glands. There is direct communication between the sub-pleural lymphatics and the sac of the pleura, so that it is possible to conceive of a direct entrance of the bacilli in that way. More commonly, however, the disease spreads from a sub-pleural nodule or a lymph node in which the bacilli have grown. The wide and free anastamoses which have been demonstrated to exist in the lymph vessels of the pulmonary pleura favor the rapid diffusion of the virus under suitable conditions. Possibly, too, in

some instances, direct infection may take place from the bronchial and tracheal lymph glands. Under all these circumstances it is the visceral layer of the pleura which is involved. The lymphatics of the parietal pleura have wide and extensive communications, discharging as they do partly into the lymph glands along the vertebræ, and partly in the anterior mediastinal group, along the internal mammary artery. Infection may come from the lymphatic glands in the neck, particularly the supra-clavicular, which communicate freely with those of the axilla and of the sub-maxilla. Infection of the pleura in tuberculosis of the glands in these two groups, has been frequently noted, and has been made the subject of a special essay by Hernandez.

In rare instances the disease may extend to the pleura from tuberculous caries of the bones in the neighborhood. An interesting instance of this was reported to the Johns Hopkins Hospital Medical Society by Dr. Flexner last winter. A colored man, aged twenty-four, had a sinus in the neck which led to an erosion, involving the outer third of the right clavicle. The supra clavicular glands in the neighborhood were involved, particularly the group between the clavicle and the upper border of the pleura, which were enlarged and caseous. The right costal pleura was greatly thickened, firmly united to the visceral layer, except on the diaphragmatic surface on which there was a cavity the size of an orange filled with a sero-fibrinous exudate.

And lastly, the pleura may be infected through the wide communications which exist between the lymphatics of the peritoneum and those of the diaphragmatic pleura, and the lymphatics of the mediastinum.

IV. DIAGNOSIS.

A disease presenting clinical variations so extreme as those which I have attempted to portray must necessarily offer at times serious difficulties in its detection. At the outset, it may be frankly acknowledged that often in cases of acute sero-fibrinous pleurisy, coming on with chills and fever and gradual effusion, we have not the data upon which to base a diagnosis. Neither the appearance of the individual, the family history, the onset, the course, or the character of the exudate may be in any way suggestive. On the one hand, there can be no question that many instances, as in Case I, so often referred to, occur in robust individuals of previous good health, with all the characters of pleurisy *a frigore;* and yet the subsequent history may point very clearly to the fact that the process has been from the outset tuberculous. On the other hand, the view which has of late found so much favor, that a large proportion of all acute pleurisies are tuberculous, is certainly unfounded, as shown by the post-mortem notes already referred to, in which non-tuberculous pleurisy of one form or another was present in two-thirds of an unselected series of cases from medical wards. I have already called attention to the points to be specially investigated; the antecedents, family and personal, the careful inspection of the groups of lymph glands contiguous to the pleura, the repeated examination of the expectoration, which may contain tubercle bacilli from even a very small focus of softening tubercle in communication with the bronchus. On more than one occasion it has happened that their discovery after repeated examination has cleared up the nature of an obscure pleurisy; and it is worth noting that in Case I the only spot of softening from which the tubercle bacilli could have come in any numbers did not exceed the size of a hazelnut, and was in the lung on the side opposite to that of the effusion. The physical characters of the exudate offer in a majority of instances nothing distinctive. A hæmorrhagic exudation is suggestive but by no means distinctive, inasmuch as it may occur in cancer, or it may occur with ordinary simple pleurisy, as in two instances in our list. It is important to note that the effusion may be hæmorrhagic in either a chronic or in an acute form. I call to mind one instance in which the presence of hæmorrhagic exudate led us to suspect a terminal tuberculous pleurisy, but there were no tubercles on the membranes.

The bacteriological examination has been made now so frequently in acute pleurisies that there are facts enough at our disposal to warrant a somewhat definite opinion, and the general conclusion is that, except in very rare instances, the serous exudates are sterile, and tubercle bacilli have only been detected in a very moderate number, in only 32 cases, according to the recent article of Prince Ludwig Ferdinand of Bavaria. The inoculation of the exudate into the peritoneum of the guinea-pig, which has been practised in many cases, also gives variable results, but when positive is of great value.

The inoculation with tuberculin is, as mentioned, uncertain, and I may state here an instance in which it led us into error. Just as we were beginning to try it the late Dr. Christopher Johnston sent into the wards a young woman aged about twenty-eight or twenty-nine with a bunch of enlarged lymph glands on the left side of the neck and the axilla. She was fairly well nourished and made no other complaint but of gradual and progressive enlargement of these groups during several months. Within ten days or two weeks after admission a pleurisy developed on the same side, which we very naturally thought to be tuberculous. She was treated with injections, and the reaction on each occasion was particularly active. No benefit, however, followed them, and some weeks later she went to her home, where she shortly afterwards died. The autopsy, performed by Dr. Councilman, showed cancerous lymph glands in the sub-clavicular and axillary regions and extensive cancerous pleurisy — the primary disease being a nodule of carcinoma about the size of a walnut in the left breast. Some months subsequently, in illustration of the curious coincidences which we all meet in practice, I saw a case presenting striking similarities in the practice of Dr. Burns, of Toronto, also in a comparatively young woman, but the infiltration about the pectoral muscle called my attention to the condition of the breast.

The diagnosis of the purulent form of tuberculous pleurisy is less difficult. A proportion of these, at least 75 per cent., depend upon infection with streptococci, the pneumococci, or the staphylococci. The tubercle bacillus may be present and in some acute cases, as in the one referred to, very abundant in the pus. In other instances, definitely proved to be tuberculous, staphylococci have been present, and sometimes the effusion is sterile. The course may be extremely suggestive, and it has long been known that the latent variety of empyema is not uncommonly tuberculous. As already mentioned, the fluid may not be truly purulent, but the turbidity due to the presence of large quantities of fatty material.

And lastly, a great difficulty in diagnosis may exist in these cases of sero-fibrinous pleurisy which recover with thickening of the membranes and persistence of flatness at the base. The most suspicious instances are those in which the fluid constantly recurs in spite of repeated tappings, and in which, with diminution apparently in the amount of exudate, the flatness persists, usually with transmission of the tactile fremitus, and sometimes, as time proceeds, marked flattening of the affected side. The records of Cases I, IX and XI show a sequence of events only too common. Possibly some of these cases, with flattening at the base and slight retraction, heal, and no further trouble occurs. Certainly they are not always tuberculous, such a process may follow a simple sero-fibrinous pleurisy or an empyema. Thus in a young woman aged twenty-three, who was admitted to my wards November 17, 1890, with the right chest flattened behind and at the sides, with dulness at the right base and curvature of the spine (and who died of anæmia associated with syphilis of the liver, and lymphatic nodules), the right lung was firmly adherent, the pleural membranes were thickened, particularly at the extreme base, and between the thickened layers there was a cavity containing about 70 c. c. of an opaque, whitish fluid. The cavity presented adherent calcareous flakes, and there was no caseation. Such instances are by no means uncommon in post-mortem work, and unquestionably contraction and flattening at the base and slight drooping of the shoulder may persist for an indefinite number of years without leading to any more damage than perhaps a progressive bronchiectasis in the lower lobe. Clinically, too, these cases are not very infrequent, and though one may have a suspicion from the history, yet good health may be maintained for many years and evidence may be entirely wanting of any tuberculous process.

V. TREATMENT.

The indications are twofold: first, to limit and control the exudate and to promote its absorption. It would take me far away from the immediate subject to discuss here in full the therapeutics of pleural effusion. In the early stage it is sufficient to allay the pain, if severe, with opium, to reduce the fever, if high, by sponging, and to keep the bowels freely opened. It is doubtful whether the salicylates deserve the confidence which many claim. To promote absorption various measures are advised. It is important to remember that when fluid remains in the chest it is for the very good reason that it cannot get out, owing to blocking of the lymph paths. Absorption from the pleura goes on, as has been shown experimentally, with extraordinary rapidity, chiefly, if not entirely, from the costal layer. Probably in all instances of pleurisy with effusion, do what we may, the absorption has to wait the freeing of the obstructed lymph channels. I still believe that good results are seen by putting the patient on a dry diet and giving brisk, saline cathartics. It is a rational practice, and in some instances I have seen the exudate diminish rapidly. The diuretin, when it acts, is useful in the same way. If at the end of ten days the exudate persists, and is at the level of the fourth rib in the erect posture, aspiration is advisable, and it may be repeated again in a few days if the fluid reaccumulates. So far as I know, there are no greater risks in the tuberculous than in the simple sero-fibrinous cases, and it is very important to relieve the lung early of the compression to which it is subjected by any large quantity of fluid. I think, however, the risk of the compressed lung becoming the seat of tuberculosis is not very great; more serious is the danger lest it should become bound down by such firm adhesions that it cannot expand. Gentle counter-irritation of the skin is probably beneficial in these later stages, stimulating the lymphatics of the costal pleura.[4] In the cases of chronic sero-fibrinous effusion with thickening of the membranes the fluid reaccumulates rapidly, and aspiration may have to be performed very many times. In these instances systematic pulmonary gymnastics should be practised. The expansive efforts of forcing water from one large Wolff's bottle to another is a good method. When the exudate is purulent the case should be transferred to the surgeon for thorough drainage.

The second indication is to improve in every way possible the general nutrition of the patient, so as to favor conditions promoting the healing of the tuberculous process. No doubt, as in pulmonary and peritoneal infection, many instances of tuberculosis of the pleura recover and leave no more damage than that associated with slight thickening of the membrane. A life in the open air, regular habits and exercise, a nutritious diet, and the use of the remedies which promote in every way digestion and the assimilation of food should be advised. And finally we may lay to heart the words of Sir Andrew Clark: "When we have a patient with basic fibrinous pleurisy, let us hold him fast, restrict his freedom and treat him carefully until every remnant of it is gone."

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Original Articles.

THE TREATMENT OF PNEUMONIA.[1]

BY F. C. SHATTUCK, M.D., OF BOSTON.

Twenty years ago the profession generally held that croupous pneumonia is rarely fatal, except in the aged or in those whose constitutions are weakened by alcoholic or other excess. At that time the doctrine that the disease is a local inflammation of the lung, to which the general disturbance is secondary, was just beginning to give way to the view that the lung process bears much the same relation to pneumonia that the affection of Peyer's patches does to enteric fever. At present there seems to be a disposition on the part of some to return to the local disease doctrine, though, of course, in a different form, and to class pneumonia with diphtheria and erysipelas.

To-day there is certainly a dread of pneumonia among the laity, and, I think, the profession feels less confidence in the power of youth and vigor to withstand the disease than it formerly did. Has pneumonia changed its type in the last fifty or in the last five years? Has the resistance of the population diminished? These are questions which have been often asked. That which first led to their asking was the revolution in treatment, and particularly the abandon-

[1] Read before the Massachusetts Medical Society, June 13, 1893.

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[4] The relation between the subcutaneous and pleural lymphatics must be very close. A fluid containing colored particles in suspension, injected beneath the skin in the axillary region of a rabbit, finds its way to the costal lymphatics, and the anterior mediastinal glands become stained. (Canada Medical and Surgical Journal, 1875. Article on Anthracosis.)

ment of venesection. We wonder how our predecessors could have bled, purged and puked patients whose every scrap of strength we seek to save. But they also treated consumption antiphlogistically. As far as we can reason from analogy it does not seem probable that the disease has permanently changed character. We do not think that other specific diseases have so changed in this period. If they have changed at all they have become less rather than more fatal.

The valuable paper of Townsend and Coolidge[2] shows that in the Massachusetts General Hospital there has been a marked increase in the mortality from pneumonia; but that this increase, when carefully studied, cannot be attributed to the change in treatment, and probably not to any change in the disease itself.

It seems to me that factors which are very important, but which do not easily lend themselves to satistical inquiry, are the great change in the character of the population, or perhaps still greater change in its manner of life, both poverty and luxury having greatly increased; and the wear and tear of the nervous system incident to modern commercial and domestic methods, which has been multiplied many fold. Cities have grown large. The very poor have a better water now than many of the well-to-do had in the days of contiguous wells and privies. But it is far otherwise with the air, whether in or outside the house. I must not, however, pursue these questions further, though they have an obvious bearing on therapeutics and its results. And I can only allude to the influence of grippe on pneumonia. The former seems to prepare the way for the latter only indirectly by lowering the resisting power. Influenza thus renders a person more liable to pneumonia, and also probably diminishes his chances of recovery.

Pathology and therapeutics do not always go hand in hand. In some diseases our pathology is ahead of our therapeutics: in others the reverse holds true. We began to treat pneumonia as a general disease before we knew it to be such, and we were convinced that it must be such before we knew of the existence of the diplococcus or toxines and anti-toxines.

The fruit of bacteriological discovery is not yet ripened, though, as we shall see later, there is reason to hope that ripening may be in process.

As far as prophylaxis goes we cannot as yet accomplish much. We can caution convalescents from other and milder affections, especially during the season to which experience shows us pneumonia is most incident. We can warn our patients at these seasons not to treat lightly severe colds. We can "preach the gospel of hygienic righteousness," as the late Dr. George Derby put it.

No method of aborting the disease which has yet been proposed has made good its claims. Pneumonia, like typhoid fever, may abort spontaneously. But we cannot make it do so. Still, it seems to me that the method of Pétresco, of Bucharest,[3] is worthy of trial. Since 1883 he has treated 755 cases of pneumonia with very large doses of digitalis from the time they first came under observation. He gives for two or three days a strong infusion, and claims to be able to cut early cases short, and to influence very favorably more advanced cases. His mortality now is only 1.22 per cent. He gives from one to two drachms of the leaves daily, the equivalent of one to two ounces of our tincture. In like manner we have had no distinctly curative treatment, though we are encouraged to hope that the injection of immune blood serum may prove to be such after further trial. In short, our efforts are at present confined to promoting the comfort of the patient, and conserving his forces in every way to enable him to outlive the self-limited disease. This in itself may be much.

For the better application of this general principle it will be more convenient to divide the disease into stages, remembering always that these divisions are arbitrary, and that nature does not seem to feel herself bound strictly to abide by them. Patients very rarely succumb to the stage of invasion or preliminary congestion of the lung with active implication of the pleura. The danger here is not of dying; it is rather of loss of strength, which may be sorely needed later. The indication, therefore, in the ordinary case is to relieve the pain, to put the patient to bed and freely open the bowels, just as the mariner prepares his ship for an impending hurricane. The severity of the pain and any known or ascertainable peculiarity of the patient will decide the character and amount of the means for its relief. In the early days, at least, there can be no question of the safety of morphine, which should be used freely and frequently, hypodermically. Restlessness and an excited nervous system call for morphia nearly as loudly as does pain. Dyspnœa in the average case is at this stage due far more to the pleuritic pain than to the state of the lung, But now and and then we see a case in which so much lung tissue is so rapidly invaded that the heart finds it difficult to adjust itself to the changed condition, and greatly oppressed breathing results. In such a case nothing gives such prompt relief as venesection, the freedom of which is to be proportioned to the age and vigor of the patient and its effect on the symptoms. With the veratrum viride treatment of the Philadelphia school I have no personal experience. If internal antipyretics are to be used at all in pneumonia it is only during the first stage that they are admissible. I am no friend of them myself, and never use them in this disease. Even the best of them is somewhat depressing to the heart.

During the prevalence of the old doctrine of the nature of pneumonia and of inflammation, treatment was naturally addressed to the diseased organ, and antiphlogistics were used externally and internally. We now recognize the fact — or believe it to be a fact — that the cause of death in the second stage is rarely asphyxia as a result of the amount of lung involved. The loss of function of a portion of the lung plays in most cases a rôle which is quite subordinate to that of cardiac exhaustion, dependent probably on the influence of toxines on the innervation of the heart rather than on changes in the myocardium. That it is mainly a toxæmia which weakens the heart and not simply the mechanically increased resistance in the right chambers, seems to be proved by the great fall in the pulse, as well as the breathing, coincident with crisis, although the physical signs over the affected lung area may show no appreciable change.

It is then the maintenance of nerve force which we must try to secure. This means the avoidance of every unnecessary fatigue and the administration of the largest amount of the most nutritious liquid food which can be digested, with free ventilation of the apart-

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[illegible]

ment. It seems to me that the poultice and the envelopment of the chest in cotton or wool are relics of the old pathology. The poultice is the worse, as its frequent change involves notable fatigue and its weight is not insignificant. I have no experience with the application of ice, which seems to be gaining favor in this country after long use in Germany, to which country we are more apt to look for pathological than for empirical therapeutic suggestion. With regard to food and feeding, I do not propose to go into any detail. But I do want to enter a plea for greater freedom of ventilation than is generally allowed. Here, again, the old pathology seems to me still to influence the medical as well as the lay mind. I am convinced that courage in facing popular prejudice against cold air, and less reverence for the seventieth degree of the thermometer would subserve the interests of our patients and diminish the bills for oxygen. If I should be so unfortunate as to contract pneumonia, I trust that my doctor will put me in a sunny room and give me the benefit of a combination of open fire and open window. It is not pleasant to be accused justly or unjustly of killing our patients, and I must plead guilty, I fear, to a lack of the full courage of my convictions on this point. In the case of a very rich man whom I saw repeatedly in consultation last winter, and who wished no expense to be spared, I soon found that it was useless to try to get a window open. Nor did I succeed in getting even an open fire. But cylinder after cylinder of oxygen was breathed with avidity.

The use of morphia in the first stage has been already touched upon. Experience is leading me to think that it should be used more freely in the second stage than is customary. Here it is not called for by pain so much as by restlessness, cough and sleeplessness. In any given case we must try to estimate the proportion of danger from respiratory failure. The smaller this danger the more freely can we use morphia, which will do more good in resting the nervous system than harm in other ways. And even in cases where the danger of respiratory failure cannot be disregarded, but morphia is indicated on other grounds, I believe that the inhalation of oxygen enables us to give morphia when we might otherwise feel compelled to withhold it. With oxygen, of late years, I have had considerable experience. I have seen it given freely, and without regard to expense. But I can recall only one case in which I feel reasonably convinced that it saved life — that of a Harvard student whom I saw with Dr. Hildreth. Even here we had to deal with a patient whose age should have ensured his recovery according to the books. In many cases I have seen it give marked relief. Our experience with this gas is now sufficient to enable us to estimate its value better, and to use it more intelligently than a few years ago. Physiologists kept it out of use longer than we should have allowed them to do, telling us that the consumption of oxygen is no greater when the pure gas is inhaled than it is under ordinary conditions. Even if this is true of the well, it does not follow that it is also true of the sick. I suppose to-day clinicians are agreed that oxygen may be useful when a sufficient amount of air to arterialize the blood is prevented from reaching the alveoli, a condition which is present in some cases of pneumonia as the result of excessive secretion in the bronchial tubes in combination with the lung consolidation. Cyanosis is, therefore, the best single indication for oxygen. In such cases it should be used early, and as freely as the purse of the patient will allow. Unfortunately, it is still a very expensive remedy. But it is my feeling that its usefulness is wider than would appear from the above. I think I have seen refreshment, quieter respiration, a fuller pulse, and diminished restlessness, perhaps sleep, follow oxygen, even where cyanosis was absent or slight. I have asked myself the question whether the gas may perhaps act as an aid in the combustion of toxines, all compounds of unstable character, I believe. The other chief means of stimulating the flagging heart, as reflected in the pulse and the character of the sounds, are alcohol, strychnia, cocaine, digitalis, and other heart tonics. I shall not delay to speak further of alcohol, as I think we are all pretty well agreed as to its usefulness and the indications for its employment. Strychnia has grown in favor of late years, and I think justly. It is best given hypodermically, and, in severe cases, to the limit of toleration, one-twentieth to one-fortieth of a grain every three or four hours. H. C. Woods speaks highly of cocaine as an adjuvant to strychnia.

All writers advise, and all practitioners use digitalis or one of its congeners, if there are any indications of a failing heart. I have so used it constantly, but must confess that I do not feel perfectly clear as to its usefulness as it is ordinarily given. Perhaps we do not use it in large enough doses. I am sure that we should use it hypodermically more than we do. I have this year seen prompt and distinct effect in several cases follow hypodermics of thirty minims of the tincture. Pétresco's results are confirmatory of the idea that our doses of digitalis are often insufficient. An editorial writer in the *Therapeutic Gazette*, in 1892, in speaking of Pétresco's paper, which he evidently did not read with care, thinks that pneumonia must be a different disease in Roumania from that which we see, and that the digitalis must be of poor quality. The first supposition is highly improbable, and Pétresco has anticipated and answered the second. He notes repeatedly a pulse-rate of 36 to 48 within thirty-six to seventy-two hours after the digitalis is begun, and has supplied himself from the best houses in Paris and Berlin as well as from native sources.

With the cold bath and cold wet pack as remedies against high fever, delirium and other nervous symptoms, I have but slight personal acquaintance. A period of the disease which we all recognize as one of much danger in some cases is that immediately following the crisis. Exhaustion or collapse at this time calls for rapid stimulation; alcohol and ammonia internally, heat to the surface, brandy and ether under the skin.

In cases terminating by lysis, and in delayed resolution, a supporting treatment is to be carried out according to the indications presented by the case in hand. The frequency of empyema as a sequel to pneumonia, is never to be forgotten, if for no other than a therapeutic reason.

Lépine[4] has recently employed with success injections into the thighs or arms of oil of turpentine, when he feared that gray was passing over into yellow hepatization. Fochier first suggested and practised this method in puerperal septicæmia, having noticed that improvement took place when a focus of pus was established. The turpentine produces an abscess — "of fixation," Fochier terms it — which can be opened ater. [illegible] and Bard have each practised the method in pneumonia, with recovery in both cases. Others in France have also used it a few times, but I have not been able to get access to the journals in which the reports appeared.

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[4] La Semaine Medicale, 1892, p. 77.

In three desperate cases in my service at the Massachusetts Hospital, this winter, I had turpentine injected, in one case on the ninth, in two on the seventh day of the disease. All three died, as seemed certain that they would, whatever was done or not done. I do not think that these cases should really count for, or against the method.

For therapeutic purposes cases of pneumonia may be divided into three classes. First in frequency are those cases which will recover under any treatment or no treatment, unless they are grossly mismanaged; second, those which will die in spite of any and all treatment known at present; third, those in which judicious treatment may turn the scale.

Our object is constantly to strive to enlarge the third class at the expense of the second. Thus far, our efforts have been unsuccessful enough, it must be admitted. But, however sceptical we may be, we should not be hopeless, or refuse to listen to those who bring forward new methods, with an underlying basis of reason and fact. One method of curative treatment has been recently introduced which can claim an encouraging though limited success in practice, as well as foundation in analogy — with tetanus, for instance. Only one case has been reported thus treated in this country, but it would seem our duty to lose no further time, and I propose to test the method in my wards next autumn and winter.

I refer to the injection of blood serum from a human being who has recently passed the crisis of pneumonia, or blood serum or fluid derived from animals rendered immune to experimental pneumonia by the injection of pneumococcus cultures. I will not take your time by going into the details of this method and its technique. The articles of the Klemperers,[6] and others in Germany and Italy who have tried it, are accessible enough. Suffice it to say that the purpose is to induce the crisis artificially, and that of thirty-nine cases thus treated, collected for me from literature by Dr. R. C. Cabot, all save one recovered. Whether the pneumotoxin and antipneumotoxin theory of its mode of action is final or not, remains to be seen. In the sole American case[7] defibrinated blood was used, with results which do not encourage a second trial.

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THE RELATION OF HOSPITALS TO MEDICAL EDUCATION.[1]

BY HENRY M. HURD, M.D.,
Superintendent of the Johns Hopkins Hospital.

IT is not my purpose to argue the duty of hospitals to promote medical teaching. They have always contributed to it and always will, in an increasing degree, as medical education becomes better organized and more efficient. The hospital, whether avowedly so or not, has always been a school of medicine, sometimes to the few who were attending physicians, resident physicians or internes, and sometimes and now, I am glad to say, more often to those who are pursuing medical studies. The relation of hospitals to medical education has been reciprocal for good. Medical teaching has improved hospital work and hospital work, on the other hand, has improved medical teaching. Neither can exist without the other. It is my purpose, in this brief paper, to point out methods whereby hospitals can best subserve medical teaching and to emphasize the duty of promoting it. A hospital which does not contribute to the advancement of medical knowledge by bringing the results of its investigations and experience to the training of medical students in the plastic stage of their education, fails to attain its highest good or to surround itself with the brightest investigators. The duty being apparent, to point out the best method of attaining the desired end must be the sole object of the present inquiry.

(1) *Pathological Institutes.* — First in importance I would place the organization of a good pathological institute in connection with every hospital. By this I mean much more than an autopsy room and a museum for the preservation of morbid specimens. These are valuable, but their work is not of prime importance compared with what may be accomplished by systematic investigations in all branches of pathological study. Facilities should be afforded for the study of every morbid product. There should be opportunities for systematic bacteriological examination of pus, serous effusions, the products of inflammation, the bodily secretions and excretions, false membranes, new growths and the like. The diagnosis of diphtheria and of follicular tonsillitis, for example, should here be made by cultures, cover-slip preparations and the microscope. The different forms of peritonitis should be differentiated similarly. The effusions of pleurisy should be studied bacteriologically to determine the presence or absence of the tubercle bacillus. Malarial fever should be differentiated from other forms of continued fever by the presence of the plasmodium. The micrococcus lanceolatus, otherwise known as the pneumococcus, should be searched for in pneumonia and cerebro-spinal meningitis. Such studies are impossible unless rooms are provided, specially fitted up with apparatus, instruments and trained observers constantly at hand for the purpose. These studies give a definiteness to diagnosis by excluding possible diseases of other origin; and certainty to prognosis.

The microscopic study of tumors and new growths while an operation is in progress and before its completion, is of equal value. Three examples drawn from actual occurrences in a Baltimore hospital, will serve to make my meaning clearer. A patient with a suspicious abdominal tumor, presumably malignant, had submitted to an exploratory operation and a frozen section, while she was on the operating table and before the operation was completed, showed the growth to be tubercular in character. The cavity of the abdomen was drained and washed out with a sterilized salt solution and the patient made a good recovery. A second patient seemed to be suffering from a simple abscess of the breast, but a bacteriological examination of the contents of the abscess cavity showed that the inflammation was tubercular in character and led to the examination of the surrounding tissues, which were found to be filled with tubercle bacilli. A radical operation for the removal of these diseased tissues then followed and a condition was found present which justified a grave prognosis. In another case a culture made during a severe abdominal operation, subsequently showed that a chronic peritonitis had been caused by a virulent streptococcus and led immediately to the isolation and separate nursing of the patient to prevent the infection of the ward. Such instances are of daily occurrence and the wisdom of these expert examinations is fully established by repeated experience.

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[1] Read before the Hospital Section of the [illegible]

[6] [illegible] p. 533.

[7] [illegible]

In dressings, also, subsequent to surgical operations, similar sources of infection are revealed by bacteriological examinations; and the communication of infection to other patients may be prevented by the knowledge thus acquired. This work, while of prime importance, ought not to impede the true work of a pathological laboratory, which is to study the origin, course and effects of disease upon every organ of the human body. Every large hospital ought to have a paid pathologist, whose whole time should be given to this form of study and he should be provided with a sufficient number of assistants to do this work thoroughly. Diseased tissues and organs should be examined in gross at the autopsy table and afterwards the material should be studied in frozen sections and by hardened specimens. Cultures should also be made post-mortem of all products of inflammation to determine their precise character. These studies clear up obscure diagnoses and lead to the more successful treatment of other cases.

(2) *Clinical Laboratories.* — Every hospital ought also to have a clinical laboratory for blood examination, urinary analysis, the examination of the stomach contents and the examination of fæces and sputum. The blood should be examined, as a matter of routine, in all forms of wasting disease. The value of the methods of Ehrlich in the different forms of leukæmia is attested daily by practical observation. The differentiation of malarial from typhoid or other forms of continued fever, is frequently only possible when the plasmodium has been demonstrated in the blood. The importance of a bacteriological examination of cholera stools for the presence of the comma bacillus, has been recently demonstrated in the late cholera epidemic in Europe. The equal importance of searching dysenteric stools for the presence of amœbæ coli has been demonstrated many times in the Clinical Laboratory of the Johns Hopkins Hospital during the past year. Abscesses in the liver and lungs and one jaw abscess have thus been shown to be dependent upon this protozoan. The confusion which exists in the profession to-day, regarding malarial hæmaturia, can only be cleared up by similar expert examinations. In such clinical laboratories syphilis often needs to be differentiated from tuberculosis by the microscope. Skin affections also, like urticaria, favus, the different forms of dermatitis, tinea versicolor and tuberculosis need to be similarly studied. The presence of the otomycosis aspergillus in ear affections can only be definitely shown by the microscope. The tetanus bacillus, the streptococcus of erysipelas, the staphylococcus of suppuration and the pneumococcus of pneumonia and meningitis should also be similarly demonstrated when present. In no other manner can medical education be made definite and thorough. The day of theories and brilliant hypotheses to account for many of these diseases is past and demonstration ought to replace them.

(3) *Operating Rooms.* — Every hospital of any size, and especially a hospital to which medical students have access, should have surgical operating rooms arranged for carrying out a perfect surgical technique. Here should be consistent and constant efforts to reduce the danger to patients from the infection of wounds to the minimum. These operating rooms should be object lessons in thorough surgical cleanliness. There should be apparatus for hand disinfection and facilities for scrubbing and cleansing the hands. Every step in the technique of antiseptic surgery should be carefully prescribed and followed. It is now evident that infection of wounds does not come through the air or from atmospheric conditions, but rather from actual contact. Pus-producing germs gain access to wounds at the hands of the operator or his assistants or by infected instruments or ligatures or through infected skin-stitches or by subsequent dressings. Hence, it is of the utmost importance that the technique pursued in every hospital operating room be thorough and consistent to the end that every person may know the reason of the procedures adopted. Students and physicians should be trained to appreciate understandingly what is harmful and to be avoided and what is harmless and permissible. It may be asserted with confidence of no successful contradiction that, in the technique of many surgeons, unnecessary precautions are frequently taken and necessary precautions are as frequently omitted from a lack of adequate knowledge of the true sources of infection. These can only be adequately taught by bacteriological methods. Ligatures, instruments, bandages and all forms of dressings should be sterilized in such a way as to meet every bacteriological requirement. Cultures taken from the first dressings, made subsequent to an operation, should not grow upon any form of culture media. Experiments which have been made in wound infection have clearly demonstrated its sources and its methods of prevention. Each operating room should be as carefully arranged to carry out antiseptic precautions as the laboratory of the bacteriologist. More than this may also be asserted. Every operating room ought to pursue careful and systematic experiments upon hand disinfection. No one believes that an ideal excellence has yet been attained. These fruitful experiments are alone possible in large operating rooms with frequent operations and abundant facilities for carrying on the work thoroughly. It is most gratifying to call to your attention the fact that two large operating rooms have lately been constructed in New York with every facility for this systematic work. If they contribute, as they undoubtedly will, to the simplification and perfection of surgical technique, their erection will fully justify the outlay, as large as it may seem to the unthinking critic.

(4) *Photographic Rooms.* — An equally important part of the educational outfit of a general hospital should be a well-constructed and well-arranged room for photography. Here medical men should be trained to do photographic work in the various departments of hospital service. Each man should be taught the manipulation of cameras and photographic plates, and should learn methods of developing, printing, enlarging, etc. Photo-micrography has proven a very disappointing branch of photography. A poor drawing which accurately portrays what the observer sees is generally much to be preferred to the most finely finished microphotograph with its blotches of color and flattened surface. Not so, however, with what may be termed

gross medical photography. Its field of usefulness is apparently limitless. Many surgical conditions should be photographed upon the spot, even while an operation is in progress. The rapidity and accuracy with which newly-discovered or newly-recognized forms of disease have been made known to the medical public, are well shown by the disease known as acromegaly. Although this disease was first differentiated and described by Marie, in 1886, its peculiar *facies* became at once familiar to physicians throughout the world by the excellent photographic reproductions which were distributed, and to-day it is easily recognized wherever found by medical men who have never been shown a case. In a similar manner cases of myxœdema and the various forms of paralysis have been accurately portrayed, to the great advantage of the student of medicine. Photographs of skin diseases, deformities, muscular atrophies and hypertrophies, ulcers, tumors, aneurisms, surgical operations, surgical methods and surgical dressings, perpetuate these conditions much more clearly and satisfactorily than pages of description. In many instances these representations are sufficient to enable the observer who has not seen the case to confirm the diagnosis.

(5) *Charts and Graphic Representations ; Histories.* — Allied to photography are the various forms of charts and graphic representations. These should be made with absolute accuracy and regularity, and should form permanent records in the hospital. The same is true of medical histories, which ought to be made up daily at the bedside. Such medical histories should be classified, indexed, catalogued and rendered accessible so that any fact of medical interest may be referred to at a moment's notice. There should be a medical staff large enough to do this work thoroughly well. The influence of these careful records upon medical knowledge can hardly be estimated; their greater influence in training medical men connected with hospitals, to habits of careful, painstaking, exhaustive observation and faithful records of the same, is undeniable.

(6) *Dispensary Work.* — The position of carefully conducted medical work in dispensaries or departments for out-patients in training medical men is well recognized. The patients who present themselves for treatment at these clinics, more nearly represent the patients with whom physicians come into daily contact than ordinary hospital patients. Hence the same necessity in dispensary practice of training students in habits of quick, accurate and thorough diagnosis and of painstaking records of the clinical facts which are obtained. Clinical methods and clinical records ought to be as systematic and complete in the dispensary as in the hospital. The facilities afforded by a dispensary for the study of physical diagnosis are, if anything, more valuable than those of a hospital. The same is true of the opportunity for learning the methods of diagnosis in minor surgery and the application of the ordinary surgical dressings. Practical work in the diagnosis and treatment of diseases of women is here feasible, and under competent supervision often proves most valuable. The opportunities for studying the specialties of medical practice are also of extreme value and should be utilized regularly. Every department of a dispensary ought to be under competent and expert medical supervision, and all branches should be so conducted as to promote the training of students. The practical difficulty in many dispensaries is that the clinical material is not properly utilized.

(7) *Libraries, Reading-Rooms, Societies and Journal Clubs.* — Every hospital should foster a good medical library and a reading-room filled with the best and latest medical periodicals, and all members of the staff should be expected to use them, and should have time to do so. In most hospitals the medical men are sadly overworked, and through a superabundance of routine work lose all time, and too often all inclination, for medical reading or study. The advantages of a medical society and of a journal club are too obvious to require more than a mere brief mention. These organizations should exist in the staff of every large hospital.

(8) *Medical Staff.* — A careful consideration of the subject leads me to urge that all large hospitals be furnished with an increased medical staff, and that the terms of service of a portion, at least, of the medical men be considerably increased. It is evident to all who have watched hospital work, that the usual term of service extending over a period of twelve, sixteen, or eighteen months, brings active young men fresh from medical schools into hospitals to send them out to give place to other inexperienced young men about the time they are fitted to do independent work. The hospital, consequently, suffers from the mistakes which they make while they are receiving training, and by an inexorable rule loses their services as soon as they are fairly well trained to do efficient and fruitful work. This difficulty would be removed if arrangements could be made to give all fourth-year medical students routine hospital duties under competent supervision. This would train them in practical work to such an extent that when they assumed hospital appointments they would be fitted to undertake independent work, and could supervise the work of other fourth-year men wisely. In each department of hospital service a chief resident should be appointed whose term of service should extend over a period of at least three years. This would enable him to fit himself thoroughly for giving instruction to all assistant resident physicians, and to wisely direct their work. Such service is possible in European hospitals, and if a similar service could be inaugurated in the leading hospitals of this country it would mark a decided advance in hospital work.

In conclusion, I would urge the duty upon every hospital of doing every branch of hospital work as well and as thoroughly as it can possibly be done. If philanthropy recognizes it to be a duty to care for the sick poor and to minister to their comfort by convenient, well-appointed, well-ventilated and well-warmed apartments, the same duty demands that their medical care shall be equally thorough, painstaking and scientific. The best should be constantly striven for; and nothing but the best should satisfy those who are charged with their care. Every hospital should be an object-lesson in the proper care of the sick. It should demonstrate the best methods of medicine, surgery and gynecology, the most approved nursing, the best cooking for invalids and their kindest care.

In India, 21,389 persons were killed by snakes in 1891, as compared with 21,361 in 1890. It is said that in many places in India snakes are bred with the object of getting the government reward for all snakes killed. The abuse is so great that it is proposed to abolish the system of rewards.

Clinical Department.

ABSCESS IN THE CEREBELLUM.

BY J. A. KENEFICK, NEWPORT, R. I.

ON the evening of June 28, 1892, a tall, robust Englishman, aged twenty-three, called at my office and complained of a severe pain in the top and left side of his head. He gave no other symptoms. There was no specific history. His temperature and pulse were normal, tongue slightly furred, skin and eyeballs slightly jaundiced. Had been employed as assistant steward on board a yacht for the past two months, and during this time he has not felt exactly right, and attributed it to the life on ship-board. He has also grown deaf, and his mates say he seemed duller and less active, being threatened with dismissal for his stupidity.

Phenacetine, calomel and small doses of morphine were prescribed that night, but gave no relief; the next morning he appeared in the same condition.

Fearing typhoid, he was advised to enter the Newport Hospital, and was admitted during my service. The next day, June 30th, at 10 A. M., pulse 88; temperature 97°, the pain still persisting. At 4 P. M., the pain had left the top of the head and centred at the base of the brain, the pulse now being 80, and the temperature $100\frac{2}{5}$°. 8 P. M., temperature 101°, pain increasing; patient restless and wakeful, morphine one-eighth of a grain hypodermatically, gave two hours sleep, when he awoke vomiting greenish matter, and complained of increasing deafness.

July 1st, 8 A. M., temperature 99°, and remaining so until the evening, when it reached 101°; the pain again increased, causing the patient to moan constantly unless under the influence of morphine.

July 2d. There was no evident change in his condition; his pulse and temperature were the same; he retained his nourishment and bowels were regular and normal. At 2 P. M., he became delirious, and at 4 P. M., his temperature was 104°, and pulse 88, with marked tenderness in the right iliac region. Phenacetine, five grains, was given every two hours, and at 8 P. M., temperature registered 102°, and there had been some diarrhœa, light in color.

The course of the temperature, the presence of clay-colored stools, iliac tenderness and deafness suggested typhoid fever, but his general appearance was rather against it, and a diagnosis was withheld.

July 4th, at 12.30, he had his first and only chill, lasting three-quarters of an hour, followed by a profuse perspiration, but no rise in temperature. For the next few days he remained fairly clear, mentally, had an irregular pulse and temperature, and was kept comfortable by injections of morphine.

The morning of the 7th, he sat up in bed, his head bent forward on his chest, and complained of slight muscular rigidity. He could, with some assistance, resume the horizontal position, but only for a moment, as it gave him severe pain. The continued low temperature and the absence now of the right iliac tenderness and his fairly good mental condition did not confirm the first suspicions, and that idea was abandoned; but the presence of the fearful and persistent pain at the base of the brain, increasing deafness, retention of urine, some vertigo, and the peculiarly rigid condition of the muscles, all pointed to a serious lesion, and a definite diagnosis was made of a tumor at the base of the brain.

In this flexed condition, sitting up in bed, his arms encircling his knees and his head resting on his arms, he remained for thirty-one hours, taking a fair amount of nourishment, and growing more and more irritable and difficult to manage, until the morning of the 9th, when he suddenly stretched out on the bed, breathed with difficulty, and before the nurse could reach him he was dead.

An autopsy was obtained and performed in the presence of Drs. Beverley Robinson and Ecroyd. On dividing the scalp and calvarium, blood flowed very freely, which might be accounted for by the prolonged flexed condition of the body. Dividing the cerebellum at the base, there was found a cavity large enough to hold a billiard ball containing a quantity of greenish, horribly offensive pus, which was also scattered over the adjoining surface, probably occurring at the time of rupture, causing the sudden death.

It was evident that the process of suppuration must have been of long duration and of spontaneous origin, as the other organs were healthy. Special effort was made to find ulcerative patches along the intestine without any result.

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Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

EIGHTH ANNUAL MEETING, AT WASHINGTON, D. C., MAY 30, 31 AND JUNE 1, 1893.

FIRST DAY. — MORNING SESSION.

PRESIDENT'S ADDRESS.

PRESIDENT LOOMIS, in his opening address, said in part: We have just celebrated, as nations count, our fourth birthday, yet the word American stands before the world for all that is most advanced in science. As we enter upon the new century year, it should be with the full appreciation that the theory and practice of medicine have given place to the science and art of medicine. The nature of this change cannot be more tersely or aptly described than in the words of Ruskin, "the work of science is to substitute facts for appearances and demonstrations for impressions," which plainly means that all our errors in science are subjective. The day of speculative medicine has passed; henceforth we must know, not suppose; and whatever is offered in public must have the stamp *scio*. The tripod support of science is *observation*, *theory*, *demonstration*. The first gathers facts, the second considers their relations, and the third tests all. Scientific scepticism is perhaps the most striking characteristic of medical investigation to-day — a scepticism which doubts, not for the sake of doubting, but which demands proofs and counter-proofs; which scans facts, not men, and learns to recognize truth from whatever source it may come. As a legitimate result of this spirit, there has been developed what is without question the greatest advance in methods ever made in medical science. When the medical history of the last half of the nineteenth century shall be written it will be largely that of the laboratory. Among the names which the twentieth century must honor none will stand higher than those who having devoted themselves to establishing objective facts of medicine were not beguiled by their work to elevate the experimental above the practical. Let us, also, who are brought into such intimate relations with [illegible] wise and self-controlled. The experimental alone can never accomplish the great work that is ever before the physician. It assays, indeed, the solution of ultimate problems, and seeks to grasp the primal forces of disease; but it must perforce grapple with each one singly, never with all those infinite combinations which make up the sum of what we call disease. We can never safely ignore the rich store of clinical facts gathered by so many master minds, or let them be withdrawn within the recesses of the laboratory. Although from the laboratory we hope to receive the solution of many problems which have long baffled us, it must be remembered that the special field of medical investigation is, and ever will be, disease in its activities — all its forces can be studied and understood only at the bedside of the patient.

Dr. Loomis, in closing, spoke of the death of two of the members during the past year — Dr. William Geddings and Dr. George Ross. Both these men did all that man can do. They did their part in life with faithful zeal until their powers gave way; and with the wisdom which never dwells in sordid minds they did not leave their mental wealth for legacies, but day by day transferred it to men with fresher strength, and gave over, not gave up, their work, content in the knowledge that it was not to cease, but grow larger year by year; and when, at last, their summons came, the best of all they had, the essence of the man, his quality, they left with us. Both were in the prime of their years, yet their fifty-five and forty-seven years are added to those marks of death from which the years are slowly crystallizing out the deepest spirit of our work. At present the world calmly reads those lines of silent figures, and carelessly says, "Yes, doctors are the shortest lived of all the professions," and thinks no more of what that means. Perhaps the world will never stop to think; but in that day when all our books are closed and other books are opened, who looks along the line until he finds "Physician," will look in vain for the small fraction of life's span, but may read instead, "he saved others, himself he did not try to save."

ON THE COURSE AND TREATMENT OF CERTAIN URÆMIC SYMPTOMS.

BY DR. BEVERLEY ROBINSON, OF NEW YORK.

Renal insufficiency, *versus* uræmic symptoms. Adopt the former name to cover a definite series of symptoms. Cases reported which serve as a text to explain views upheld. Cases of inflammation in the respiratory tract, due to functional inactivity of the kidneys. Symptoms similar to those in the cases reported sometimes connected with organic renal changes. Treatment in the evident gouty cases with renal disease. Occasional inefficacy of the nitrites. So-called increased arterial tension merely the consequence of atheromatous thickening of vessels. Whenever renal function is insufficient, watch carefully the use of digitalis. Pernicious effects of even small doses of opium in chronic renal disease. Changes in the urine in interstitial nephritis. The hypodermic use of morphine in chronic Bright's disease; to be used with great care when the heart is weak primarily; not to be used even with weak heart when the pupils are contracted; in doubtful [illegible] convulsive seizures of acute uræmia morphine frequently produces remarkable curative effects; in some instances, after the use of morphine, there are profound coma and contracted pupils, showing perhaps evil effects of morphine. Reflections as to the rôle of the kidney as an elective filter — the different poisons retained in, or eliminated from, the economy; various morbid effects produced by their retention. Primary source of uræmic symptoms not to be found either in the kidneys or heart, but often in the digestive tract. Intestinal antisepsis. Value of oxygen by inhalation.

Dr. James Tyson, of Philadelphia, supported the views of Dr. Robinson as to the effect of opium upon chronic kidney disease, and its tendency, in his experience, to invite coma and convulsions. He had seen two drachms of paregoric cause an old man to pass into coma from which he never recovered. Doubtless many cases of uræmic convulsions in puerperal eclampsia are successfully treated by hypodermic injections of morphia. It is in cases of chronic interstitial nephritis that morphine is dangerous. Cases of puerperal nephritis are cases of parenchymatous inflammation of the kidney and morphine is borne better in cases of parenchymatous inflammation than in cases of interstitial inflammation.

Dr. W. W. Johnston, of Washington, thought that the class of cases described by Dr. Robinson were very common, and more so than formerly. He had read a paper on this subject about eighteen months ago, in which were presented cases almost exactly analogous. His conclusions as to the nature of these cases were very much like those of Dr. Robinson, except that he gave greater prominence to the intestinal condition as the primary cause of the diseased state. There is but little doubt that the primary source of these disturbances is situated in the digestive tract, and it is the accumulation in the blood of the morbid products of digestion that starts the train of phenomena. In many of these cases the explosions are due to the inability of the kidney to excrete these excessive altered albuminoid products. Another cause may explain some of the acute attacks, namely, that they are the result of acute absorption of toxic matters from the intestinal fermentation. Some cases are too sudden in their onset to be due to renal inadequacy.

Dr. I. E. Atkinson, of Baltimore, spoke of the use of opium in uræmic conditions. There is no therapeutic fact, he thought, more capable of demonstration, than the extreme value of opium or the hypodermic use of morphia in the treatment of dangerous uræmic symptoms, especially in the sudden and acute œdema of the lungs that come on in the course of contracted kidney. When called to an early attack of œdema of the lungs in the course of contracted kidney, he felt that in five or ten minutes after administering morphine hypodermically, he would see that cyanosis disappear, the breathing become more quiet, and in the course of half an hour or so, the patient restored to his usual condition. It is a little strange that where one can relieve very promptly by the use of morphine a condition of extreme distress and danger, that the same therapeutic measure should be so dangerous in conditions of mild renal insufficiency; that morphia should be a dangerous remedy when the degree of toxæmia is mild, and a remedy of great value when the degree is extreme. Testimony shows that dangerous symptoms do sometimes succeed the administration [illegible] be found in the fact that the symptoms are increasing at the time of the administration of the morphine, and would continue to increase no matter what was administered. The severe symptoms, in other words, follow the administration of the opiate but are not in consequence of it.

DR. ALFRED L. LOOMIS, of New York, said that when he brought the hypodermic use of morphia for the control of acute uræmia before the profession he had stated very positively that it was for acute uræmia and not for chronic, and for those cases of acute uræmia where there was no knowledge of any previous renal disease (such cases as are seen in acute parenchymatous nephritis, in the various infections, and which occur in connection with exposure to wet and cold). Those that came on during child-birth were particularly the cases which he had brought before the profession as being relieved or controlled by the plan of treatment. Afterwards he had found that morphia was being used in cases of chronic uræmia, which was an entirely different condition. If it is used indiscriminately in chronic uræmia, a great deal of harm may be done. Only in those cases of chronic uræmia where you have a large and dilated heart and where œdema of the lungs occurs, partially on account of the uræmia and partially on account of the condition of the heart, should opium be used; and in these cases opium is a power because it controls the heart.

DR. BEVERLEY ROBINSON, of New York, said that he was strongly convinced that the junior members of the profession had used opium in the treatment of uræmia so inconsiderately and so unwisely that in a great many instances much harm had been done. We know very little about the direct influence of structural changes in producing marked uræmia; and as Sir Andrew Clarke has pointed out, we must look, after all, in our interpretation of the disease, to the functional derangement rather than to the pathological changes.

(*To be continued.*)

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Recent Literature.

A Medical Hand-book for the Use of Practitioners and Students. By R. S. AITCHISON, M.B., C.M., F.R.C.P.E. London: Charles Griffin & Co. Philadelphia: J. B. Lippincott Co. 1893.

This is a small hand-book of somewhat over three hundred pages, suitable to carry in the pocket, containing the pathology, diagnosis and treatment of all diseases, besides much other useful information. It might be useful to a physician to carry in his buggy to refresh his memory, or to the student to help cram for an examination. It contains, perhaps, as much as could be expected of a book which condenses to such an extent.

The Year-Book of Treatment. Philadelphia: Lea Brothers & Co. 1893.

This small volume gives a critical review, for practitioners, of the current literature of treatment in all departments of medicine and surgery. Many of the brief abstracts are valuable and suggestive, although being written by different men they vary widely in their value. A good deal of what is contained in such a book is of little importance, as it necessarily includes much that is evanescent in character.

THE BOSTON

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BACTERIAL POISONS.

No subject at the present day can be more interesting, and yet but little is known respecting bacterial poisons. The work of Gamaleia,[1] despite its literary merit and the great array of facts, is a little disappointing, and one really wonders on reading this book that so much could be written, and so little information given.

The first experiments of Seybert, Gaspard Stich, Magendie, Dupuis and others established the symptoms and lesions of experimental septicæmia. Panum showed that it is produced by a chemical poison: Bergmann and Schmiedeberg determine this poison to be an alkaloid sepsine. This result marks a first stage in the investigation. Down to about 1870 Panum's views were almost universally prevalent. Bergmann's sulphate of sepsine, obtained in crystalline form from putrid infusions, was believed to be the veritable putrid poison that causes septicæmia, and the action of microbes was ignored. Sepsine was thought to be a ferment, acting in infinitesimal quantity.

It was, however, soon found to be impossible to ascribe all the forms and symptoms of septic poisoning to sepsine alone, and that the poisons produced by putrefaction were many and various, according to certain conditions; and there was for many years a contest between the chemical and the vitalist doctrines, ending in the victory of the latter. Liebig's hypothesis that the soluble ferments are albuminoid matters in process of decomposition, was overthrown by Pasteur, who demonstrated that fermentation and decomposition do not exist apart from the life of organized ferments. Moreover, the contagionists were soon able to prove the fallacy of the chemical doctrine by showing that certain microbes separated from their morbid products were able to produce determinate diseases. At the same time was established the fundamental notion, proclaimed by Cohn, of the specificity of bacteria and bacteriology took its place among the sciences. The vitalist doctrine was not, however, in absolute contradiction to the chemical; and Panum has the merit of having understood the possibility of reconciling the two theories. He affirmed, that "it is incontestible that the putrid poison is chemical, but that it might be produced by a microbe, even a determined microbe. In diseases, both the pathogenic microbe and the production of the poison by the microbe, may play their respective parts." These words, uttered in the infancy of bacteriology, have been shown to contain a profound truth.

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[1] Bacterial Poisons, Detroit, 1893. (American Edition, translated by E. P. Hurd, M.D.)

The discovery of ptomaines by Selmi, Brieger, Gautier and others marks the next stage in progress. These discoveries date from about 1870. The list of cadaveric alkaloids naturally resulting from putrefaction of albuminoids was soon quite large; and the query was soon raised whether it might not be dangerous to eat flesh, or even fish, and other animal products, for fear of ptomaïne poisoning. At least, invalids with weak digestive functions were warned of the danger. Later on, a careful criticism of the work of Gautier, Nencki, Brieger and others justified looking with suspicion on their different methods of extraction of ptomaïnes. There is even warrant for believing, as Gamaleia shows, that these methods were likely to create artificial products which did not pre-exist in the albuminoids analyzed.

A part of the work of these experimenters will still stand; but the spontaneous formation of ptomaïnes is not so constant a phenomenon as was taught, and the microbial poisons are not ptomaïnes. As for the typhotoxine of Brieger, Bassi has shown that it does not pre-exist in the cultures of the typhoid bacillus; and Salkowski has never been able to find the pepto-toxine of Brieger in the products of gastric digestion; in fact, Bouveret and Devic have proved this supposed ptomaine to be "an artificial product which is formed at the expense of albuminoid matters by the combined action of HCl and alcohol."

Roux and Yersin, as a result of their experiments on the poison of diphtheria, conclude that by all its reactions the diphtheritic poison resembles diastases, and none the less by its intense activity in infinitesimal doses.

Gamaleia, after a somewhat exhaustive examination of the whole subject, and with the help of researches of his own, concludes, "that the toxic action of the bacteria is not linked to their fermentative action; it does not coincide with any known diastasic action." The microbial poisons have been supposed to be "secretions"; nevertheless, this comparison with secretions accounts but superficially for the facts. "First, there are certain pathogenic bacteria which produce such diseases as tuberculosis, cholera and charbon, where we do not find any toxic secretions. Then, again, even the production of poisons in diphtheria and tetanus has a very superficial correspondence to a secretion. In fact, the quantity of these poisons in the culture liquids does not grow proportionately to the development of the bacteria themselves. On the contrary, an attentive observation reveals the following facts: At the very first, and at the most active moment of the life of the microbes, the liquid of culture is acid, and devoid of all toxic power. Later, when the bacteria have ceased to multiply and are deposited at the bottom of the culture flask, the liquid becomes alkaline and very highly toxic. Its toxicity augments progressively with the duration of the sojourn of the bacteria in their alkaline liquid of culture."

The explanation of this fact he finds very simple: "The poison is contained inside the bodies of the bacteria, and is extracted slowly by the alkaline liquid in which they are macerated."

We have not time to pursue the subject further, and must refer those interested in the subject to the treatise itself. In short, Gamaleia believes that the microbian poisons "are the results of the creative syntheses of the bacteria, and come from their bodies.

"Thus is again confirmed our hypotheses respecting their chemical nature, which identifies them with the constituent parts of the nuclei of cells — the vitellines and nucleines.

"The toxicity of the microbian bodies may have also a teleological signification explicable from the point of view of the struggle for existence and of natural selection: for the toxicity of the bodies of bacteria may be useful to them as a means of preserving them against aggressors which would devour them."

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THE ONLY ORIGINAL JACOBS.

An enterprising firm issues a combination circular containing the following useful information for the medical profession: "Board and Rooms at the Columbian Exposition; Vaccine Virus; and Lithograph or Chromo for Embellishing a Physician's Office or Drug-store."

A remarkable statement in this circular is the following: "The source of the vaccine is '*America's only authenticated case of spontaneous cow-pox.*'"

There was a period, beginning about 1870, when the word "Beaugency" was employed very largely in the United States as a synonym of purity and unusual value in connection with the production and sale of vaccine lymph. The commercial value of this term to the vaccine purveyor, was undoubtedly considerable. If, however, the researches and the rapid progress of the past few years in the study of the natural history of infectious diseases have proven anything, they have shown quite conclusively that the *spontaneous* or *de novo* theory of the origin of infectious diseases is a shadowy myth, and that such diseases have their origin in previous cases, with as much certainty as the fact that the oak tree always springs from an acorn, or the field of grain from a previous sowing of the same kind of grain. If we cannot discover the source of an infectious disease, or trace its origin, we have no right, therefore, to assert that such source or origin does not exist.

Infectious diseases are the common property of man and the lower animals; and in asserting to himself a sort of proprietary right in any particular case of infectious disease, man is transgressing the pale of nature's laws, since such infections are a common property and a common liability of all.

Moreover, cow-pox is not so rare an occurrence in the United States as the circular in question would lead us to infer. In Wood's "Reference Hand-book" (article *Vaccination*), at least twenty well-authenticated cases of cow-pox in the cow are mentioned as having been examined and reported by several different observers in the United States, mostly between 1870 and 1880. These cases occurred mainly in years and in districts when and where small-pox was prevailing, and only corroborate the evidence accumulated in earlier times by Ceely of England, and recently by Haccius and Eternod of Geneva, Dr. Simpson of Calcutta, and Dr. King of Madras, that cow-pox is simply a modified small-pox.

There has always been an attempt on the part of the commercial vaccine purveyor to show that cow-pox is an extremely rare disease, and that Messrs. So-and-So are the only possessors of and dealers in the original and genuine authenticated spontaneous article. It is not creditable to a great and liberal profession to lend its aid to so-called theories of the source of infectious disease which have their origin in commercial methods and not in the careful investigations of science.

In those countries where the general government furnishes the supply of vaccine lymph, as in Germany, Belgium and Italy, the term *spontaneous cow-pox* is rarely used. Cases of cow-pox occasionally occur; and when they are observed, they are not unfrequently resorted to for the purpose of renewing the stock of lymph, as in the recent cases in Wiltshire, England, and Eysines and Cérons in France.

In Germany there are at present twenty-five cities, in each of which is a well-equipped vaccine station for the purpose of supplying vaccine lymph from the heifer. The demand for lymph is not, as in America, largely due to the spasmodic efforts of local boards of health exerted in time of small-pox epidemics, but is the result of the continuous and uniform execution of the law of the country, requiring the vaccination of all infants and the re-vaccination of all who have arrived at the age of twelve years. As a result of the enforcement of this law, Germany is to-day, and has been for the past fifteen years, more free from small-pox than any other country in the world.

Thus far in the United States, only one or two States have made provision for the furnishing of vaccine lymph by the government. In Minnesota the State Board of Health conducts such an establishment, and furnishes lymph to physicians throughout the State.

POSTPONEMENT OF THE INTERNATIONAL MEDICAL CONGRESS.

WE have just received the following letter:

NEW YORK, August 6, 1893.

MR. EDITOR: The undersigned, chairman of the American National Committee of the Eleventh International Congress, has received the following cablegram:

GENOA, August 4, 1893.

DR. JACOBI, 110 W. 34th St., New York. Congress postponed to April, 1894. Letter follows. MARAGLIANO.

This official information, communicated by the secretary-general of the Congress, interrupts the preparations made for it. As many of our medical fellow-countrymen have been preparing to visit the Congress, which was to be held on September 24th, I trust you will give the news herein transmitted the greatest possible publicity.

Very respectfully, A. JACOBI.

It will be remembered that there was a rumor during the spring that the International Congress would be postponed on account of the question of sanitary safety, which, of course, meant the danger of cholera. Cholera has existed in Naples during the past month, and has this week been reported by cable to have appeared in Rome.

The Congress was to have met on the 24th of September, and it is probable that this postponement is due to the possibility of a serious outbreak. It will be a disappointment to those who have already made preparations for attending the meeting this autumn; but, on the other hand, the month of April in Rome is delightful, and it is possible that as many may be tempted to go at that time. The change in time will also, perhaps, increase the attendance at the Pan-American Congress in Washington, and also the number of physicians, both American and foreign, who will visit the World's Fair in Chicago.

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MEDICAL NOTES.

THE CHOLERA. — The cholera in the East has on the whole decreased during the last week. In Turkey and Russia there have been cases reported from several new districts, showing a moderate general spread of the disease. In France, and especially in Marseilles, the death-rate has increased; there being now a daily mortality in Marseilles of nearly twenty-five. During the last four weeks there have been 826 deaths from cholera throughout France. In Italy the government has still remained careless to the increasing number of cases, and the official reports from Naples are much understated. There are at present about fifty new cases and thirty deaths daily. There has been a veritable panic among the residents of the city, and many thousands have fled. Several sporadic cases have occurred in Rome. In the interior districts of the Mediterranean shore there has been no marked increase.

THE CHAMBERS STREET HOSPITAL, NEW YORK. — A correspondent of the *Medical Record* writes concerning the erection of the new building for the Chambers Street Hospital, that, spacious and modern as the new rooms may be, the older ex-house-officers will remember with pleasure the small, inadequate buildings in which the great work of the institution was carried on. A cause for especial pride is the record of work between the years 1876 and 1888, when the hospital staff, under the lead of Dr. William T. Bull, so carefully studied and thoroughly carried out the details of antisepsis in its early days, that the hospital may claim to have contributed not a little to modern surgery.

The Diphtheria Outbreak in New Jersey. — Dr. Hunt, medical inspector of the New Jersey State Board of Health, has reported upon the outbreak of diphtheria occurring at Hightstown in that State. He found that eighteen of the twenty cases investigated were in families supplied by the same milk-man, in whose employ was a lad suffering from diphtheria, but at work in the dairy. The general sanitary condition of the town was good, and had no part in the epidemic.

Admiral Tryon's Illness. — So much has been said about the illness from which Admiral Tryon was recovering at the time of the loss of the *Victoria*, and its effect upon his nautical judgment, that it is interesting to read the testimony of the fleet-surgeon before the court-martial. The admiral had an ulcer upon one leg which was exceedingly slow in its healing, necessitating over a month's absence from duty. There was no fever or general disturbance beyond the local trouble.

Ante-mortem Burial.—Seymour, the mind-reader, who a short time ago announced his intention of being buried alive to test his power of suspending animation is having great difficulty in carrying out his plan. He intended to be buried in an especially constructed casket which communicated by an electric wire with the surface. Over the grave some corn was to be planted and when this had grown and ripened Seymour was to be dug up. His difficulty has been to find a grave. No cemetery company will allow his interment in its grounds, and Seymour has so far found no one who will take the responsibility of burying him anywhere. It looks as if this fool-hardy experiment would be made impossible, as it is to be hoped it will.

Fifteen Pairs of Twins. — A correspondent of the *Lancet* reports a bit of domestic history which is wonderful, if true. A woman in making a contract statement for life insurance solemnly asserted that her father died at the age of eighty; that her mother was alive at the age of seventy-nine; that she had four brothers and four sisters alive and in good health; that her mother had "had thirty-three children, fifteen times twins," and that "twenty-four died under six months old." The writer while he would not vouch for these facts saw no reason to discredit the woman's word or honesty.

Cure of a Case of Movable Liver. — Richelot reports to the Académie de Médicine the successful cure of a case of movable liver. The patient was a woman, twenty-eight years old, who had suffered for some time with abdominal pain. The right iliac fossa contained a large, firm mass, which at operation proved to be the liver, which had fallen downward into a vertical position and had become adherent in places to the cæcum. The bands were broken up, and the liver replaced and fixed by three sutures passing through the thickness of the abdominal parietes and Glisson's capsule. The recovery was uninterrupted, and the displacement had not returned.

A Reception in honor of Prof. Adam Politzer, of Vienna, was given at the University Club in Boston last Tuesday evening by Drs. C. J. Blake, J. O. Greene and H. L. Morse.

NEW YORK.

Contaminated Wells in Central Park. — Dr. T. F. Janeway having reported that he had attended three patients suffering from intestinal trouble which was produced by drinking the water of a well situated near the tennis courts in Central Park, the Board of Health requested its chemist, Dr. Martin, to make an analysis of the water, and the result showed that it was contaminated with sewage. In consequence, the well was condemned, and ordered to be closed, and Dr. Roberts, Sanitary Superintendent, has requested the Park Commissioners to furnish him with a list of all the wells and springs in the Parks in order that their waters may be submitted to analysis.

A Dinner to Dr. Politzer. — Dr. Adam Politzer, the celebrated otologist, who is an official delegate to the Columbian Exhibition at Chicago from the University of Vienna, arrived August 3d on the *Aller*, and on the evening of the following day he was given a dinner at the Union League Club by Dr. Gorham Bacon, which was attended by a considerable number of well-known New York physicians.

High Mortality. — The climax of the summer's mortality was probably reached during the week ending July 22d, when the number of deaths reported was 1,257. In the following week the number was reduced to 1,084; representing an annual death-rate of 29.83 per thousand of the estimated population, which is about the same as that of the average of the corresponding week for the past five years. During the corresponding week last year, when the weather was intensely hot, the number of deaths reached 1,434; representing an annual death-rate of 40.83, which is about the highest in the history of the Health Department.

Miscellany.

MR. HART'S IMPRESSIONS OF THE MEDICAL PROFESSION OF AMERICA.

Mr. Ernest Hart, on his return voyage, wrote for the *British Medical Journal* a preliminary report of his visit to this country. His visit was a most pleasant one in every way; and the cordial greetings he received from the various professional bodies left upon his mind, he says, a succession of vivid pictures of the self-respecting originality, the marked regional individuality, the friendly but distinctive competition for progress and leadership of North, South, East and West.

Two of the pictures are of especial interest: "New York, with its wealth of clinical material, its largely developed hospitals and schools, and its prosperous practitioners and consultants, has a certain leadership which some think too self-confident, with its roots not yet deeply set. Boston cultivates with proud reserve and academic polish traditional thoroughness and a high university culture."

He criticises in a friendly spirit the causes of the imperfect professional union of different sections of the country, as being of importance not only to this country but to the medical profession at large. He looks upon the present time as a critical period in the development of professional life in America, owing to a tendency to sectional caucussing and special "congresses," which is threatening to limit the usefulness of much scientific activity. It deprives the "physicians," the "surgeons," the "laryngologists," and so forth, of the power for good which comes from mutual and common intercourse, and the cultivation of a sense of unity and affection, amiable criticism and common effort. "So much sectional difference has been aroused," he says, "and the organization of the annual sectional congresses all over the States has been so assiduously developed, that some difficulty may be found in restoring unity of sentiment and action. Nowhere, however, could the results be more valuable than in America of a common understanding on the relations if the profession to the public, and of their duties to each other. Nowhere does there exist a stronger need or a more useful sphere for medical thought and knowledge in guiding municipalities and executive officers in questions of public health and the government of public institutions, the endowment of science and the maintenance of adequate standards of education and examination. The future of the higher life in America and the development of culture and mental progress, the struggle against commercialism, and the blinding and corrupting worship of the dollar, lies largely with the professional classes. The medical tradition is essentially a protest and an antidote against this curse of new communities. The most superficial observer from without must see that this great attribute of medicine and this high duty and privilege are recognized and brought into play in very different degrees in the various centres of the United States. The newest settlements and States are far from being the least developed in this respect."

It was not only medical life which interested him and the great question of municipal sanitation which he so understandingly discussed in his addresses on the water-supply of Chicago; but the energies, capabilities and resources of our country were a source of great and deepening wonder, as he saw on all sides that which must make all Englishmen proud and happy — "unexampled vigor, unlimited resource, matchless natural marvels, a race of lovely girls, rapidly developing scientific institutions, and a growing passion for research, a continent in which lies the future of the world peopled by an Anglo-Saxon race."

It is his hope on his visit next fall to find a way of being useful in the direction of helping to a federation of the great medical forces of different sections of our country from the union of which in "a mutual and generous intercommunication, may be expected a hitherto unexampled development of professional usefulness and vigor in inspiring social action, in modifying further administration of health matters, in raising and purifying the standards of life, as well as in the advance of the art of healing."

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ÆTIOLOGY OF PLEURITIS.

Jakowski,[1] after bacteriological study of fifty-two cases of pleuritis, concludes that every pleuritis is of bacteriological origin, although the bacteria may not be found in the exudation. When repeated examination of a serous or purulent exudation shows no bacteria, the case may be considered as tubercular.

The majority of primary, non-tubercular pleurisies are due to the diplococcus of Fränkel. The next most frequent cause is the streptococcus pyogenes. Serous effusions containing these latter are much more likely to become purulent than those which contain only the diplococcus. The most favorable prognosis is to be given in cases which contain only the Fränkel diplococcus.

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GASTRO-INTESTINAL EXHAUSTION.

Among the many cases of gastro-intestinal disturbances which occur in warm weather, a certain number may be fairly considered as a class by themselves, due not to poisoning or errors in diet, but best described as cases of gastro-intestinal prostration. The clinical picture is fairly definite. The onset is slow, as a rule; indeed the patient is often unable to give a more accurate date of the beginning of his trouble than "the first of warm weather." There is no history of errors in diet or exposure to cold — as there is no sudden onset of acute symptoms. A general mild anorexia for a day or two, slight irregularity in the action of the bowels and a little distress after taking of food, have hardly attracted any attention; but the continuance and gradual increase of a mild diarrhœal tendency are the first symptoms heeded. The diarrhœa is unaccompanied by pain, though often attended with flatus. Diet when at all rational has but slight connection with the diarrhœa.

The whole picture of the case when carefully noted is quite distinct from that of acute or subacute gastritis due to irritant ingesta. There is no fever or vomiting, though there may be slight nausea. The chief complaints of the patient are of the annoyance of the diarrhœa and of a sense of weakness. The ordinary treatment of a gastro-intestinal catarrh is usually given with a gradual improvement of the patient towards fall.

The noticeably good effect of a few cool days on the patient points to the rational explanation of the condition, the greater or less exhaustion of the nervous centres controlling the alimentary tract. The effect of heat upon the human system varies so much in different persons that it is not easy to trace the exact course of its workings. Some people are always "better" in summer, they like hot days, and with such people cases of gastro-intestinal exhaustion are not found.

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[1] Zeitschr. f. Klin. Med., xxii, i, 2.

It is the person whose nervous system is below par, or easily exhausted by heat, who is troubled by this atony of all alimentary processes. Indeed, the digestion suffers only as a result of marked nervous exhaustion affecting chiefly the great ganglionic centres of the sympathetic system. With this theory of the cause of the patient's trouble the indications for treatment are seen to be quite different from those of an enteritis. The diet should, of course, be light and simple, but it should be abundant. The patient should be kept quiet, fed often and regularly, with varied but easily digested foods. Removal from a heated noisy city to cool localities is of the greatest importance, and care should be taken to avoid overheating or exposure to the sun. The nervous system should be given all the rest possible, as in cases of general nervous exhaustion.

Medicinal treatment should be not by cathartics and antiseptics for supposed ptomaines, but by thorough administration of nervous tonics and stimulants.

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THERAPEUTIC NOTE.

Quinine in Chorea. — Dorland and Potts[1] report seventeen cases of chorea successfully treated with quinine. Hitherto the treatment of chorea has been by drugs which control the action of the motor nerves, or act as strong spinal depressants — in other words, blocking the manifestation of the disease rather than removing its cause. If chorea is due, as seems probable, to a greater or less diminution of the inhibitory power of a higher nervous centre, then the rational treatment is by drugs which stimulate and restore the function of that centre. Quinine appears to have this power to a marked degree and the results of seventeen cases treated with large doses are very promising. The children were from seven to fourteen years of age and were given four grains of quinine, four, five or six times a day until cinchonism occurred. The dose was then somewhat lessened and continued t. i. d. In most of the cases an immediate improvement took place and continued for some time. If the drug was used alone a relapse usually followed, but when combined with active treatment toward building up the general health gave permanent results. The large doses which most of the children took without cinchonism were remarkable.

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Correspondence.

A POSSIBLE CAUSE FOR THE PRESENT PREVALENCE OF APPENDICITIS.

Newton Lower Falls, August 1, 1893.

Mr. Editor: — "The smallest worm will turn if trod upon", and the frequency with which cases of appendicitis are reported leads one to ask [illegible] panion as would a stick of dynamite in their pockets. They regard appendicitis with [illegible] they have for cholera, and wish to be told how to avoid it.

Is the disease more prevalent than hitherto? Admitting that improved diagnosis and, not infrequently, actual inspection demonstrate to-day its existence in cases that a few years ago might have recovered or been [illegible] under some other designation, it still seems that its apparently more frequent occurrence of late cannot be entirely accounted for upon that supposition. It [illegible] time to ask in what manner the general condition of the community is changed — what especial causes are now operating to render persons liable to this disease, that were not in operation a few years since.

Food which we were formerly taught to regard as the usual cause of appendicitis, has not materially changed in its general character from what it was thirty years ago, and may be excluded. Not only are there no more berries eaten now than then, but a large number of the cases reported of late specify that no foreign body existed in the appendix. Clothing — while in its various fashions it may not only compress the abdominal regions, but may fail to properly protect them against harmful changes of temperature — is certainly at the present time no worse in these particulars than at any previous time during the past twenty years.

Looking beyond these two for a possible causal condition, however, we find in one particular a condition of recent origin which may possibly explain in some degree the frequency of the disease. I refer to the comparatively recent and very general introduction of methods of physical culture and the resultant growth of athletic sports. Calisthenics, as generally taught, appear harmless enough; but many of the postures involved cause a good deal of abdominal pressure. It goes without saying that where an overloaded ascending colon is subjected to such pressure, a portion of the fluid matter entering from the ileum might be forced downward into the appendix and be the cause of serious disturbance.

The danger from such a contingency would naturally be increased in the more violent gymnastics and the rougher athletic games — as base-ball or foot-ball, rowing, polo and the like. The position of the modern bicyclist when riding, seems very favorable to an injury of that description.

In short, any and all of these exercises are attended with a certain risk if taken when the intestines are overfull; and I am not aware that this fact has been given much prominence in published instructions and rules upon the subject. It therefore seems proper to call attention, both professional and lay, to the matter.

C. F. Crehore, M.D.

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A POSSIBLE OPPORTUNITY FOR WALTHAM WOMEN TEMPORARILY OUT OF WORK.

Waltham, Mass., August 1, 1893.

Mr. Editor: — Among the hundreds recently thrown out of employment by the partial shut-down of the American Waltham Watch Company, are many young women of refined character, who would now be thankful for situations in families such as usually can be filled only at high wages or by those whose early advantages have been far less.

These young women are not experienced housekeepers, nurses or seamstresses; but they are ready to do their best in any such work and for moderate wages.

It occurs to me that in the practice of many of your readers there are probably families where the extra help thus available, would be welcome. And with the purpose of helping my townswomen in their present stress to such opportunities of earning their living, I offer my services as their agent. If parties desiring extra service will correspond with me by mail or wire, I will do my best to supply them. But, to prevent my falling into a permanent intelligence-office business, I beg to stipulate that my offer holds good only for this month of August.

Yours respectfully,

A. Worcester, M.D.

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[1] University Medical Magazine, August, 1893.

METEOROLOGICAL RECORD,

For the week ending July 29, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S...23	29.71	66	74	58	71	69	70	N.W.	W.	11	12	C.	C.	0.69
M...24	30.01	63	72	54	73	59	66	N.W.	W.	19	9	C.	C.	
T..25	30.05	66	76	56	67	85	75	W.	S.E.	8	12	C.	O.	0.09
W..26	[illegible]	77	91	63	76	71	74	S.W.	S.W.	10	14	F.	O.	0.08
T..27	29.88	71	74	68	58	51	55	N.W.	N.W.	20	5	F.	C.	0.03
F...28	30.10	[illegible]	[illegible]	58	54	48	51	W.	W.	14	4	F.	O.	
S..29	29.96	69	72	66	78	88	83	S.W.	S.W.	13	10	O	C.	0.02
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 29, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	1084	619	36.72	8.91	28.17	.63	3.00
Chicago	1,438,000	769	495	66.56	4.94	60.67	2.47	2.99
Philadelphia	1,115,562	589	514	35.02	9.86	29.24	1.36	1.53
Brooklyn	978,394	611	384	39.36	6.40	36.04	.80	2.72
St. Louis	500,000			—	—	—		—
Boston	487,397	283	157	34.30	7.00	29.05	1.05	2.15
Baltimore	500,000	—	—	—	—	—	—	
Washington	308,431	138	64	30.66	8.03	22.63	5.11	.73
Cincinnati	305,000	113	63	19.58	17.80	19.58		—
Cleveland	290,000	174	128	49.40	6.38	42.34	.58	1.74
Pittsburg	263,709	132	72	49.40	8.36	38.00	3.80	.76
Milwaukee	250,000	100	65	34.00	3.00	31.00	—	2.00
Nashville	87,754	34	10	20.58	23.52	8.82	8.82	
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	8	2	25.00	—	25.00	—	—
Worcester	96,217		—		—		-	—
Fall River	87,411	70	52	58.22	5.68	56.80	-	—
Lowell	87,191	78	54	47.36	3.84	17.36	—	—
Cambridge	77,100	33	21	51.51	12.12	42.42	—	3.03
Lynn	62,656	26	9	30.72	3.84	19.20	7.68	3.84
Springfield	48,684	27	16	51.80	7.40	33.30	—	3.70
Lawrence	48,355	—		—			—	—
New Bedford	45,886	32	23	46.95	6.26	35.82	1.16	3.13
Holyoke	41,278	—		—				—
Salem	32,233	17	7	34.28	5.88	29.40		—
Brockton	32,140	8	3	50.00	12.50	25.00	-	12.50
Haverhill	31,396	14	8			—	—	—
Chelsea	30,264	15	7	26.00	13.33	20.00	—	—
Malden	29,394	3	1	—	33.33	—	—	—
Newton	27,556	—	—	—	—	—	—	—
Fitchburg	27,146	12	10	83.33	16.66	83.33	—	—
Taunton	26,972	6	5	83.33	—	66.66	—	16.66
Gloucester	26,688	5	3	60.00	20.00	—	—	—
Waltham	22,058	8	3	12.50	12.50	—	-	12.50
Quincy	19,642	10	4	—	30.00			—
Pittsfield	18,802	4	2	25.00		—		25.00
Everett	[illegible]	5	3	40.00	—	—		—
Northampton	16,331	4	1	50.00		50.00	—	—
Newburyport	14,073	—	—	—	—	—	—	—
Amesbury	10,920	2	1	—	50.00	—	-	—

Deaths reported 4,457; under five years of age 2,606; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 1,906, consumption 545, acute lung diseases 214, diarrhœal diseases 1,602, diphtheria and croup 114, typhoid fever 50, whooping-cough 38, cerebro-spinal meningitis 34, scarlet fever 24, measles 20, malarial fever 6, erysipelas 5, small-pox 3, typhus fever 1.

From whooping-cough New York 14, Philadelphia 7, Pittsburgh 4, Chicago and Brooklyn 3 each, Cleveland 2, Boston, Washington, Nashville, Cambridge and Brockton 1 each. From cerebro-spinal meningitis New York 14, Chicago 6, Cleveland 4, Gloucester 3, Brooklyn and Marlborough 2 each, Philadelphia, Washington and Everett 1 each. From scarlet fever New York and Boston 4 each, Philadelphia, Brooklyn and Pittsburgh 3 each, Springfield 2, Chicago, Cleveland, Milwaukee, Cambridge and Everett 1 each. From measles New York 9, Philadelphia 4, Springfield 2, Chicago, Washington, Cleveland, Pittsburgh and Salem 1 each. From malarial fever New York and Brooklyn 2 each, Philadelphia and Fall River 1 each. From erysipelas New York and Brooklyn 2 each, Pittsburgh 1. From small-pox New York 2, Philadelphia 1. From typhoid fever New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending July 22d, the death-rate was 25.1. Deaths reported 4,966; acute diseases of the respiratory organs (London) 200, diarrhœa 1,126, measles 129, diphtheria 83, whooping-cough 83, scarlet fever 64, fever 44, small-pox (London 10, West Ham 5, Oldham 3, Bradford 2) 20.

The death-rates ranged from 12 7 in Bristol to 41.6 in Preston; Birmingham 24.6, Bradford 21.4, Croydon 20.6, Leeds 26.2, Leicester 31.3, Liverpool 34.9, London 22.5, Manchester 32.6, Newcastle-on-Tyne 23.0, Nottingham 27.4, Portsmouth 23.4, Sheffield 29.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 29, 1893, TO AUGUST 4, 1893.

Major Alfred A. Woodhull, surgeon, U. S. Army, is granted leave of absence for one month and fifteen days, on account of sickness, to take effect on or about August 15, 1893.

Leave of absence for two months, to take effect about August 10, 1893, is granted **Captain Edward C. Carter**, assistant surgeon, U. S. Army.

Captain Walter D. McCaw, assistant surgeon, is relieved from duty at Camp Pilot Butte, Wyoming, and ordered to the Presidio of San Francisco, California, for duty.

Captain Richard W. Johnson, assistant surgeon, will report on or before August 6, 1893, to the commanding officer Fort McHenry, Md., for temporary duty at that post during the absence of **Captain Charles B. Ewing**, assistant surgeon.

PAN-AMERICAN MEDICAL CONGRESS.

Section on Pathology.

Meeting: Washington, Sept. 5, 6, 7 and 8, A. D. 1893.

One session will be devoted to a formal discussion on the subject of Cancer, to be opened by Dr. Wernicke, of Buenos Ayres, and as co-referee, Prof. Allen J. Smith, of Galveston.

Another session will be devoted to Yellow Fever, the discussion to be opened by Drs. Acosta and Grande, of Havana, Cuba, and as co-referee, Dr. A. J. Amadeo, of Puerto Rico, Honorary President.

One day, two sessions, will be devoted to Practical Demonstrations.

John Guiteras, M.D., Philadelphia, Pa., *Executive Pres.*
David Inglis, M.D., Detroit, Mich., *English-speaking Secy.*
L. F. Criado, Brooklyn, N. Y., *Spanish-speaking Secy.*

SOCIETY NOTICE.

American Dermatological Association. — The seventh annual meeting will be held at the Hotel Pfister, Milwaukee, Wis., September 5, 6 and 7, 1893.

George T. Jackson, M.D., New York, *Secy.* and *Treas.*

RECENT DEATHS.

Richard H. Salter, M.D., M.M.S.S., died at the Massachusetts General Hospital, August 4, 1893, aged eighty-six years. He graduated in 1831 from the medical department of Yale University. He was surgeon of the First Regiment of Massachusetts Volunteers, and did much toward raising and equipping the regiment at the outbreak of the Rebellion.

H. C. Cooper, M.D., died at Woodbridge, N. J., recently, aged sixty-four years. He was a nephew of Peter Cooper, and a graduate of the College of Physicians and Surgeons, N. Y. He served in the Rebellion, and was a prisoner for a time in Libby Prison.

Robert Foster Dill, M.D , Professor of Midwifery in Queen's College, Belfast, died July 20th, aged eighty-one years.

BOOKS AND PAMPHLETS RECEIVED.

The Outlook for Medicine. By Bayard Holmes, B.S., M.D., Chicago.

Tubal and Peritoneal Tuberculosis. By Reuben Peterson, M.D. Reprint. 1893.

Faux Rétrécissements de l'Urèthre. Par le Dr. Reliquet et A. Guépin, Interne des Hôpitaux. Paris: Aux Bureaux du Progrès Médical. 1893.

Lectures.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XIII.

DISLOCATIONS.

You recognize a fracture by crepitus and mobility, and by the fact that it will not stay in place after we have drawn it back into position; and, in gross terms, we recognize a dislocation by the fact that there is no crepitus, that it is stiff rather than movable, and that it does stay in place, if it is replaced into its proper position.

When a bone is thrown out of its position by some external violence, it makes no matter what, sometimes by a direct blow, or by a fall, or by a severe strain of the muscles, there are two obstacles which prevent its reduction. One is the painful and rigid contraction of the muscles, which pull upon the bone in its new position, and prevent it from going back; and the other is the ruptured fibres of the capsule and ligaments around the joint. This last impediment must vary a good deal. For instance, in a strictly encapsulated joint like the shoulder, and extremely movable joint, the bone slips out and goes through a rent in the capsule and rests in some new location. On the other hand, when the head of the thigh-bone happens to be thrown out of the acetabulum, it has two powerful tendons, so to call them, which resist reduction. One is the so-called ileo-femoral ligament, or Y ligament, described by Dr. Bigelow, which gets wound around the bone in various directions; and the other is the tendinous portion of the obturator internus muscles, which is more nearly a tendon than a muscle. These two forces prevent the bone from slipping back into place. Now in old times all these obstacles had to be overcome by direct violence; and hence the use of traction and the pullies. In a moderate case, the patient was held strongly, and the surgeon and assistants having put on what was called a clove-hitch on the arm or leg, pulled and pulled until the muscles were tired out, and the ligaments, which were in the way, were ruptured. The fibrous tissue was ruptured, and the bone finally was got back into its place. The more they pulled the harder the muscles resisted. Agony, of course, was inflicted on the patient. The spasmodic contraction grew harder and harder; and it was sometimes a matter of a half-hour to an hour, and sometimes several hours, before the patient's nervous force was finally exhausted, the muscles worn out and the bone got back into place.

The introduction of anæsthetics, besides producing profound sleep and unconsciousness to pain, is also found to relax the muscles just as they are relaxed in death; hence the giving of ether or chloroform to a patient, after they are profoundly narcotized, obviates entirely the muscular resistance, and that great obstacle is out of the way. There still remain the torn capsule, ligaments, fibrous bands, to strongly resist reduction; and these were, until quite recently, overcome by force; and the patient having been etherized, then traction was used. Sometimes even the pullies were employed with ether to force the fibres apart, and to let the bone spring back into the socket. Latterly, however, it has been found that this resistance also can be overcome without violence, by manipulation, bending, untwisting the opposing fibres, and thereby letting the bone slip back into the socket.

The reduction of dislocations now turns upon two points, — profound anæsthesia, and what is called manipulation, that is, tipping the bone about so that it will glide back into place, and get out of the folds of fibrous tissue which are embracing it. That marks the great distinction between the treatment of dislocation nowadays, and that in former times.

On account of difficulties of diagnosis it not infrequently happens that dislocations are not discovered; and the patient, at first thought to have a blow and sprain, is afterwards found to have a bone out of the socket, weeks or sometimes months, after the injury has been inflicted.

What happens if the bone remains always unreduced? Nature then alters, in the first place, the socket. It is no longer of any use; and it is filled up and changed by the deposits of new plastic material and bone, and becomes smoothed off, in time. Meanwhile the bone rests out of the socket, in some false position, upon another bone, or among the muscles. There nature gradually hollows out a new socket. A rim of bony tissue is built up around the head. A species of false synovial membrane is formed; and what is called a new, or false joint is made, to accommodate the movements of the part. It, of course, is never so good as the original joint; but it is, in many cases, a very fair substitute for it. This is especially true of the shoulder. Now the articulation of the humerus with the scapula can hardly be called a ball-and-socket joint. The head of the humerus plays almost upon a plane surface. There is no socket; and when this bone is thrown out and lodges in a new position under the coracoid, or in the axilla, the head rests in the soft parts, a species of synovial sac is formed, and a very fair subsequent use of the arm is had. On the other hand, when the femur is thrown out, nature forms gradually a new socket and places a bony rim around it, so that with great shortening and great inversion, the patient still has considerable power of moving the limb. Seeing that nature does this, it is a question whether we should attempt the reduction of dislocations after a considerable time has elapsed from the first injury. This question turns upon several points. We know, in the first place, that if we do not touch them, nature will patch up the injury to a certain degree, and that the patient will get a more or less useful limb. The question of attempting to reduce an old dislocation turns then upon two important points. One is whether, if we succeed, we can give a much better limb than nature would make if it were left alone; and the other is, what additional risk we shall put the patient and his limb in, if we attempt a forced reduction after a considerable length of time.

No exact rule, I think, can be laid down for the proper conduct of the surgeon in such cases. It must depend upon the joint; upon the individual patient; upon his age; upon his idiosyncrasies; and, the chief factor of all, upon the length of time that has elapsed since the injury was first received. It is obviously easier to make an attempt to break up adhesions if the humerus is thrown out of the socket, than it is in the case of the thigh; consequently, successful attempts at reduction after old dislocations of the shoulder-joint are much more numerous than after dislocations of the hip. Unless the femur can be put back pretty soon after the injury is received, it becomes almost impossible to do it; and the question arises then, whether the division of the muscles and fascia, or section of the neck of the bone, may not be preferable to attempting reduction of the head of the femur to its natural place, by force.

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[1] These are unwritten lectures printed from the stenographer's reports. Verbal corrections are made in revision, but no radical changes. They were delivered to the third and fourth classes as part of the regular course.

What are the risks that we run in trying to reduce, at a late day after the injury? In old persons, breaking the bone. That is very common. Breaking the humerus, or the neck of the thigh-bone, if we attempt to reduce them. Then we have converted a dislocation into a fracture of the neck; which perhaps would not unite if we tried to make it; which we should better leave, and let it become a new false joint, just as it does in fracture of the neck in very old people, of itself.

More important than this is the injury, especially in the upper extremity, which is liable to be inflicted on the vessels and nerves which are pressing against the head of the bone when thrown out of the socket. Of course, in the normal state the large veins, nerves, artery pass down a little out of the way of the bone; but let that be thrown out, and vessels and nerves are compressed. Neuralgic pain is the consequence, and great swelling of the arm. If the bone remains in this position, nature accommodates herself to it, and the pain gradually goes away and the swelling subsides; but if, in the case of an old dislocation, we etherize the patient, seize the arm, and attempt to get it back into place, it can only be done by first circumducting it in various directions with a good deal of force, and then trying to pry it up into the socket. By so doing we run great risk of injuring the veins and nerves, and producing a neuritis, if nothing more; of not very infrequently rupturing the large axillary vein; and occasionally plugging, if not tearing, the artery. It is quite common, in attempting to reduce an old dislocation of the shoulder, to have the pulse lost at the wrist, and to have great swelling of the part below for some days after the reduction has been successfully accomplished; and if it is not easily and successfully accomplished, and if a long period of circumduction and breaking up has to be gone through before the attempt is desisted from, occasionally the vessels are so far injured that they fail to recover; the limb mortifies; amputation at the shoulder-joint is the only resort to save the patient's life; and the result is much more disastrous than if he were left alone. I do not mean to say that we should not attempt to reduce any old dislocation. We should take these things into careful account; the number of weeks it has been out; the age of the individual; how much nature will accomplish in such a joint if left alone; and the chances of injuring vital parts if reduction is attempted. The humerus has been put into place, many times, after sixty and seventy days; after eighty or ninety days it usually fails; and in old people the attempt has frequently sacrificed the arm. The femur, as a rule, will not stand attempts after so long a period; and unless dislocation of the femur is reduced within the first month or six weeks, I do not think there is very much prospect of getting it back into position. Of course, there are exceptional cases, where you read of brilliant success at an unexpectedly late period; but bear in mind that all these exceptional cases merely illustrate, and prove by their rarity, the more common rule, that the bone cannot be got back easily and safely after a certain length of time.

So to review, very briefly, we have these important points which govern every dislocation: We now can overcome muscular resistance by ether, and overcome ligamentous resistance by manipulation. We may attempt reduction of old dislocations. If we fail, we may still console ourselves with the belief, that a tolerable joint will be got by the efforts of nature, with the bone in its new position.

Dislocation of the Lower Jaw. — The first dislocation we shall speak of is of the lower jaw. Partial dislocation of the lower jaw forward at the eminentia articularis is a very common occurrence, and the bone snaps back itself. This is the case with many young subjects, especially females, where partial dislocation of one side takes place with a creaking noise, during gaping, or opening the mouth wide. The patient rubs the jaw a little, and the bone snaps back into place. Under profound anæsthesia we can, with the thumbs behind the angle of the jaw, partially dislocate the bone forward upon the eminentia articularis, and throw forward with it the glottis, and prevent the swallowing of the tongue.

Complete dislocation of the jaw forward over the eminentia articularis, up into the temporal fossa, puts the mouth into a peculiar and characteristic position — wide open, and the chin thrown out a considerable distance beyond the upper jaw. Dislocation of this kind on one side, of course, makes a peculiar deformity. The common thing is to have both thrown out.

Reduction is easy. The chief thing to guard against is the mutilation of the surgeon's fingers in making the reduction. It can be reduced by putting both thumbs inside of the jaw, pressing the ramus down and back, and it will slip up into place. It is thrown out over the eminentia articularis, and you push it down and it will glide back into place. Previous to doing this some firm substance should be put into the mouth so that the jaw cannot shut on the thumb of the surgeon while making this manipulation; or the fingers can be guarded with something to prevent cutting by the teeth. Perhaps it is not worth while to delay longer on this. It is not common. It is almost impossible to fail to recognize it. It is easy of reduction.

Dislocation of the Clavicle. — Dislocation of the clavicle is rare. If it occurs, the common form is a dislocation of the acromial end upwards, with rupture of the ligaments. A rarer occurrence is dislocation of the sternal end of the collar-bone. All these dislocations are easy to recognize, can hardly help being seen. It is very difficult to press the bone back into place, and almost impossible to keep it there. The only one of consequence, as regards endangering life, is dislocation of the clavicle backwards behind the sternum, when it presses on the pneumogastric and on the trachea, and leads to dyspnœa and to severe symptoms. That accident is extremely rare. Something must be done to relieve it; and the most practical thing would seem to be to divide the fibres of the sterno-mastoid muscle subcutaneously, and endeavor to press the bone back into place. Failing of that, I suppose a resection of the end of the collar-bone, with antiseptic measures, would be proper and justifiable.

Usually dislocations of the sternal end are upward and forward, and do not entail any injury to the parts in the throat, but entail deformity, and subsequent bad use of the arm.

We try to force the bone and keep it back in place by strapping and pads, and especially by having the shoulder drawn back as far as possible, to draw the collar-bone out. Treatment is to be continued four to six weeks.

The ordinary dislocation of the collar-bone is of the acromial end upwards. The ligaments are ruptured, and the bone pulled up by the fibres of the trapezius muscle. And we find, on looking at such a patient from behind, a rigid line along the fibres of the trapezius, which is rather diagnostic of dislocation; and a projection, which, of course, would have to be diagnosticated from a fracture of the acromion process with drooping of the shoulder.

The treatment is about the same, whether it be fracture of the acromion process, or dislocation of the collar-bone. Crowd the arm well up, and strap the acromion down, and hold it in position four to six weeks. The results are fair. A little deformity frequently remains. The arm, however, becomes good and useful.

The other dislocations of the acromial end are rare. It is not worth while to waste much time on them. It may be dislocated a little forwards or backwards. The treatment would be about the same. Force the shoulder back; pad; and force the collar-bone down into place.

Dislocations of the Humerus.— Dislocations of the humerus are generally described as four in number. One is so extremely rare that we can eliminate it in speaking of treatment, and that is where the bone is thrown out of the socket and lodges back on the scapula. You may never see such a case. When it occurs the diagnosis is very easy.

The ordinary dislocation of the humerus is forward under the coracoid process, what is called subcoracoid. The bone comes out of its flat socket and slips forward, and a little downward, under the coracoid process, and rests between the coracoid and the ribs.

The other common dislocation is when the bone drops straight down and rests in the axilla.

Now in either of these two common forms, the roundness of the shoulder is lost. The natural shape of the deltoid muscle, instead of being rounded out, looks flat. If we seize the shoulder in this way, we are conscious of a vacancy, an empty space under the acromion process. We can compress the muscular fibres as we cannot do on the sound side. The arm appears to be slightly lengthened. Motion is lost. If we place the hand on the opposite shoulder and have it held, we cannot bring the elbow down in contact with the ribs, if the bone is out of the socket. We may force it down temporarily, and it springs up again. We can compare that with the sound side; and find that it is perfectly easy to have that laid down in its normal position. The loss of roundness of the shoulder; loss of mobility; loss of function, of course; and inability to approximate the elbow to the side, are the important points. In addition to this, if dislocation of the humerus happens to be downwards into the axilla, if we raise the arm from the side, and pass the hand well up into the axilla, we always find the head of the bone there. If there is any doubt, we can compare with the sound side; and can hardly fail to find projection downwards of the head of the bone. If there is subcoracoid dislocation, we can feel the head of the bone under the fibres of the pectoral muscles.

Obstinate abduction of the arm from the side; loss of motion, and disability, are common to the two forms of dislocation.

The patient having been etherized, and the muscles all relaxed, the obstacle to reduction would appear to be to get the head back through the capsule, through the rent by which it went out. In many cases this appears to be very easy indeed. Ether having been given, with a little traction and manipulation, the bone frequently slips back into place. Various manœuvres are contrived for that purpose. One secret in reducing dislocations of the shoulder is to render the scapula immovable; because if that moves with the humerus we lose all power of reducing the head. The scapula is rendered immovable by a strong bandage put around it and held by an assistant with great firmness. If that is not sufficient, additional immobility can be gained by applying some heavy adhesive plaster over the scapula, and drawing on the ends of that. The scapula secured; the arm is got back into place by various manœuvres, If, as is usually the case, it is in the axilla, then if the arm can be drawn down and the head forced up from below, it is easily pried into place. That is done by the surgeon's foot in the axilla, who sits beside the patient, draws upon the arm, and presses the head of the bone back into the socket. If this fails: having the scapula held, and drawing firmly off in the longitudinal direction frequently gets it into place. If this fails, the patient is etherized and placed upon the floor, and the foot of the surgeon is placed upon the shoulder, and the arm seized and drawn directly upwards, and that frequently succeeds.

Then there is the method called Kocher's, by which the arm is held firmly in to the side, and the bone rotated out and lifted into the socket. There is rarely a failure in one of these methods. Sometimes one succeeds a little better than the other; but the simpler one of pressing with the foot in the axilla is frequently successful. We are entirely sure that the bone goes in by hearing it, or feeling it, — by hearing a distinct snap when it goes in.

That is all the treatment. The trouble is to prevent it from dropping out. The capsule has been badly lacerated, and the joint is really no joint at all. It drops out very easily unless taken care of. The motion by which it will drop out is in lifting the elbow away from the side; hence, in the subsequent treatment, we must take great care to keep the elbow in to the side by a body bandage, and to put the forearm in a sling. With the humerus approximated to the ribs and the elbow supported, it is impossible for the head to drop out. That should be continued about a week, and then the arm put in a sling only. In some cases, where there have been repeated dislocations, it is a good plan to fasten an elastic around the arm and to the side, which prevents outward movement for many weeks.

It is a long while before the adult recovers full use of the shoulder. In lifting the arm to the head, or in making the motion of trying to put on a coat, it is long before either can be done without pain.

All dislocations are accompanied by great swelling, more so than fractures; consequently, after the injury is reduced, subsequent treatment should be very gentle. No very hard bandages should be put on. Frequently, evaporating lotions or leeches may be called for, and tight bandaging will not be borne. After the part has recovered, and the patient is left to himself, the use of the arm may be much improved by gentle manipulations, massage, liniments, warmth, — agents of that class.

What we have to dread in any old person after dislocation is the chronic rheumatic arthritis that may be set up in the joint; and we cannot always predict that they may not afterwards have some stiffness or roughness of the joint, although the part may be perfectly restored to place.

Dislocations of the Elbow. — The elbow is a complicated joint, and the great point is this, when it is dislocated and you treat it, to be sure that both bones are back into place. It is very easy to appreciate, if the ulna is out, when it comes back into place with quite a loud snap. The joint is locked again, and the motions of flexion are restored and the symmetry of the arm; but the head of the radius is a small bone, its motions are peculiar, and it may not be perfectly reduced; and if it is overlooked, it is disastrous to the future use of the joint.

The books make a great many divisions of dislocation of the elbow. They are not, however, of very much importance. They are called backwards and inwards and backwards and outwards, etc., but, practically, they are all backwards, and more or less turned from side to side. The whole treatment consists in getting both bones back into position. The patient having been etherized, we go through the motions of having the fulcrum applied at the bend of the elbow, the arm steadily held, and the forearm first extended, and then brought up forward; and then, if we have restored the ulna, we may carefully look for the position of the head of the radius, and endeavor, by prying, pronation, supination, flexing and extending, to get that back into its normal position.

The diagnosis of dislocations of the elbow, of course, turns on the relative position of the three points, the two condyles and the olecranon, that we mentioned in speaking of fractures just above the elbow-joint. If they are in their normal position compared with the other arm, it cannot be dislocation; it is probably a fracture. If the ulna is drawn far out of its normal position as regards the condyles, then it is a dislocation. Of course the final test is in getting the arm in place and seeing whether it will stay. If it will, it is dislocation without fracture.

In all healthy subjects, and especially in young subjects, dislocation of the elbow is not followed by impaired use of the joint. It takes time, but motion is generally perfectly restored. It is not desirable to keep splints on too long. I think that is quite an important point. You must see in a joint so firmly locked together, that if it is once put back into place it is not very likely to get out again, and a confinement for a moderate length of time is all that is necessary; and after the synovitis is subdued, it is better that the patient should begin moderately the use of the arm. Cases have occurred, occasionally, in which, through fear of using the arm too soon, it has been tied up too long, and the consequence was that a simple synovitis has been converted into fibrous anchylosis; and then both physician and patient may be at a loss to know whether there had been a fracture or not; whether it would be safe to move the arm, and whether it would ever recover its mobility.

Very careful diagnosis from fracture. Very careful reduction of both bones back to their perfect position; then a short treatment afterwards, with the arm on the internal angular splint, and a sling; the back of arm uncovered, so that we can apply evaporating lotions or leeches; no tight bandaging being used.

Dislocation of the Wrist. — Dislocation of the wrist is almost unknown. Few people have ever seen one. It is accompanied with fracture, — fracture of the radius. Fracture of the radius and dislocation of the wrist, or Colles' fracture, is common. Dislocation of the wrist pure and simple is extremely rare. Of course, I would not include in this statement those cases of compound fracture where, from severe blows and laceration, individual bones of the wrist may be thrown out of place; but dislocation of one row of carpal bones from the other, or of a row of carpal bones from the articulation with the radius, is extremely rare.

Treatment would be obvious and simple. Draw it back into place and confine it on splints, and gradually use passive motion.

Dislocation of the Thumb. — Dislocation of the thumb, at the joint where the phalanx joins the metacarpal bone, is recognized as an extremely annoying dislocation. It is complicated by the fact that there are two little sesamoid bones; and when the thumb is thrown out, the phalanx goes down into the palm and gets entangled in the tendons. Make a fulcrum of your own left thumb under the joint, then pull the patient's thumb directly forwards, and then force it back beyond a right angle. It is difficult of reduction, and in some cases requires subcutaneous section of some of the fibres. It must never be allowed to remain out of place, because it does not give a good result in its false position; and, rather than leave it, we should divide the tendons, or even resect a portion of the bone and push it back into its place, and treat it afterwards as an excision, rather than leave it in a false position, where the thumb is practically useless and painful.

Dislocation of the fingers can be reduced by extensions and prying backwards.

Dislocations of the Hip. — They are four, of which one is excessively rare. Two are the common ones. These two which are common are merely modifications of each other. The head of the bone may go out of the socket and directly upwards and backwards upon the dorsum of the ilium, in which case it is called a dislocation on the dorsum. As a modification of that, it may not go up quite so far, may slip out and drop a little lower down into the sciatic notch. Dislocation into the sciatic notch and dislocation on the dorsum are practically the same thing, except in the amount of shortening. On the other hand, it may drop out and go directly down into the thyroid foramen, in which case the limb is a good deal lengthened instead of shortened. In very rare and exceptional cases it is thrown out and goes up upon the pubes, and rests either near the anterior spine, or upon the pubes itself. That, however, is excessively rare.

The ordinary dislocation in a strong person, who receives a violent injury, is dislocation upon the dorsum. Now this is so marked in its symptoms that it should hardly be overlooked. The limb is shortened from one and a half to two and a half inches, at once. There is not gradual shortening. Obstinate inversion of the foot to an extreme degree takes place, and the patient cannot in any degree turn it out. We have somewhat the characteristic appearance of a patient with old hip disease and dislocation on the dorsum, which you are familiar with in that disease. If the patient is thin you may feel the head of the bone upon the dorsum by manipulation and examination; but if the patient is very fat and large, it is difficult to feel it under such a dense mass. On the other hand, we have two to two and a half inches of shortening, extreme inversion, total loss of motion about the part, and the history of a violent injury. This injury has to be of a peculiar character; and the blow to knock the bone out usually has to be received on the back of the trochanter, in some way, so that the moment the bone is knocked out and passes over the edge of the socket, the muscles seize it; and in ordinary cases pull it directly up; and in less violent cases pull it back; and, in exceptional cases where the blow is received from above downwards on the trochanter, it is conceivable that it may fall directly down into the thyroid foramen.

Great weights and heavy bodies striking the nates and side of the trochanter from behind are the usual causes of dislocation. The falling of timbers is a cause. I remember one case in which the cause was the falling of a sign from a building. The caving-in of earth occasionally, though that is more apt to make a crushing of the pelvis. If the bone is thrown out of the socket into the sciatic notch, the shortening is about one-half as great; the inversion is just the same; but the foot is turned over the toes of the opposite foot, instead of over the dorsum. Total loss of function, and the other signs, are the same.

If, by any chance, the bone is knocked down into the thyroid foramen, it is lengthened and turned outwards and partially flexed, and is very characteristic in its appearance. If thrown up upon the pubes, we have shortening, but the toes usually turned more or less outwards, and partial flexion and abduction occur.

Of course, profound etherization is the first measure. Then the patient had best be treated on the floor, or some firm place, low down, where the surgeon can stand over him. A thin mattress or blanket spread on the floor is sufficient. It is essential here, in manipulating to reduce the dislocation, that the pelvis be held still; just as in trying to reduce a dislocation of the humerus, the scapula should be held still. This is to be done by an assistant kneeling and compressing the rim of the pelvis firmly on both sides, while the surgeon makes his manœuvres. The pathological phenomena of dislocation upon the dorsum, or into the sciatic notch, are about the same. The muscles are relaxed by ether; but the Y-shaped ligament is wound about the head of the bone, and the bone will not go back until it is relaxed and unwound; hence bend the thigh gently upwards and turn it in towards the abdomen, and then the surgeon takes the lower leg as a fulcrum, and rotates the head out, and lifts it into place. This generally succeeds the second time, if not the first. Flex, adduct, abduct, rotate and lift, is the brief rule.

It occasionally happens, to the annoyance of the operator, that in reducing a dislocation upon the dorsum he fails, unlocks the ligament, gets the bone almost back into place, but instead of gliding into the socket it then slips down, and he has converted a dislocation upon the dorsum into a dislocation in the sciatic notch. In that case he has to repeat his manœuvres, and lift more forcibly over the edge of the socket.

In the dislocation into the thyroid foramen, the reverse manœuvre is to be brought about to unwind the ligament and get the bone to slip back into place. A great deal of time might be spent in illustrating this to you; but it is done so much better and more perfectly in Dr. Bigelow's monograph on the subject, that I advise you to look at his photographs, and the position of the ligaments, and the manœuvres.

Dislocation of the hip is rare. It is of immense importance to recognize it, and to reduce it within the first few hours after the injury; there are two common forms, dislocation into the sciatic notch and upon the dorsum, easily recognized by their peculiar deformity. Ether gives immense assistance in the reduction; and these manœuvres never, I think, fail of success in getting the bone back.

The subsequent treatment is important. In order to prevent the bone from slipping out again, everything being badly lacerated, it is best to make a splint of the other leg; and the knees should be firmly bandaged together, and the patient kept on his back. The patient should be kept in bed two or three weeks, before he is trusted to move the leg out. It will be swollen and painful; and it will take a good deal of time before he will recover the utility of the part. When he has partially recovered, rubbing, massage, etc., may be used. Here, again, in the elderly person, we may have to treat chronic rheumatic arthritis; but, on the other hand, it is fair to say that dislocation of the hip in the old person is not common at all; for the injury, if received, is almost sure to break off the neck of the femur, instead of putting the head of the bone out. Dislocations of the hip are most common in young persons; and in very powerful vigorous men, men in the prime of life, who receive violent injuries.

Dislocation of the Knee. — Dislocation of the knee is almost unknown, excessively rare. Pathologically it is common: but as a traumatic injury, unless accompanied by compound wounds, opening into the joint, or by breaking of the bone, it is extremely rare.

The semilunar cartilage, which is fastened on the head of the tibia and deepens the socket for each condyle, is occasionally displaced, with very serious consequences; and it is best, perhaps, to allude to that a little more at length. The patient feels something slip about the knee; tries to manipulate it and get it back into place, and finds he can do everything except straightening. In addition to that he may notice a little thickening or projection just at the line of the joint. It is a displaced semilunar cartilage. It is pushed out over the edge of the tibia and caught in the joint, so to speak. If not recognized, it stays there. It is practically incurable. Nature accommodates herself to the new condition; and the patient is left with a partial stiffness of the knee, and inability to make perfect extension.

It is important to be recognized; and can be readily cured, if recognized. The patient should be thoroughly etherized; the leg flexed far back, and snapped back into place with extension; the semilunar cartilage, in the large percentage of cases, will slip back into place. Then keep the limb perfectly straight on a ham-splint; and later, begin to use passive motion to restore the joint. It is a quite common accident, and requires care in its treatment.

Dislocation of the Ankle. — The ankle can hardly be dislocated without fracture of one, or the other, of the sides of the mortice which hold it in. Fracture of the fibula, with rupture of the internal lateral ligament, makes dislocation outwards; and the treatment to reduce the fracture, and set the parts, reduces the dislocation.

Dislocation of the Astragalus. — Occasionally the astragalus, which lies between the tibia and os calcis, is knocked out of its position. You can see that it must be a very peculiar injury to do it. Usually, the patient falls from a height, and alights upon the edge of something like a brick or stone, and strikes in the arch of the foot. In that way, occasionally, the astragalus is pried out of place. The important point to speak of in this connection is not the diagnosis. That is very easy, for the parts are superficial. By manipulation, we find that there is no crepitus and no fracture. The important point to speak of is the excessive difficulty of reducing this; and the disastrous effects, if left unreduced. So that after the patient has been etherized and attempts at reduction fail, it is considered better to excise the bone, rather than leave it in its false position. Possibly, cutting down to excise it, and dividing some fibres, may enable us to slip it back into place. But if that cannot be done, it had better be excised, and the cavity allowed to fill up; and with a shortened leg and a shortened foot, the patient will usually get along well. On the other hand, if the bone is left out of position and attempts at reduction fail — I have seen several cases — and, in fact, the universal testimony of surgeons is, that you have a very useless foot, and also a very painful foot. The patient walks lame, and with extreme difficulty. He is liable to ulcerations and necrosis of the bone; has not motion of the joint, of course; and is crippled worse, almost, than with amputation of the foot. So that in this rare injury it is better to etherize; then to manipulate; then to make a few cautious incisions, and subcutaneously to divide some of the apparently resisting parts. If those things fail, it is wiser to really excise the bone than leave it in its false position.

A word more that I did not mention under fractures. You must be very careful not to mistake a fracture of the surgical neck of the humerus for dislocation. That mistake has been made a good many times. You may judge how disastrous it would be to go through the motions to reduce a dislocation, and apply force to a fracture, when there was really no dislocation at all. It all turns upon this, of course, whether the injury is below the head of the bone in the neck; or whether there is absolutely a vacancy between the acromion process and the head of the bone. That point settled, the rest of the diagnosis becomes easy.

It is hardly worth while to take up time by considering the extremely rare cases where fracture and dislocation coëxist. There are such cases. When recognized, the treatment is, of course, extremely difficult. We are usually advised to endeavor to put the fractured parts into position, and to allow time for union; and then make a cautious attempt to get the head of the bone back into place in the socket. It is obviously impossible to do this until we have some leverage and fulcrum on which we can push back. A very important question is, sometimes, whether it would not be wiser to excise the head of the bone, and leave the patient with an excised false joint, rather than to risk the loss of mobility which we shall get by having a fracture united, and the head of the bone lying out of the socket.

SECTARIANISM IN MEDICINE.[1]

BY E. R. CUTLER, M.D., WALTHAM, MASS.

DEFINITIONS.

I do not find in any dictionary or book of synonyms what I consider a full definition of the word "sect"; and, while I do not claim to be superior to these authorities, I shall, nevertheless, define it to be "a subdivision within a larger body having an organization and a distinctive name and creed." The word "school" would be its nearest equivalent. This is well defined to mean the "followers of a teacher or the adherents of a system of doctrine." Compared with "sect" this word does not so forcibly carry the idea of organization and separation. It is too broad and dignified a name to characterize the small and diminishing differences among classes of medical men. Therefore, I shall use the word "sect" and its derivatives as the most convenient and appropriate ones. By sectarianism I mean devotion to the interests of a sect or party as opposed or superior to those of the whole body.

CAUSES OF SECTARIANISM.

That there are sects, and that there is sectarianism, in medicine requires no proof. That their existence is an opprobrium I think also needs no proof. I think they are a scandal and an anachronism. In medicine they have no right to exist. So far as we are sectarian we are unscientific. Science is knowledge. Sect, wherever found, is based on ignorance or imperfect knowledge. It may be sustained and perpetuated largely by prejudice and partisan feeling, but its ultimate ground is uncertainty about fundamental facts.

Sectarianism in religion is difficult to deal with, because it is founded upon events long past whose occurrence can never be absolutely verified, and upon documents which are claimed to be of a miraculous and divine origin. Such a claim at once puts them beyond the efficient application of scientific criticism. Neither history nor philosophy can ever furnish irresistible proof on these subjects. If they could, they would long ago have done so, for a multitude of the best equipped men have given themselves to the task since the beginning of the Christian era. The result has been confusion worse confounded; and the only possible hope of an organic union of Christian sects is in mutual concession. Whether such union will ever come about I will not venture to predict; but every one will admit that the present condition is one of reproach and weakness to the church.

Among religious denominations it appears to be true that the smaller the difference the greater the antipathy.

In medicine, however, there are no essential reasons for sectarianism. In the first place, minor differences do not constitute mutual incompatibility; in the second place, the art of healing depends upon facts and principles which are intrinsically capable of scientific and logical demonstration. I do not say that such demonstration has yet been achieved, but its achievement is not hopeless or so remote that the present generation may not set itself about realizing it.

The evil of sectarianism is specially flagrant in this land of liberty where each thinks and acts as he pleases up to, and often beyond, the limits of social safety, and where each is accustomed to consider his own opinions as good as those of any one else.

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[1] Delivered before the Middlesex South District Medical Society.

An important reason why sects flourish so here is the comparatively backward state of scientific attainment.

These divisions are further promoted by the ridiculous multiplication of medical schools, which absolutely insures a low standard of knowledge among both teachers and scholars, as well as the propagation of personal and sectarian opinions unmodified by the corrective power of broad and varied instruction and experience.

It is claimed by the adherents of homœopathy that its comparative failure in most of the European countries is owing to the prevalence of the military and despotic elements in their governments, which are largely in sympathy with the old medical organizations; also that prejudice and tradition have a far greater power there than here. I think there is little force in this claim, as is shown by the fate of Koch's treatment of tuberculosis, a measure which it might almost be said was promulgated by the government itself. As you know, this was immediately subjected to the most rigorous tests and, almost in a twinkling, mercilessly strangled in its very birth-place, to the great chagrin of its author and the minister of public instruction. The great enemy of homœopathy is the scientific spirit which demands irresistible proof, and which is much more highly developed in Europe than in America.

EVILS OF SECTARIANISM.

(1) The profession is put in a discreditable light before the public. Of course, the public is mistaken in regard to the merits of the case, but this is not to be wondered at. Our profession itself is greatly to blame for the situation. Instead of recognizing the right of every man in it to hold and apply in practice any opinion which commended itself to him, it has adopted the ecclesiastical method of persecution. It has adjudged certain lines of theory and practice to be heresy, and has treated those adopting them in the true mediæval spirit with professional ostracism. Instead of patiently opposing error with argument and fact, which would certainly overcome it in the end, it drove the heretics from its fellowship beyond the reach of persuasion or conviction, thus virtually compelling them to set themselves up into sects which have now become so well organized and established that they occupy the position of very respectable rivals, and enjoy the support and sympathy of multitudes who care little for their special practice, but regard them as martyrs to our bigotry. Then, as if to insure them the full advantage of their position, the members of the profession very generally allowed themselves to be called by a distinctive and sectarian name, thus reducing themselves to the same ethical level. Thus, while the homœopath gloried in and profited by his title, the rest of the profession, in this country at least, found itself almost compelled to accept the ridiculous denomination of allopaths. Of course, this has been, especially of late, generally disallowed; but it is still freely used by the public, and even if we do insist on the somewhat more respectable title of "regulars," we are still looked upon as only a larger sect. Thus the whole vantage-ground of professional dignity and unity was lost; and what was really (at first) a simple diversity of professional opinion came perfectly naturally to be regarded by the people generally as a mere factional quarrel which resulted in the larger body turning out the smaller one for mere opinion's sake. I say the fault is not so much with the people as with the profession; and great numbers of medical men have not even yet become possessed of the idea that there is nothing reprehensible in any mere opinion or practice, but only in the public announcement of the same for the purpose of securing patronage, which is essentially quackery.

This distinction was never made clear enough.

The by-laws of the Massachusetts Medical Society specify as a qualification for membership preliminary to examination by the censors, "that he does not profess to cure disease by, nor intend to practise, spiritualism, homœopathy, allopathy, Thompsonianism, eclecticism or any other irregular or exclusive system generally recognized as such by the profession or declared so by the councillors of said Society."

I think the result of the application of the above rule and similar ones has been only to divide and weaken the profession, to obscure the real distinction between honorable practice and charlatanism, and to make the latter easy and respectable for thousands of men who could not maintain themselves in open and unrestricted competition. So I say the profession is put in a discreditable light before the people, who think it consists of two or more rival sects, one of which is bigoted and intolerant, while the others are just as good and just as successful, and ought to be encouraged and championed. Our attitude before the people is all the time explanatory and defensive, and our ethical point so fine that our would-be defenders cannot see it distinctly or maintain it heartily. The public naturally takes the side of the apparently persecuted party; and its material support goes with its sympathy, to the detriment of persons and institutions which need both. Nothing can appear more puerile to disinterested observers than personal animosity or mutually antagonistic organizations based on diversity of opinion or practice within a great profession. Of course, it should be said, on the other hand, that nothing can be more contemptible than truckling to lay prejudice, or appealing a strictly professional question, like that of therapeutics, to the public, as is done when a name or a creed are openly announced and patronage bid for thereby. The public, however, sees no harm in this; and as the general profession has failed, at least until lately, to make the point plain, it still suffers in public estimation.

(2) Under the policy of non-intercourse set up by us on this insufficient ground, mutual enlightenment, reconciliation and assistance are impossible. A free discussion within the profession would long ago have resulted in the total annihilation of Hahnemann's preposterous theories concerning the nature of disease and the power of drugs. They were promulgated before modern science even had its birth, and before its present powerful and precise implements of research had been even discovered. They can only survive, I think, where sectarian walls shut out the light.

On the other hand, it does not follow that because some of Hahnemann's theories were to the last degree grotesque and his practical conclusions thereby invalidated, therefore all that he and his followers believed is false.

The central idea of the system *similia similibus curantur* was not original with Hahnemann, and in the judgment of many competent and unprejudiced men still furnishes a clue to valuable means of cure, especially in functional diseases.

Homœopathic practitioners could not attain their present measure of success if their creed was wholly a delusion. It is idle to ascribe it entirely to their surreptitious use of material doses of medicine under allopathic or empirical indications or to the unaided powers of nature. The evidence of the firm belief of these men in their theory is furnished by their great enthusiasm for it, and the fact that they seldom or never abandon it. Furthermore, many items of strictly homœopathic practice have been approved by teachers like Ringer and Bartholow, and generally adopted by the profession.

That many medicines when given in large doses produce effects directly opposite to those of small doses is well known.

If a substance is shown by experiment to act specifically and powerfully on certain organs or tissues, it is reasonable, at least in the absence of better means, to try small doses of the same substance in disorders of those parts. Of course, this is simple empiricism, and a homœopath would smile with contempt at it; but nevertheless I believe it is the sole basis of a reasonable and successful homœopathic practice. Again, the minute subdivision of medicines, though sometimes carried by homœopathists to a monstrous degree of absurdity, may be a useful preparation for speedy absorption and therapeutic action, and is being utilized by our best pharmacists.

If these items of homœopathic theory and practice are of value, they ought to be in the possession of the whole profession; and the latter is the loser to the extent of their value, under the policy of non-intercourse.

Of the loss which accrues to the homœopathic practitioners themselves from lack of association with the rest of the profession, I need not say much. It is evident that their theories lead them away from pathological anatomy, from the physical diagnosis of disease and from its local, mechanical and surgical treatment, while the latter is widening its scope with great rapidity.

Think of the inroads which these and other lines of treatment have made, and are yearly making, into the territory of drug-therapeutics, even among homœopaths. Without going at all into detail, let me simply mention electrotherapy, hypnotism, massage, hydrotherapy, radical and palliative surgery — as applied within a few years to effusions into normal cavities; to obstruction and perforation of any part of the intestinal and biliary tracts and to many other abdominal lesions; to gonorrhœal, puerperal and tubercular infections of the pelvic organs and joints; to ectopic gestation; to tumors and injuries of brain and cord; to plastic operations on the cervix uteri and perineum; and to diseases of the eye, ear, nose, skin, etc.

Our homœopathic friends also certainly run great risk — to say the least — of being led by their faith in drug-treatment into serious and fatal mistakes and delays.

The difficulty in deciding when a case ceases to be a medical one and becomes surgical is often very great, and the decision critical. The temptation to continue medicinal treatment when the alternative is a serious surgical operation, is very strong, especially if one cannot perform the operation and flatters himself that he is guided by the one and only true therapeutic law.

The tendency to neglect the pathological diagnosis, not required for average homœopathic treatment, in favor of the easier symptomatic one is a serious weakness; for, if for no other reason, the whole vast subjects of the hereditary transmission of disease, and private and public prophylaxis against infections which destroy the larger part of the human race, depend upon it; and I believe that the time will come when a successful scientific treatment will depend on it.

In fact, I think it is evident that the homœopaths must of necessity be guided more and more in their treatment by the pathological condition of the patient, as discovered by physical examination, that is, by the objective signs of disease rather than by the patient's feelings, which constitute its subjective symptoms. These latter bear no constant relation to the former; so that if one is guided by them, he may be treating very diverse conditions or processes by the same remedy or, *vice versa*, applying entirely different medicines to the identical pathological process. This may be correct and successful homœopathic treatment, but it sounds highly irrational to the unsophisticated; and it seems certain that a really accurate knowledge of the pathology of disease, such as science is determined to seek and find, must create scepticism as to the value of remedies whose indication is sought in the patient's feelings. Now all the means of diagnosis are employed by homœopaths, and their use taught in their schools. The stethoscope, the thermometer, the microscope, the test-tube, the speculum, etc., as well as our unaided eyes and fingers, are all means of reaching a little nearer the essential condition than the patient's statements would carry us; and they tend to supplement or even supersede these and guard against erroneous conclusions unavoidable if guided by them alone.

True we have not penetrated into the secrets of the essential nature of the pathological, any more than the physiological process; but it is an enormous gain which bacteriology and chemistry and microscopy have already secured in that direction.

All these things must inevitably tend straight away from reliance on mere symptomatology; and our homœopathic friends cannot resist the tendency if they try. That they will necessarily use all these pathological gains of pure science is shown by the fact that they have always used such as they have had.

It seems to me that in these ways, narrow and sectarian views, especially when met by a supercilious opposition, are the source of serious loss to medical men of all persuasions.

(3) Useful legislation is prevented.

Suspicion and jealousy are easily aroused among the sectaries if any measure, State or National, is proposed by the non-sectarian part of the profession; they fear that it may in some way minimize their influence or antagonize their party interests. On the other hand, their factious insistence on the use of the highly and justly obnoxious sectarian title drives many high-minded men into an indignant and even arrogant refusal to have anything whatever to do with them. Thus effective co-operation for securing general legislation is prevented. I have been assured by a prominent lawyer that a bill to regulate medical practice and banish from the State the quacks who infest it in such numbers could easily be passed if the whole profession would unite in urging it.

The American Institute of Homœopathy adopted at a recent meeting a preamble and resolution reading as follows: "Whereas the creation of a single-man power in the person of a Medical Secretary at the seat of government is likely to interfere with the personal rights of both physicians and people, *Resolved*, that the American Institute of Homœopathy disapproves of all efforts on the part of our National Congress to erect authoritative medical standards by the appointment of a medical health-officer in the president's cabinet."

I am by no means certain that the plan of establishing such an office is wise; but the above resolutions were evidently dictated by the fear that it might be used to the disadvantage of homœopathic practitioners.

It is, I think, pretty generally recognized that medical instructors should not have the power of licensing their graduates to practise, but that it should be vested in some central examining board. Such boards exist in some States; but they have failed of establishment in Massachusetts because the power of the quacks has been reinforced by the influence of medical men.

(4) Hospitals suffer.

In all that I have said there is nothing new. You are all familiar with these things; and, while I have long been deeply sensible of the unfortunate condition of the profession, I should probably never have written a word on the subject, or changed my personal attitude toward homœopathic practitioners except for one circumstance, namely, the acute phase of the trouble produced by the springing up of hospitals in our small cities. The bearing of these hospitals on professional relations is very direct; and a few words to this point will develop the special purpose of this paper. The small hospital, growing with the growth of the population around it, and adapted to its wants is, with us in Massachusetts, a new institution. It is a part of the general socialistic movement of the day. It is made possible by the great expansion of the surgical field, not only in traumatic but especially in pathological cases, by the rapidly increasing willingness of the people to enter it for treatment, by the service of trained nurses, by the great facilities it offers for the securing of aseptic conditions.

It sometimes begins its beneficent work with small or no endowment, and depends largely on the personal interest and effort of its friends; and, in order to thrive, it should have the undivided and enthusiastic support of all the people. They should all feel a pride in it as one of their cherished local institutions. All causes of difference and bitterness should, if possible, be removed from among those who should favor and help it. Now just here the homœopathic question comes to the front; and it must be squarely met, or evaded by some indirection. It has been met in different ways in different places. In the large cities hospitals have been established and carried on upon an openly partisan basis. This existence of mutually exclusive institutions is a discredit to the profession, a vexation to the public, and a loss to both; but as the means for it are forthcoming, it is steadily continued.

There are now forty hospitals expressly homœopathic in the larger cities of the United States. In sixteen of these places are also professedly homœopathic medical schools; and in all of them and many others are homœopathic medical societies.

These institutions place almost insuperable obstacles in the way of organic union of the profession in these cities. But in the small places these outward difficulties do not exist, and the local conditions call loudly for co operation. At the present time the tendency in such communities is steadily toward the explicit recognition of medical sects in the by-laws of the hospital.

To show how important this matter is, and how inevitably and rapidly it must become a vital concern to the whole profession, I shall cite the following facts and figures. I omit from consideration, be it understood, all the hospitals of Boston and a considerable number elsewhere which are limited in their scope or supported by large endowment. I include only small, general hospitals supported by the people about them. But of this class I have given all in the State of Massachusetts as far as I know.

These hospitals are initiating a new phase of professional experience. They are greatly helping to raise the standard of professional work. They strongly favor a laudable professional ambition and pride. They are making the rural profession to a degree independent of the city expert and specialist, without serious detriment, I believe, to the public health.

The advantage of service in the metropolitan hospitals and teaching in the metropolitan medical schools alone gives these experts their superiority. No doubt they will continue to maintain it by these means, and this is as it should be. We need them in cases of unusual doubt or difficulty, and we cheerfully recognize their ability to help and instruct us. But we do not need to send them all the plums; and we do owe it to our respective constituencies to spare them the expense of imported advice and skill as far as we can, especially when they are generous enough to furnish us with the means of doing our own work well and improving ourselves thereby.

I think that in trying to enlist the humanitarian impulses of the people on behalf of the inmates of the hospital we may possibly fail to think and say enough about the advantage accruing to the doctors, and to the community outside indirectly, in the cultivation of their skill and self-reliance by the local hospital. This advantage is indeed no trifling one, nor one to be kept out of sight or made light of.

Our profession ought to make the most of every means for its own elevation and improvement.

It ought to be such that the people would look up to it as a strong, united and influential body, able to instruct and lead in all matters concerning public health and education as well. It is far better for the people that the average of professional accomplishment should be high, than that there should be a small number of medical men head and shoulders above the rest.

Now I claim for the hospital that it is, or should be, one of the very-important agencies for this general advancement of the medical profession, if all are allowed to share its advantages; or, on the other hand, it may aggravate and perpetuate invidious distinctions among classes and individuals if its privileges be limited to a few.

The hospital should be the pride of the profession, whose members should have free access to it for their patients and their work. There, at least, they should be ashamed to be guilty of negligence or slovenliness in diagnosis or treatment; there they should always find free and friendly assistance and advice; there they should see all those things done which could reasonably be expected of the local practitioners; and there should be made manifest who were most worthy of staff appointments. The hospital should be a sort of medical exchange.

The profession should be largely represented on its list of corporators, its trustees and all its working committees.

It should be understood that the doctors are capable — more so than any one else — of managing a hospital.

The hospital need not, and should not, assume the responsibility for the results of any cases except those treated by its staff; and, to protect itself, this latter should be small in numbers and composed of the very best men within reach. The staff should not monopolize the work.

Of course, they should receive no remuneration for their official work; but for all other work either they or other physicians should be paid by such patients as are able to do so after meeting the usual hospital charges. Very many cases go to the metropolitan hospitals because they can there secure the best attendance for nothing, to the loss of doctors elsewhere. On the other hand, many cases are treated at home, to their detriment, which would go to hospitals if the attending physician did not wish to retain his fee. Let him freely use the hospital to the mutual advantage of himself and patient, their financial relations being the same as before, except that the hospital must have prior claim. The one essential point is, let no man enter the hospital as a sectarian.

So much for Utopia. Now for Massachusetts.

(To be continued.)

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Original Articles.

THE COMPLICATIONS OF SCARLET FEVER AS OBSERVED IN FIFTY CASES.[1]

BY HENRY JACKSON, M.D.,

Physician to Out-Patients of the Boston City Hospital.

Through the kindness of Dr. Shattuck I had the opportunity of taking charge of the contagious service of the City Hospital last January. During this time 53 cases of scarlet fever were under my care for a part of their stay in the hospital, and many of them presented various complications, which offered a most interesting opportunity to study the various phases of this disease. The study of these cases was to me a source of much profit and interest; so that I feel a review of the month's work, with such conclusions as I can draw, may interest the members of this Society.

There is perhaps no disease whose course is more varied, or in which the possible complications may lead to more serious results, than scarlet fever. If the disease runs the usual course without any complications, it is mild in character, the only serious symptom being the prolonged desquamation, which demands absolute isolation of the patient on account of the danger of spreading the disease. Unlike measles, it is pretty satisfactorily demonstrated that the disease is most contagious during the stage of desquamation.

The cases under observation in January were of especial interest on account of the large number which presented serious throat lesions, as manifested by a membranous deposit in the pharynx or nose-pharynx: cases often spoken of as diphtheria complicating scarlet fever. But, as I hope to demonstrate to you, a careful clinical observation of these cases and a bacteriological examination as to their etiology proves that the membranous deposit seen in scarlet fever has no connection with diphtheria except a close anatomical resemblance, and even here there are, in many cases, well-marked pathological differences.

During the last seven years the following cases of scarlet fever have entered the City Hospital:

	Cases.	Died.
1886	42	2
1887	75	9
1888	93	6
The contagious service was opened in February, 1888.		
1889	42	0
1890	103	4
1891 to January 31, 1892	137	6
with diphtheria,	20	11

I give a summary of 53 cases, which I intend to report in detail as to the occurrence of various complications. They entered the hospital during the months of December and January. Where the history was obtained the eruption followed the onset of the first symptoms, as given below:

1 day	20 cases.
2 days	1 case.
3 days	1 case.

In three cases a membranous deposit appeared on the tonsils two days before the eruption. In two cases a membranous deposit appeared on the tonsil three days before the eruption. In one case, which a bacteriological examination showed was not diphtheria, the membrane was observed on one tonsil one day before the appearance of the eruption, though at this time there was a scarlet macular eruption on the hard palate.

Age of patients.

	Cases.
7 mos. to 2 years	3
2 to 5 years	15
5 to 10 "	20
10 to 20 "	12
20 to 30 "	3

Total, 53 cases. One-half the cases between 2 and 10 years.

Complications and Variations from usual symptoms.

	Cases.
Membrane in throat	20
Otitis media purulenta	9
Primary albuminuria (all with high temperature)	3
Nephritis later in disease	6
Abundant vesicular eruption in addition to usual scarlet rash	3
Lobar pneumonia	3
Widespread bronchitis and probably broncho-pneumonia,	3–5
Elevation of temperature later in desquamation without any assignable cause	7

Desquamation was completed

Average (37 cases)	in 54 days.
Longest	in 70 days.
Shortest	in 32 days.

Mortality, 11 cases.

	Cases.
Septic naso-pharyngeal disease	8
Spinal caries (infant.)	1
Acute nephritis (uræmia)	1
Moribund on entrance (no history)	1

If we throw out the case of spinal caries, which died many weeks after recovery from the scarlet fever, and the case moribund on entrance, we have a mortality of 9 cases in 51, in all but one of which the death was the result of intense general septicæmia, secondary to a foul naso-pharyngeal disease.

Of the uncomplicated cases none were very sick and none died. The chief interest centres in the cases complicated by membranous deposit in the throat, 20 in number, and these I wish to give in detail.

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[1] Read at the Boston Society for Medical Improvement, April 24, 1893.

CASES COMPLICATED WITH MEMBRANE IN THE THROAT.

Case I. A boy three years of age.

Time. Entered the hospital on the third day of the disease. The tonsils were enlarged, and on each was a well-defined gray patch; several small patches on the soft palate. The throat was clear in seven days.

Rash. The eruption was faint, and soon faded.

Complications. In the fourth week there was albumen in the urine and numerous casts, with many free blood-cells.

Result. Discharged well on thirty-seventh day. No septicæmia.

Case II. A boy fifteen years of age.

Time. Entered the hospital on the third day of the disease. The tonsils were enlarged; on each was a dirty gray patch.

Rash. Bright in color and well marked over whole body; high fever at first, with primary albuminuria.

Complications. None.

Result. Discharged well on seventieth day. No septicæmia.

Case III. A girl of nine years.

Time. Entered the hospital on second day of the disease. Both tonsils enlarged and covered with a thin gray membrane, which extended over the posterior pillars. On the fourth day the throat was practically clear.

Rash. A marked scarlet eruption.

Complications. In the fourth week there was a trace of albumen in the urine and a few casts of the hyaline variety.

Result. Discharged well on the fifty-sixth day.

Case IV. A woman twenty years of age.

Time. Entered the hospital on the third day of the disease. Tonsils enlarged, red, with prominent follicles; on the right tonsil there was a small gray patch.

Rash. Well marked.

Complications. None.

Result. Discharged well on forty-second day. No septicæmia.

Case V. A man twenty-three years of age.

Time. Entered the diphtheria ward. Tonsils swollen and red; on right tonsil several white follicular plugs, on the left tonsil a small white membrane and a small white patch on the left posterior pillar. In ten days the throat was practically clear. No rash.

Rash. On the second day a scarlet macular eruption appeared, which was followed by desquamation. In this case the question must of course be raised whether the scarlet fever was not a secondary disease implanted upon a preëxisting throat affection, but the eruption appeared so quickly that I am inclined to consider that the throat affection was but a complication of the scarlet fever, the eruptive stage being delayed.

Complications. None.

Result. Discharged well on the forty-fourth day. No septicæmia.

Case VI. A boy fifteen years of age.

Time. Entered the hospital on the third day of the disease. The tonsils were red and swollen, and on each was a patch of gray membrane. In four days the throat was practically clear.

Rash. Moderate; and on entrance, the second day of the rash, already fading.

Complications. None.

Result. Discharged well on the forty-second day. No septicæmia.

Case VII. A boy three years of age.

Time. No history obtained. There was a purulent discharge from the nose; the whole pharyngeal cavity was covered with a thick white tenacious membrane. The breath was fœtid.

Rash. The eruption was fading and desquamation was beginning.

Result. The child failed rapidly, and died on the fourth day after entrance. There was from the first a marked septic condition; pulse rapid and feeble; temperature high.

Case VIII. A girl seven months of age.

Time. Entered the hospital on the third day of the disease. Foul purulent nasal discharge. Both tonsils were covered with a thin, gray membrane; there were gray patches on the uvula and soft palate. Clear in seven days.

Rash. A faint macular eruption over whole body.

Complications. The purulent nasal discharge continued after the membrane disappeared from the throat. In the second week a double otitis media purulenta developed. In the fourth week there was a rapid rise of temperature, caused by a pneumonia of the left lower lung, and the child died in four days.

Result. Death from pneumonia on the twenty-fifth day.

There was a marked general septic condition from the first.

Case IX. A girl six years of age.

Time. No history obtained. Both tonsils enlarged, and on the right tonsil was a gray patch, which extended over the posterior pillar.

Rash. On entrance there was an intense scarlet rash; for two days there was a high temperature and slight albuminuria.

Complications. None.

Result. The patient was discharged well on the fiftieth day. No septicæmia.

Case X. A woman twenty-four years of age.

Time. Entered the hospital on the third day of the disease. Both tonsils moderately enlarged, and on each there was a thick gray membrane. On the fourth day the left tonsil was covered with membrane, which extended on to the anterior pillar. On the uvula and soft palate there were small patches of membrane. In four days the throat was almost clear.

Rash. Bright-red scarlet eruption.

Complications. In the second week the pulse was weak and irregular; the heart was not enlarged, — a systolic murmur at the apex. The unfavorable condition of the heart was transitory, passing off in a few days under absolute rest and small doses of digitalis. Convalescence was somewhat prolonged.

Result. The patient was discharged well on the fiftieth day. No septicæmia.

Case XI. A girl six years of age.

Time. No history. Membrane on both tonsils and uvula; patches of membrane on the soft palate.

Rash. Well-defined scarlet eruption. Purulent nasal discharge.

Complications. Throughout both lungs sibilant and sonorous râles, and in patches fine crackling râles, suggesting the existence of lobular pneumonia.

Result. Died in two days. Marked septic condition, with rapid and feeble pulse.

Case XII. A boy thirteen years of age.

Time. Entered the hospital on the second day. An ulceration on the right tonsil and a small gray patch on the right side of the uvula, which had considerably swollen.

Rash. A moderate eruption.

Complications. None.

Result. Discharged well on the forty-second day. No septicæmia.

Case XIII. A boy seven years of age.

Time. Entered the hospital on the third day. Both tonsils and both sides of the uvula covered with membrane. In seven days the membrane had disappeared.

Rash. Moderate in character, with a few vesicles.

Complications. In the fourth week otitis media left ear. A few days later acute nephritis developed, with marked diminution of the urine. Vomiting ensued, and he died in one week with uræmic convulsions.

Result. Death from nephritis, thirty days. No septicæmia.

Case XIV. A girl three years of age.

Time. Entered the hospital in diphtheria ward. On left tonsil there was a patch about the size of a finger-nail. Three days later a scarlet rash appeared, with moderate rise of temperature. The late appearance of the rash of course suggested that the scarlet fever was a secondary disease, not associated with the primary throat lesion. Eruption slight.

Complications. In the fourth week acute nephritis with general œdema developed. Desquamation ceased on the fifty-sixth day, and she was transferred to the medical service on account of the nephritis which still existed. No septicæmia.

Case XV. A girl two years of age.

Time. On entrance to the hospital she was desquamating. Both tonsils, uvula, pillars of the fauces and posterior pharyngeal wall were covered with a gray membrane. There was a foul purulent discharge from the mouth and nose. The edges of the nostrils and the lips were cracked, bleeding, and partially covered with scales. A bacteriological examination of the discharge showed streptococci and saprophytic organisms; no bacilli of diphtheria. The throat gradually cleared up, and her condition improved.

Complications. In first week otitis media purulenta. Fine bronchitis, probably lobular pneumonia.

Result. Discharged well on forty-second day. There was from the first a marked septic condition, as incated by the rapid, feeble pulse, irregular temperature and the bad general condition.

Case XVI. A girl of six years, sister of No. 15.

Time. On entrance to the hospital both tonsils, uvula and pillars of the fauces covered with membrane, which extended on to the posterior pharyngeal wall. Purulent nasal discharge.

Rash. A moderate macular eruption which faded in three days.

Complications. Dulness and fine râles in the right lower back. Coarse and fine râles through both lungs. On the sixth day double otitis media purulenta.

Result. Died on the seventh day.

There was a marked septic condition from entrance. Anatomical diagnosis from autopsy by Dr. Councilman: Acute bronchitis and broncho-pneumonia, acute spleenic tumor, acute endocarditis, acute nephritis, septicæmia from general infection of streptococci.

Case XVII. A boy of seven years, brother of Nos. 15 and 16.

Time. Entered the hospital with the history of sore throat for three days. Three days previous his two sisters had entered the hospital, one with a fully-developed scarlet fever eruption and one in the stage of desquamation. On the hard palate was a bright red macular eruption as is seen on the day before the appearance of scarlet fever. The boy was bright and said he did not feel sick. On the left tonsil was a patch of membrane, and two small spots on the pharynx above the left tonsil. On the second day the membrane had spread considerably, covering both tonsils and uvula. In the afternoon a rash appeared, and the following day there was a bright scarlet, macular eruption.

A bacteriological examination on the day of entrance showed a growth of streptococci; no bacilli of diphtheria. On the sixth day the membrane still covered both tonsils and the uvula; on the tenth day the throat was practically clear.

Complications. On the eighth day pneumonia developed in the left lower back; four days later in the right lower back, and the next day, which preceded death, in the left upper front.

Result. Death on fifteenth day from pneumonia. On sixth day general condition septic with rapid, feeble pulse.

Case XVIII. A girl, eight years of age.

Time. No history. On entrance both tonsils, pillars of the pharynx and posterior pharyngeal wall covered with thick gray membrane. Foul, purulent discharge from the nose.

Rash. Bright scarlet rash.

Complications. Râles throughout the chest.

Result. Death on day of entrance. There was a marked septic condition on entrance. Pulse very feeble and so rapid that it could not be accurately counted.

Anatomical diagnosis from autopsy by Dr. Councilman: Abscess and ulceration in pharynx; beginning croupous pneumonia; acute nephritis; acute splenic tumor; fatty degeneration of heart, liver and kidneys; general lymphatic hyperplasia; septicæmia from streptococcus infection.

Case XIX. A girl of twenty-one months.

Time. Child had been sick four days. Membrane on tonsil, uvula and pharynx; foul discharge from the nose.

Rash. Dull red eruption on abdomen and thigh which spread rapidly.

Complications. None.

Result. Died on second day. Some retraction of thorax and voice hoarse to slight extent. Marked septic condition.

Case XX. A girl, eighteen months old.

Time. On entrance a moderate macular eruption. Four days later a patch of membrane developed on the left tonsil and uvula; foul nasal discharge. In three days throat more clear. Rash became bright.

Complications. On the eighth day complete consolidation in the lower part of the left back, and death on second day with a gradually increasing dyspnœa. Septic condition.

RESUME OF TWENTY CASES COMPLICATED WITH MEMBRANE IN THE THROAT.

Age.	Cases.
Under 3 years	7
6 to 10 years	7
13 to 15 "	3
20 to 24 "	3

[illegible]

	Cases.
2d day of disease	[illegible]
3d " "	[illegible]
4th " "	1
6th " "	1
1 day before rash	1
2 days before rash	1
3 days before rash	1
Time not noted	6

In the last six cases it may be considered that in five the membrane appeared early in the disease as the following record is made as to the skin.

	Cases.
Intense rash	3
Moderate rash	1
Faint rash	1
Desquamation	1

Seat and extent of the membrane.

	Cases.
Both tonsils, uvula and pharynx	1
Both tonsils and pillars of pharynx	2
Tonsils and uvula	3
One tonsil and pillar of pharynx	3
Both tonsils	2
One tonsil	2
Whole pharynx and nose	5

Duration of membrane in 6 cases where noted.

Average	6 days.
Longest	10 days.
Shortest	4 days.

Character of the eruption.

	Cases.
Faint, slight or moderate	3
Marked or intense	9
Fading	1
Desquamation	1

Desquamation completed, of 11 cases which recovered.

Average	54 [illegible] days.
Longest	70 days.
Shortest	37 days.

Complications.

	Cases.
Slight albumin in urine and casts in 4th week	2
Acute nephritis	2
[illegible]	1
Otitis media purulenta	3
Parietal disease of the heart	1

Mortality, 9 cases.

	Cases.
Foul nasal discharge	7
Acute nephritis	1
[illegible]	[illegible]

Marked septic condition, 7 cases, of which only 1 recovered.

The fatal cases were all markedly septic in general appearance from the first except one, and he died of acute nephritis with uræmia in the fourth week, long after the entire disappearance of the membrane, and apparently well-developed convalescence.

Until by the bacteriological investigations of the last few years the question was definitely settled that the bacillus of diphtheria was not found in the membranous deposit on the throat of scarlet fever, great difference of opinion existed as to whether this form of scarlet fever was to be considered as a mixed infection of scarlet fever and diphtheria. Henoch has always been the most prominent advocate of the theory that the membrane was but a local manifestation of the scarlet fever poison. An observation of the clinical phenomena presented by my cases gives a good example of the essential factors on which such an opinion is based.

A deposit of membrane on the tonsils or pharynx is by no means a rare complication. In most cases this membrane shows but little tendency to spread, and especially does not invade the larynx and trachea. The existence of this membrane, with the exception of the intensely septic cases, does not exert any material effect upon the course or progress of the disease. Paralyses are not observed. Eleven of my cases remained in the hospital an average of fifty-four days, and paralysis was not noted in a single case. The mortality of my cases was large, nine out of twenty cases, but a closer inspection of the cases shows that in seven there was a foul nasal secretion; the secretion was abundant, sero-purulent, somewhat bloody and excessively irritating as shown by the abundant excoriation about the edges of the nostrils; of seven such cases only one recovered. The other eleven cases in which the membrane in six was widely spread over the tonsils and uvula or pillars of the pharynx, showed no evidence of a septic condition, and the scarlet fever ran the usual course of a mild disease without complications. Otitis media was noted only in the fatal cases.

There is no marked anatomical difference between the pathological lesions as observed in diphtheria and the membranous deposit seen in scarlet fever; in special cases there may be no difference, and at best no factor is of sufficient importance or occurs with sufficient regularity to make a differential diagnosis possible. In the membrane of scarlet fever, the deposit is less firm, it tends to be rather pultaceous and cannot be stripped off in large pieces or strips as in diphtheria. Secondly, destruction of tissue by ulcerative or suppurative processes are more common in scarlet fever than in diphtheria.

In Loeffler's first article on the bacillus of diphtheria he describes the organisms found in five cases of membranous inflammation complicating scarlet fever; in four the bacillus of diphtheria was not found; it was present in the fifth case, but this was one in which the membrane appeared on the eighteenth day and invaded the larynx. Since this work of Loeffler many have sought for the diphtheria bacillus in the membrane of scarlet fever, but in vain. In almost all cases a streptococcus is found, which most observers describe as identical with or very similar to the streptococcus of erysipelas.

Booker has recently published [2] a report of the examination of pseudo-diphtheritic angina in scarlet-fever. In none of the cases where there was membrane did he find the Loeffler bacillus. In all he obtained a streptococcus which differed from the streptococcus of erysipelas essentially in that its vitality in culture media was short. In one of Booker's cases (Case 3) there was a membranous deposit on the tonsils on the second day of the disease and two days before the eruption of the scarlatinal rash. The organism found was similar to those found in the other cases. This case is comparable to two of mine, namely, Nos. 5 and 14, in which the membrane preceded the rash two and three days respectively.

In my cases bacteriological examination was made in four instances. In two I made cultures from the throat during life and in two Dr. Councilman made cultures from the throat and internal organs post-mortem. In the first case (No. 15) there was a marked septic condition, a foul nasal discharge, and the whole posterior pharyngeal region was filled with a soft pultaceous membrane. I found streptococci in the cultures but no bacilli of diphtheria.

In the second case there was a membrane on one tonsil and no rash. The result was the same as in

[2] [illegible]

Case No. 1. In this case the rash developed in twenty-four hours. He gave a history of a sickness of three days, the chief symptom having been sore throat. The membrane was not due to diphtheria, it was not tonsillitis, and I think it fair to assume that in this case, and in Cases Nos. 5 and 14, the scarlet fever poison was the cause of the membrane while the eruption of the rash was deferred to a remarkably late period, the fourth day after the initial symptoms.

In the two cases examined after death by Dr. Councilman pure cultures of streptococci were found in the glands about the neck and in most of the internal organs. It is interesting to note that in one of the cases cultures from the kidney were sterile and no organisms were found in the kidney, though there was an acute nephritis, the acute inflammation having been set up by the toxines produced by the bacteria.

Pneumonia, lobar or lobular, was the immediate cause of death in six of the septic cases. Acute nephritis developed in two of the cases with membrane; one of the cases terminated fatally.

Otitis media was developed in three cases, all of which had a foul nasal discharge. But apparently the existence of the membrane was not an especially predisposing cause of otitis as it developed in six cases of 33 in which there was no membrane.

Pneumonia, lobar or lobular, was present in six cases: the same prevalence of this disease in septic throat cases of scarlet fever is noted by other observers. It is to be considered as the direct result of the general septicæmia which results from the streptococcus infection. In three of the cases the disease was lobar. Only one of these cases recovered, and that was one in which the essential disease was bronchitis though the existence of a few patches of lobular pneumonia seemed to me probable.

In summing up, we can say the presence of membrane in the throat exerted no material effect upon the course of the disease, except in the cases that presented a marked septic condition from the onset, and in these there was an extension of the disease into the naso-pharynx. The deposit of membrane in the throat may precede the eruption of the rash.

The membrane is not due to the bacillus of diphtheria. If the name diphtheria is retained as descriptive of the pathological condition it is practically important to remember that the throat lesion is but a local manifestation of the scarlet fever poison, and does not entail the danger of infecting another individual with the specific disease, diphtheria.

The six cases of otitis media in cases where there was no membrane, occurred in cases which offered no symptoms suggestive of such a serious complication until the onset of the primary fever due to the inflammation of the ear. In all the cases there was a sharp attack of fever, marking the beginning of the attack. In all the cases the discharge ceased before the patients were discharged.

Seven cases were of considerable interest to me in that during convalescence there was a considerable rise of temperature and pulse, without constitutional symptoms, in which repeated careful examination failed to elicit any sufficient cause for the fever. A boy who had an eruptive stage of marked mildness during desquamation, had for two months a temperature of 100° to 101° and frequent examination failed to elicit a single abnormal physical sign.

As two cases had for a varying but short period an irregularity of the action of the heart in rate and rhythm, it seemed to me possible that the mild fever might be due to granular degeneration of the heart. All the cases were kept in bed during the fever so that no strain was brought upon the heart. All the cases with elevated temperature which I speak of finally recovered without untoward symptoms.

Note. — Since I wrote this paper an investigation of a considerable number of cases of membranous inflammation of the throat in scarlet fever by Drs. Councilman and Williams, has demonstrated the presence of the Lœffler bacillus. In the light of this work I am wrong in saying that the membranous affection of the throat in scarlet fever is absolutely distinct from the very similar pathological process in diphtheria. — H. J.

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A CONSIDERATION OF ERYSIPELAS OCCURRING DURING THE PUERPERIUM.[1]

BY CHARLES W. GALLOUPE, M.D., OF BOSTON.

The complication of erysipelas with the puerperal state presents many points of medical interest, but perhaps the most important of all, at the present time, is the question of infection. The contagiousness of erysipelas has for many years been hotly argued from the clinical standpoint, but no conclusion could be reached until the development of bacteriology made proofs of another and more definite sort possible. The discovery of specific bacteria in anthrax, gonorrhœa, and other contagious diseases, led to the study of erysipelas by similar methods of inoculation with cultures from known cases. The first important contribution to this subject was a record of experiments on eleven cases, published by Fehleisen in 1883.[2] In each case he found a micrococcus of uniform character, especially abundant in the lymph spaces of the tissues actively affected. This was cultivated successfully and inoculated into the ear of a rabbit, where, in eight cases out of nine, the characteristic signs of erysipelas appeared, and the tissues were found to contain a chain-like coccus to which he gave the name of "streptococcus erysipelatis." Later experiments have proved beyond doubt the bacterial origin of the disease in every instance. Before this fact was demonstrated, and while the evidence was wholly clinical, the non-contagiousness of the disease was claimed by many observers, from the absence in their own experience of instances of transmission and from the failure to trace out in every case the source and method of contagion. This difficulty suggested the theory of an "idiopathic" erysipelas, and also of a special non-contagious form of the disease,[3] while the presence of a gross wound served to distinguish "surgical" from "medical" erysipelas. All forms of the disease are now known, however, to have a single infective cause in the shape of a micrococcus, which enters the system through a wound of the skin or mucous membrane, not necessarily large enough to be visible, perhaps even microscopic, but sufficient to expose the lymph spaces to absorption. In 1884, before this fact was established, D. B. St. John Roosa[4] announced his opinion that erysipelas was always traumatic in its origin. He did not believe that it could be generated in a sound skin, and explained the cases ascribed to cold, to the "traumatism of a high wind blowing upon the face." In the same year E. L. Partridge,[5] of New York, presented a careful summary of the evidence in these words: "It [erysipelas] is probably never of neurotic origin, nor is it always necessary for it to be preceded by traumatism; there is undoubtedly an idiopathic form in which the poison gains access, in all probability, through the respiratory tract. Of this latter view, however, we have no absolute proof, and the view which insists upon the necessity of an abrasion is therefore entitled to respect."

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[1] Read before the Massachusetts Medical Society, June 14, 1893, and recommended for publication by the Society.

[2] Fehleisen: "Ætiologie des Erysipels," Berlin, 1883.

[3] Goodridge, of Bath Royal United Hospital, quoted in Medical and Surgical Journal, vol. cx., January, 1884.

[4] D. B. St. John Roosa, reported in Medical and Surgical Journal, December, 1884.

The fact that erysipelas is now proven to be caused in every case by bacterial infection is sufficient to make its prophylaxis an important matter, and especially in the puerperal patient, presenting, as she does, a wounded surface in the lacerated vaginal wall, and a still more sensitive absorbent area in the uterine cavity with its patent veins and lymph spaces. But the subject assumes a still greater importance when we consider the possibility of erysipelas causing by inoculation a puerperal septicæmia — in other words, the possible identity of erysipelas and certain forms of puerperal fever. In proof of the individuality of the streptococcus erysipelatis, Fehleisen says:[6] "Though somewhat similar organisms are found in the pus of wounds and in pyæmia, the mode of growth of the micrococcus of erysipelas is found to be characteristic." This statement was made after limited experiment, and was disputed on two grounds. First, that some cases of erysipelas failed to show the specific coccus; second, that inoculation of the pure culture from erysipelatous subjects was able to cause, under varying conditions, all the manifestations of septicæmia. The value of experiments of this sort depends largely upon the care and technical skill of the observer, as the failure, in any instance, to discover a micrococcus is not an absolute proof of its absence; while, on the other hand, imperfect sterilization of apparatus might result in the development of other cocci than the pure culture derived from the erysipelatous tissues. A careful series of experiments on the mouse by Fraenkel,[7] in 1889, showed that inoculation of cultures from erysipelas caused, in one case, purulent ophthalmitis, in another peritonitis, and in a third abscess in the skin of the back. The experiments proved, in his mind, the identity of the streptococcus erysipelatis and the streptococcus pyogenes, while the "clinical differences in the disease were due to the mode and locality of the infection, perhaps also to the quantity of the virus and the disposition of the individual." Verneuil and Cado,[8] in 1889, proved by inoculation the identity of acute lymphangitis and erysipelas, and Mosny[9] found on autopsy of a patient who died two days after the onset of an infectious pneumonia, a streptococcus identical with the streptococcus erysipelatis, as proved by inoculation. The characteristic appearance and behavior of Fehleisen's coccus were disputed by Hell,[10] who reached this conclusion after many experiments: "With our known methods [of staining, etc.] can be seen no noticeable difference between pus and erysipelas cocci; they completely agree in morphological and biological aspects as well as in their behavior towards inoculated animals." A further discovery in the investigation of this subject is claimed by Jordan,[11] who states that "besides the true erysipelas streptococcus, not only the streptococcus pyogenes, but also other pus-formers, such as staphylococcus pyogenes, can cause erysipelas." He concludes that "erysipelas is etiologically not a specific disease. It is regularly due to streptococcus pyogenes, rarely to staphylococcus pyogenes. The difference in the action of the pyogenic coccus on the tissues depends upon difference in localization and upon variation in its virulence (increase or diminution). It is of a quantitative sort." This opinion he bases upon the study of two cases of inoculation from facial erysipelas, but that this was not convincing is shown by the comment of a German critic: "So many conclusions on so few cases; a pity they rest on thoughts rather than facts!" An opinion similar to Jordan's was expressed by Atkinson[12] before the American Dermatological Association in 1887 in these terms: "Erysipelas should be considered the expression of the effect of one of a number of specific causes, and, in that sense, should be regarded as a symptomatic inflammation."

However we may view this matter, the repetition of experiments has led to a general acceptance of the interchangeability of erysipelas and the septic inflammations. This is a rational belief to hold, for it is well known from clinical experience that diseases differing widely in their manifestions can be due to one and the same cause, and, in the subject under discussion, experiment has shown that the same inoculation may develop either an erysipelas or a disease of widely different character depending upon, first, the seat of absorption; second, the strength of the virus; and third, the peculiarities of the patient. The influence of the seat of absorption is shown, for example, by its effect on the period of incubation as demonstrated in a series of experiments by Echalier[13] in 1890. He showed "the resemblance of so-called surgical erysipelas to inoculated erysipelas in the short period of incubation [average, thirty hours] while medical, or spontaneous, erysipelas has a much longer period, averaging one week." The effect of variation in the quantity of virus is shown by the experiments of Roger in 1891.[14] A virus, which at first could cause a typical erysipelas, was weakened by re-inoculation, when it served to produce a local abscess only. He states that "the streptococcus experiences no change of growth, but a great diminution of virulence, if one works on the serum of animals who have before suffered erysipelas. After four inoculations the growth of the streptococcus was not stopped, only, instead of erysipelas, a local abscess appeared." The modification of the disease by individual and racial peculiarities is illustrated by a statement of Dr. C. L. Stevens[15] in 1884. He saw in Turkey "many cases of idiopathic erysipelas, asthenic in character, and resembling typhoid fever so common in Oriental cities, though having a more favorable prognosis and a shorter natural history."

If we accept the unity of the bacteria of the several septic processes, we have one explanation of their varying manifestations in variations in form or quantity of the ptomaïnes produced. A. B. Griffiths[16] has discovered in the urine of erysipelas an alkaloid which he names "erysipeline," but he has not determined if the micrococcus of Fehleisen produces the same when grown in tubes of gelatine. The manner in which these ptomaïnes are formed is not yet determined; they may be an excretion of the micrococcus itself, or they may be a decomposition product of the tissues in which it lives. Each cell of the living body is constantly undergoing a process of death and regeneration, during which a toxic substance is formed which becomes harmful to the body if the quantity is created in excess, or the power of elimination checked. This suggests an explanation of the diverse effects of bacteria, in that different tissues may have the property of producing different alkaloids in the presence of the same bacteria. When general infection results from a local disease, the symptoms are those of the particular alkaloid generated. For instance, some act especially on the heart and circulation, while others act principally on respiration.[17] In the case of erysipelas it is affirmed that "as a rule general infection of streptococci is not commonly found. It can be caused by them, however."[18]

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[5] E. L. Partridge: reported in Medical and Surgical Journal, December, [illegible].

[6] Fehleisen, quoted in Medical and Surgical Journal, [illegible]

[7] Fraenkel: [illegible] Bakt., [illegible]

[8] Verneuil and Cado: [illegible] Acad. de Sciences de Paris, [illegible] quoted in Cent. für Bakt., [illegible]

[9] Mosny: La Semaine Médicale, No. 7, [illegible], quoted in Cent. für Bakt. 1890.

[10] Hell, quoted in Cent. für Bakt., [illegible]

[11] Jordan (Heidelberg), quoted in Cent. für Bakt. 1891 and 1892. Reported in Medical and Surgical Journal, vol. cxii., 1887.

[12] I. E. Atkinson: [illegible] American Dermatological Association, Baltimore, [illegible]

[13] Echalier, "[illegible]," quoted in Cent. für Bakt., 1890.

[14] G. H. Roger, "[illegible] streptocoque de l'erysipèle," 1890., quoted in Cent. für Bakt., 1891.

[15] C. L. Stevens, Medical and Surgical Journal, vol. cxi., 1884.

But independently of the proofs of bacteriology, the connection between erysipelas and puerperal fever has long been inferred from their clinical relations. As long ago as 1874 a report by T. C. Minor[19] states that in his investigations "epidemic erysipelas was invariably associated with an outbreak of epidemic puerperal fever, or *vice versa*," and Fiessinger[20] reported in 1889 "an epidemic of puerperal septicæmia of erysipelatous origin." On the other hand, this connection has been strenuously denied, and many instances of non-contagion after exposure quoted in evidence. Kime,[21] in 1888, in a paper entitled "Results of Erysipelas Complicating Pregnancy and Parturition," concludes that there is nothing in common.

The uncertainty of arguing from single cases is evident from the strange coincidences so often seen in the physical world, and in medical matters this is increased by the unconscious bias of the observer. Medical reports are often valueless from the fact that the busy practitioner frequently has neither the time nor the training to make accurate observations, even if unprejudiced in his investigations. It is not sufficient to find *a* cause — it is essential to exclude all other causes to establish the etiology of a case. In some instances an attack of erysipelas is attributed to infection from another case of the same disease, without noting the occurrence of septicæmia before and after in the practice of the reporter, and, *per contra*, a puerperal septicæmia may be traced back to a remote septic origin, while an intervening erysipelas might lead another observer to ascribe it to a different cause.

The number of cases of puerperal erysipelas impartially reported seems very small, and this is due in part to the fact that a typical cutaneous eruption has been considered necessary for the diagnosis. The existence of infection without external signs was claimed by Winckel,[22] in 1886, and the disease called by him "internal puerperal erysipelas"; and in 1890 two cases of acute infectious pneumonia of erysipelatous origin were reported by Mosny, as quoted before.[23]

Winckel reported that he had seen forty-two cases of erysipelas during pregnancy and the puerperal state, six occurring before and thirty-six after delivery. Of the thirty-six puerperal cases, twenty-eight began in the genitalia, two in the breast, and the remaining six in the face and scalp. These cases terminated as follows: In the twenty-eight cases having their origin in the vulva, there were twelve deaths; in the other fourteen there were two deaths. The high death-rate shows the importance of the subject, and the small number of cases recorded leads me to report two cases.

The first is of interest merely as an instance of non-contagion. The patient was a Swede, aged thirty-five, in her fifth pregnancy, all but one of her previous deliveries requiring forceps. I had attended her in October, 1885, for a light attack of facial erysipelas, but did not see her again until the evening of February 13, 1886, when I found her in labor. The case progressed slowly until finally, the pains ceasing entirely, I applied forceps at four o'clock, A. M. of the fourteenth, without ether, and delivered a healthy child of eleven pounds weight, presenting O. L. A. The patient had had a chill the preceding day, and showed a marked erysipelatous blush on the nose at the time of labor. She had high temperature for five days, but no other symptoms, the disease assuming a light form and disappearing in a week. The child was well throughout. In this case there was every opportunity for a conveyance of the contagium to the genital tract, but no general septic infection occurred, and the facial erysipelas ran its course just as in any non-puerperal case.

The second patient was an American, twenty-one years of age, in her first pregnancy. She was of good constitution, of average height and weight, had never had erysipelas, and was perfectly well aside from the ailments incident to pregnancy. Labor began June 1, 1888, and during the forenoon of June 2d she was delivered, without instruments, of a child weighing about eleven pounds. There was a slight, superficial tear of the perineum, exposing perhaps a square inch of raw surface, and not needing a stitch. For two days the case progressed normally, but on the morning of June 4th, forty-eight hours after delivery, I found her with a high temperature and all the discomforts due to fever, but no tenderness or distension of the bowels. Lochia normal. An enema was given and measures adopted to reduce temperature. On a second visit the same day, I found marked redness and swelling of the perineal region, involving the labia on each side, and presenting all the characteristics of cutaneous erysipelas. At the same time the vaginal walls were dry, hot and red as far in as could be readily seen. From this time onward the blush spread, accompanied with great infiltration of the skin and blistering over the nates. At first it spread most rapidly upward, until, on the sixth day of the disease, it had covered the entire abdomen front and back up to the level of the umbilicus, where it ultimately stopped. At the same time it had extended downward on both legs, having by this time reached about the middle of the thighs, and eventually covering the entire surface of both legs to the tips of the toes. From the commencement of the disease to the final disappearance of the redness and swelling, was a period of twenty-three days, during the first two weeks of which the temperature was almost constantly from 103° to 105°. There were no abdominal symptoms at any time, and no evidence of general septic infection. The child was put to the breast soon after its birth, and throughout the disease obtained a moderate amount of milk, which, however, was not sufficient, so that partial feeding was adopted early. This programme was continued until the infant was five months old, when nursing was discontinued, and during all of this time the child was perfectly well, except for a transient diarrhœa caused by the surreptitious administration of oatmeal. The child died fourteen months later of cholera infantum, but the mother has remained perfectly well to this day, having passed through a second pregnancy a year ago, without complications.

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[16] A. B. Griffiths: Compte Rendu de l'Acad. de Sciences.

[17] S. Arloing, 1892, quoted in Cornil.

[18] Pfuhl: Zeitschrift für Hygiene, 1892.

[19] Thos. C. Minor: "Erysipelas and child-bed fever," Cincinnati, 1874.

[20] Fiessinger: "Note sur une epidemie de septicemie puerpérale d'origine erysipelateuse," 1889.

[21] Kime: Transactions Indiana Medical Society, 1888.

[22] Winckel: "Zur Lehre von dem internen puerperalen Erysipel," Verhandl. des deutsch Gesellsch., fur Gynak., vol. i, p. 78, 1886.

[23] Mosny: La Semaine Medicale No. 7, 1890, quoted in Cent. für Bakt., 1890.

This patient presented a typical surgical erysipelas, starting in the perineal wound forty-eight hours after delivery. According to the experiments of Echalier, quoted above, the period of incubation of inoculated erysipelas presents an average of thirty hours, and, as the disease appeared in this case forty-eight hours after the formation of a wound, it is easily explained by direct inoculation. The patient was not catheterized, and my hands had not come in contact with her, except at the time of delivery; so that, if the poison was introduced by the hand of the accoucheur, the incubation period was exceptionally long. To discover, if possible, a source of contagion from a previous case of erysipelas or puerperal fever, I have examined my records for the preceding month, and find that on May 6th I attended a patient through an exceptionally easy confinement, who died May 10th of the most violent form of acute septicæmia — the only fatal case I ever had. From that date up to June 2d I had attended two obstetric cases, a case of fresh scalp wounds, and several cases of boils, bubo, etc., presenting suppurating surfaces, in none of which did any sign of erysipelas or septicæmia appear. During the balance of June, and while attending this case, I had five obstetric cases, two of them instrumental, and two miscarriages, in none of which did any bad symptom occur. One case of erysipelas did occur in a patient with a wound of the nose, who came under my care June 22d, the blush appearing at the wound June 28th, thence spreading over the face, not invading the scalp and disappearing in six days.

In considering the puerperal case we are impressed, in the first place, with the fact that the disease was exceptionally severe, both in extent and acuteness. A report by Manfredi and Traversa[24] emphasizes the fact that "the gravest forms of erysipelas are not those which last the longest with circumscribed areas, but those which present a large surface of invasion, as in traumatic erysipelas." In spite of the acuteness of the disease and the favorable opportunities for absorption, the case progressed exactly as if in a non-puerperal patient. A greater interest attaches to the possible source of infection. Inoculated erysipelas presents a short period of incubation, and, as a rule, shorter in the more violent cases, so that we might assume that the seed was planted about twenty-four hours after delivery. In that case it was probably derived, not from the physician, but from the unscientific handling of the nurse, who had used, I afterwards learned, some soiled cloths to bind upon the patient. Doyen, of Rheims,[25] who maintains the unity of the three streptococci of pus, erysipelas, and puerperal fever, says: "To-day the development of puerperal septicæmia can be put to the account of imprudence or negligence"; and certainly there were abundant opportunities for infection, for in 1888 there was not the scientific use of antiseptics in midwifery that obtains to-day. The occurrence of an extremely violent case of puerperal septicæmia, followed in twenty-three days by an equally violent and exceptional erysipelas suggests a possible connection between the two. The occurrence of nine cases of childbirth and miscarriage during the interval between the two cases and during the progress of the erysipelas, some of them involving extensive digital exploration of the uterus, but resulting in no infection, is evidence of negative value only.

A study of the literature of this subject impresses one with the necessity for, *first*, fuller reports of cases, with special reference to the existence of any septic disease in the practice of the observer at the same time; *second*, further experiment on the duration of the vitality of the micrococcus when conveyed by hands, instruments and clothing; *third*, confirmation of either the specific nature of the streptococcus erysipelatis, or of its identity with the micrococcus of other septic diseases. Clinical as well as bacteriological evidence is needed to establish the practical point of defining the duties of the physician in the way of disinfection, or absolute avoidance of obstetric cases while attending septic patients. Laboratory work is necessarily confined to a few men, but every practitioner can report accurately his cases, and so aid in the solution of this most urgent and important point of practice.

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Clinical Department.

A CASE OF ACUTE SEPTICÆMIA.

BY F. B. HARRINGTON, M.D.

The death of Dr. Charles Pratt Strong is so striking an illustration of the dangers to which physicians are subjected in the course of their professional work, that it seems desirable to make a clinical report of this case. Dr. Strong died of acute septicæmia six days after operating upon a patient with septic peritonitis, probably of appendicular origin. The nature of the disease was not determined until after the death of the patient. The point of entrance of the septic poison is not known, as no wound was discovered anywhere upon the body. The circumstantial evidence is so strong that there can be no doubt that the disease resulted from the operation, notwithstanding all the usual precautions were taken.

On the day following the operation Dr. Strong performed a hard day's work. He mentioned in the afternoon that the left arm felt somewhat sore, but he did not speak of it again in the evening. He had a somewhat restless night, and decided on the following day not to go out to his work. I saw him then for the first time. He complained of some pain in the left pectoral muscle, left shoulder and elbow. The temperature was normal and the pulse 80. There was a loss of appetite and some nausea. In the evening the temperature was 100° and the pulse 90. The patient was drowsy through the day, and slept a good deal. There was a trace of albumen in the urine.

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[24] Manfredi and Traversa: Ann. de l'Inst. Pasteur, 1888.

[25] Doyen (Rheims), [illegible], quoted in [illegible]

On the following morning the temperature was 102° and the pulse was 90. There was some sweating. In the evening the temperature rose to 103° and the pulse to 98. The urine contained a large amount of albumen. The patient still complained of pains in the left arm and back. There was a disinclination to take food. A moderate amount, however, both of food and stimulants, was given.

On the following morning the temperature remained at 103° and the pulse at 98. There was still much inclination to sleep. In the afternoon there was complaint of pain in the right knee and right thigh just above the knee. The temperature remained at 103° and the pulse rose to 108. During the night there was considerable pain in the right knee and thigh.

In the morning there was found to be some fluid in the right knee-joint, and swelling of the lower part of the right thigh. A ham-splint was put on, and the leg suspended. An examination of the urine showed a large trace of albumen, hyaline, granular and fatty casts, but no blood. The temperature had fallen to 101°, while the pulse remained at 108. The patient had been perfectly clear in his mind, and fairly comfortable. In the evening the temperature had dropped to 100°, but the pulse had risen to 120, and was of bad character. The sweating became profuse. The following night was a comfortable one.

In the morning the pulse had risen to 128 and the temperature to 101.8°. During the night the thigh had swollen considerably. The heart's action was feeble, and there was a duskiness about the skin. The respiration, which had remained normal during the entire sickness, rose rapidly during the morning to 50 per minute. On examination, bronchial breathing was detected over the upper lobe of the right lung. The patient sank rapidly and died in the evening, this being the fifth day of his sickness. The thigh in a few hours became dark and greatly swollen, and was covered with bullæ.

The symptoms up to the last twenty-four hours had suggested an attack of *la grippe*, with the usual amount of acute irritation of the kidneys. The condition of the right knee had suggested an acute inflammatory rheumatism. The marked changes in the thigh did not appear until the last few hours. The treatment had been supporting and stimulating. No depressants had been used. The amount of pain was not great, so that opiates were not needed. The patient did not associate his illness with the operation, which was its probable cause. It was subsequently found, on investigation, that, at the close of the operation, Dr. Strong had pricked one of the fingers of the left hand with a needle which was being used in closing the incision.

Several months earlier Dr. Strong had suffered from a synovitis of the left knee, but there had been complete recovery; and no connection could be traced between this and the subsequent illness. There was no evidence of a chronic nephritis.

AUTOPSY.

The preliminary bacteriological examination and autopsy were made by Drs. Councilman and Whitney about twelve hours after death, and the bacteriological cultivations were made by Dr. Stone.

There was lividity of the dependent parts of the body, and the course of the cutaneous veins was marked by dark, dirty bluish-black lines with illy-defined edges. The right thigh above the knee was swollen, dark and discolored, with numerous bullæ containing a dirty-red serum. The lungs contained a large amount of frothy, reddish fluid, but there was no evident consolidation. The muscular substance of the heart and the parenchyma of the liver and kidney were very pale and opaque. The spleen was swollen, pale, and very soft. The other organs presented nothing remarkable. The muscles of the external aspect of the right thigh were dry, infiltrated with blood coloring matter, but there was no evident pus.

Cover-glass preparations gave the character of the bacteria as micrococci, chiefly in long chains (streptococci). Cultures were made from the heart's blood, the liver, kidney, spleen and subcutaneous tissue of the thigh. From all of these there was obtained a pure culture of streptococci. These grew in long chains in bouillon and on agar. In the former they made the fluid cloudy for twenty-four hours and then settled as a white precipitate. In gelatine they grew along the needle track in small isolated colonies. They grew also in milk, but did not coagulate it. On blood serum the bacteria formed small white colonies, at first almost like drops of water on the surface. They developed rapidly in the thermostat at 37° C., more slowly at the ordinary temperature of the room.

The sections of the muscles of the thigh showed that all the intermuscular spaces were distended by a mass of bacteria, there was no infiltration of leucocytes into the tissues, though the blood-vessels seemed to contain an unusually large number of white blood-corpuscles. In sections of the kidney the bacteria were demonstrated with considerable difficulty, in spite of the fact that the amount of kidney substance that one could pick up with a small wire loop gave over one hundred colonies when planted. When found, the cocci were in the intercellular spaces. Neither in the kidney nor in the muscular tissue was there any suggestion of arrangement of the cocci in chains. This was to be seen only when cultivated outside of the body.

The case is one of true septicæmia following a local streptococcus affection, the original point of infection not being evident.

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Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

EIGHTH ANNUAL MEETING, AT WASHINGTON, D. C.,
MAY 30, 31 AND JUNE 1, 1893.

(Continued from No. 6, p. 146.)

ON THE REACTION OF URINE WITH ETHER,

by **Dr. Andrew H. Smith**, New York.

Ether, when very thoroughly agitated with normal urine, gives rise, in most specimens, to the separation of a gelatinous opalescent substance, which may be so dense as to permit the test tube to be reversed without losing its contents. The urine may or may not be acid. Certain other specimens of normal urine will not yield this result unless an acid be added. These specimens may or may not have been acid originally.

A third very small class of specimens of normal urine will not yield the reaction even on the addition of acid. The substance thus obtained responds to the tests for proteids. It is obtained after all mucin has been removed from the urine. It therefore may be considered an albuminoid substance. It seems to be most abundant in the urine of persons having a vigorous appetite and a good digestion. It is scanty or absent when the subject is on restricted diet, or when digestion is feeble; also in the case of young children. The inference is, therefore, that it represents an excess of nutritive proteids taken into the blood and thrown out by the kidneys. It is found in albuminuria after the albumen has been removed from the urine by boiling. It is not found in the washings of albumen thus removed; but if an acid be added to the albumen on the filter, the washings at once give the reaction with ether.

It is possible that some of the cases in which anuria follows prolonged etherization, may be explained by the formation of this gelatinous substance in the tubercles of the kidneys, thus mechanically obstructing the excretion of the urine.

PROBABLE ORIGIN AND EARLY SYMPTOMS OF CERTAIN CHRONIC DISEASES OF THE KIDNEYS.

by Charles S. Bond, Richmond, Ind.

Chronic diseases of the kidney with definitely known origin, such as diphtheria, scarlet fever, pregnancy, etc., were not considered in the paper. It was the author's endeavor to ascertain the ultimate cause or causes of those chronic changes found under the ambiguous head of chronic Bright's disease.

The diffuse character of the lesions in the different tissues of the kidney, as seen post mortem, lead us to the view that the irritant or irritants producing these lesions are presented to these various tissues in more or less constant quantities through the blood current. The remote lesions in the arteries of the head, trunk and extremities exemplify the existence of a common origin. In the living subject the wide distribution and general character of the changes are abundantly illustrated by such conditions as hypertrophy of the left ventricle, with or without lesions of the mitral valves, accompanied by hard, resistant pulse, congested mucous membranes, dyspnœa, headache, œdemas, tendency to inflammations of serous membranes, etc. There are many symptoms pointing to the existence of the general lesions long before albumen and casts appear in the urine.

Kidney inflammation is doubtless due to irritants found in the blood. Uric acid may be put in the list as an occasional cause of Bright's disease. Gout is sometimes intimately associated with Bright's disease, and this association proves the potency of uric acid as an irritant. Uræmia is intimately associated with the retention of nitrogenous products. In the early stage of Bright's disease the average daily quantity of nitrogenous products excreted is very much diminished. It is probable that retained nitrogenous products are causative agents in the production of Bright's disease. A great number of chemical compounds may result from the many different foods under varying conditions of digestion in the stomach and bowels. Vicious unions are often formed that not only irritate the walls of the stomach and bowels but also pass into the general circulation and cause more or less continuous irritation to the various tissues of the body. The ptomaines produced in the alimentary canal under certain conditions are probably carried into the blood and act as irritants. Leucomaines formed in the body under some circumstances may primarily or secondarily irritate the excreting organs.

The causes that primarily produce the irritants, secondarily causing that long train of pathological changes so indissolubly associated with Bright's disease, are those agents that disturb the metabolism of the cells of the body, causing them to run down outside of their lines of normal cleavage in their life manifestations, and thereby producing an excess or diminution of products, normal and abnormal, to the blood. In this metamorphosis no doubt many products will yet be found that are not now known to bear any relation to these lesions, and many others are now found in the urine which will be demonstrated to be due to cell disturbances in the otherwise diseased kidney that are abnormal expressions of such cells and that have nothing in common with the original causes of the vessel and kidney lesions.

A STUDY OF ADDISON'S DISEASE AND OF THE ADRENALS.

by W. Gilman Thompson, New York.

The author's research was undertaken with a view of formulating such conclusions in regard to the etiology and symptomatology of Addison's disease as the still limited knowledge of the subject justifies. His personal experience includes three cases with autopsies. To these are added three more from the statistics of the New York and Presbyterian Hospitals. In addition he has collected unreported records of 40 autopsies in which lesions of the adrenals have been noted but without accompanying symptoms of Addison's disease. His conclusions are drawn from the total of 757 cases recorded by many different observers. Autopsies were made in nearly all.

We are obliged to abandon the earlier theory that Addison's disease is absolutely dependent upon adrenal lesion, in view of the fact that many typical cases have lately been observed with well marked bronzing in which the adrenal bodies were entirely normal. Among Lewin's histories, twelve per cent. were of this type. Virchow describes a typical case, with pigmentation, in which the microscopic examination of both the adrenals and sympathetic system presented nothing abnormal. Moreover, it is absolutely established that every variety of adrenal lesion which has ever been found associated with Addison's disease has also occurred without giving rise to any symptoms whatever. A most instructive case is related by Jürgens, where the pressure of a large aneurism caused atrophy and degeneration of the left splanchnic nerve, with typical bronzing and other symptoms of Addison's disease, whereas the adrenals remained normal.

The conclusions which the study of these cases seems to justify are: (1) That Addison's disease is a condition arising from and dependent upon irritation of the abdominal sympathetic nerves through lesions of themselves, their ganglia, or diseased suprarenal capsules. (2) In the great majority of instances (fully eighty per cent.) the disease originates as a secondary or primary tuberculosis of the adrenals, and the sympathetic system is either involved by extension of the pathological process or is mechanically disturbed and irritated through the intimate anatomical connection existing between the adrenals and the relatively large number of nerves which they contain. (3) A small sion of the sympathetic system, which is far more common than heretofore supposed, is not necessary to produce the varied symptomatic phenomena of the disease. Functional disorder through irritation conveyed from the adrenals may sometimes cause all the symptoms, just as in chorea and many of the conditions of aggravated hysteria and other functional nervous disorders, we are often unable to find definite lesions. (4) In a certain proportion of cases (not over twenty per cent.) the adrenals are affected by some other lesions than those of tuberculosis, or else they remain normal (in twelve per cent.) and the sympathetic nerves and ganglia are alone diseased. Dr. Thompson then gave the results of his inoculation and other experiments upon the adrenals, which he has been carrying on at the Loomis Laboratory in the past four months.

Dr. Welch, of Baltimore, did not think it possible to draw any other conclusion than had been drawn by Dr. Thompson from his record of cases. He had seen six cases of Addison's disease, all associated with the characteristic tuberculous lesion of the adrenals; and in two of these tubercle bacilli were found, but only after a long search. In these cases the tuberculous lesions had an unusual localization. In one case there was tubercular deposit in the bodies of nearly all of the vertebræ. In another case there were tuberculous lesions in the mesenteric glands and in the genital tract, but nowhere else in the body. Tuberculous lesions associated with Addison's disease are often peculiar in localization. A few months ago a negro came to autopsy at the Johns Hopkins Hospital, and tuberculous disease of both of his adrenals was found. There had been no suspicion of the existence of Addison's disease. The mucous membranes were carefully examined, and abundant dark pigmentation of the mucous membrane of the gums and of the side and back of the tongue was found. The mucous membrane of the gums and of the tongue of the negro was very often pigmented in health, much more frequently than in white people. It was an interesting question as to how a diagnosis was to be made in the negro.

Dr. J. T. Whittaker, of Cincinnati, had seen two cases of Addison's disease in the past five years, both of which had shown caseous masses in the adrenals, and one evidence of tuberculosis elsewhere. The diagnosis was established by the digestive and nervous symptoms and discoloration of the skin. The discoloration of the skin occurs, not as an abnormal deposit, but as a physiological plus, and over-accumulation of pigment in places where pigment usually occurs, as in the linea alba, nipples, scrotum and axillary region. He was surprised to learn that in so large a proportion of cases the pigmentation was not due to disease of the adrenals. Brown-Séquard's theory, recently revived, is that it is the function of the supra-renal capsules to remove the pigment from the body, and disease of these supra-renal glands destroys this power and hence the pigment accumulates. It was a comfort to believe that the disease was caused by tuberculosis; for if it were a pure tuberculosis, it might be amenable to some relief.

Dr. Thompson desired to emphasize the interest that attaches to careful examination of the abdominal sympathetic nerves and ganglia in cases of Addison's disease, and urged those who had opportunities to make pathological examinations not to overlook this point.

TWO CASES OF CYSTIN CALCULUS,

by **James Tyson, M.D.**

Case I was a young man of twenty-three years, who first consulted Dr. Tyson in September, 1888. A few days previous had had severe pain in the left flank. Examination of the urine showed the presence of a copious flocculent sediment composed entirely of tablets of cystin. He has had pains in the left flank at intervals ever since, and has passed numerous small calculi, all composed of pure cystin. Repeated examinations of the urine have always shown the presence of cystin. Patient has been upon aromatic spirits of ammonia and citrate of potash; but even while the urine gave an alkaline reaction, cystin was found to be present. The calculi passed most recently have been perfectly smooth, as contrasted with the former ones which were rough, and look as though they had been reduced in size by the action of some solvent substance.

Case II was a practising physician, aged forty-five, who came under observation in January, 1879. At eight years of age he was lithotomized and a calculus of pure cystin removed. He continued to pass cystin daily through life. Had had numerous attacks of nephritic colic. He died March 6, 1879. A calculus was found in the left ureter just ready to pass into the bladder. It was large as a pea and roughly granular. Behind the calculus and outside of the ureter was a collection of pus dipping down into the pelvis. A single large calculus was found in the gall-bladder, occupying its entire extent. One kidney was much reduced in size, but both were reported as normal.

Dr. Whittaker asked Dr. Tyson concerning the origin of cystin.

Dr. Tyson replied that it was not known.

Dr. Whittaker called attention to some very fine observations by Brieger in regard to cystin. Brieger derives it as a ptomaine from the alimentary canal, and finds it always in combination with diamine. He assumes it to be found only in connection with infectious diseases. In Dr. Tyson's cases the occurrence of cystin in the urine is a life-long condition; and that is, of course, incompatible with the view that it occurs only in the course of any ordinary infectious disease.

(To be continued.)

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BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

Regular meeting, Monday, April 24, 1893, the President, **Dr. C. F. Folsom**, in the chair.

Dr. H. Jackson read a paper on

COMPLICATIONS OF SCARLET FEVER AS OBSERVED IN FIFTY CASES.[1]

Dr. F. H. Williams: I am very much interested in this subject, but I find myself a little embarrassed because I expect to read a paper which will cover part of the same ground, so that there will hardly be time for me to say all that I would like to on the subject under discussion. As regards the eruption and the membrane in the throat, as a rule, I think the eruption and the throat symptoms will be found together. Sometimes the signs in the throat will come first. Of course, as the cases come into the hospital, it is hard to know how long they have had the throat symptoms. I have here a list of between thirty and forty cases with throat symptoms; and among them there are three where the eruption came on from four to seven days after the throat symptoms, but that seems to be unusual.

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[1] See page 162 of the Journal.

As to the question of whether the throat symptoms influence the prognosis in any way, if I understand Dr. Jackson rightly, he thinks that the cases with severe throat symptoms have about the same mortality as the ordinary cases of scarlet fever. This was not the case in the patients whom I have followed. To my mind the membrane in the throat in scarlet fever makes the prognosis very much worse. I think it is one of the most serious signs that one finds in a case of scarlet fever. There are few things I think of in the early stages of scarlet fever that would incline one to give so bad a prognosis.

As regards the symptoms in the ear, I rather expected, in looking over a number of cases, that one would find otitis media where the throat symptoms were very severe; but in two hundred cases there does not seem to be a marked difference between those with severe throats in these cases and the ordinary cases of scarlet fever, that is, I found about as large a percentage of patients who suffered from trouble in the ear in one set of cases as in the other, but I think it would take a large number of cases to determine a point like this. It seems to me that scarlet fever is a disease in which one needs to have a large series of cases in order to get any statistics. For example, Murchison and others have made some observations about scarlet fever, and find the mortality from three per cent. to ten per cent., or fifteen per cent. to twenty per cent., or even to thirty-four per cent., in different epidemics; also in different seasons of the year the mortality varies very markedly, and I think that during certain seasons of the year one would be more apt to find cases of scarlet fever having membrane in the throat than at other seasons.

Dr. Ayer: I feel that papers like Dr. Jackson's are of the greatest clinical value. I remember seven or eight years ago to have collected a series of cases. There were ten, if I remember rightly, of the twenty-three where the membrane was the most important of all the symptoms; and in one the membrane appeared upon the throat before the rash appeared upon the skin. It has always seemed to me that the throat symptoms were of the greatest possible importance in the prognosis of a case. Most all of the fatal cases I have seen have died with severe anginous symptoms. Those cases used to be called cases of scarlet fever with diphtheritic throat. I think the explanation Dr. Jackson has given is the correct one.

Dr. Jackson, replying to a question by Dr. Cobb, stated that post-nasal examination had not been made, as all the cases were too young and too sick to make such examination possible. Diuretics he had not given as a routine practice, but patients were kept in bed until the abundant desquamation had ceased. They were kept on milk diet during active desquamation. In regard to the prognosis, about eight of the eleven fatal cases had severe throat [illegible] [illegible] [illegible] presented a widespread membrane, with extension into the nose from the beginning. It seemed to be a furious process from the beginning. He should regard membrane in the throat as a serious complication, but should feel that a limited membrane on a part of the pharynx was not of such serious import. The cases that did badly looked very sick from the very beginning. Any one at a glance could tell that they were in an extremely low septic condition, and of those cases only one got well. The treatment of all was the same.

Dr. Councilman: I should like to ask what clinicians generally think about the nephritis, if they think there is any probability that it may be due to an accidental infection, to a secondary infection from the throat or the lungs in cases of scarlet fever, or whether they regard it as essentially a part of the scarlet fever process and not coming from the mixed infection.

Dr. Jackson: I should think that was rather a question for the pathologist than the clinician. In my student days we were taught that cold was the essential factor, that great care must be taken against cold to prevent nephritis. It seems to me now such views must be thrown out, and the nephritis must be considered as a septic nephritis — I mean as an infective process, not as a part of the scarlet fever. As it developed in the cases in the hospital, there was absolutely no apparent cause. All the cases were treated alike. All were kept in bed for a varying length of time until the active desquamation had ceased, and all kept on a mild diet. The ward is as free from draughts as a ward can be. The temperature is cool night and day. The average temperature was 67° or 68°, so that in the cases as observed there the nephritis could not be ascribed to any such cause as catching cold or improper diet. But it was not especially prominent in the septic cases. The septic cases which died had an acute nephritis, but that was not a clinically recognized process during life.

Dr. Clark: I should like to ask if Dr. Jackson has any theory as to the connection of the membrane in the throat with the scarlet fever process, whether it is simply a complication.

Dr. Jackson: Certain observers have suggested, that the membrane being due apparently to a streptococcus, that the streptococcus might be the cause of the scarlet fever. These throat cases are considered either as the result of a toxine or as a secondary streptococcus infection. Booker is the only writer, so far as I know, who has made extended observations as to the characteristics of the streptococcus; and in all the streptococci which he cultivated from the throats of scarlet fever patients he found the same characteristic, that they were of very short vitality on nutrient media, thus offering quite a contrast to the ordinary streptococcus.

A Bit of Official Wisdom. The following paragraph is copied verbatim from a board of health report of a town not a dozen miles from Suffolk County. The lucid advice, as well as the English of this intelligent health official, are both worthy of notice:

"Every person who is confined in a house owing to sickness and contagious diseases, should at all times be thoroughly covered with disinfectants, both externally and internally to insure safety to themselves and to others, as in my mind a spread of the same is caused by carelessness on the part of people who know it all, and cannot be told by persons of experience."

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LEGISLATION RELATING TO MEDICAL MATTERS IN MASSACHUSETTS.

THE State legislature of 1893 has not passed many laws of direct interest to practitioners; but a few bearing on medical matters will be of interest, especially to medical men of Massachusetts.[1]

The law providing for the registration of deaths by physicians, in connection with the obtaining of a burial permit by undertakers, has been amended so that in cases of still-born children and those dying immediately after delivery, the same form is required as in other deaths, and a penalty is provided for making false statements. The law now reads as follows: "A physician who has attended a person during his last illness shall, when requested, forthwith furnish for registration, a certificate stating, to the best of his knowledge and belief, the name of the deceased, his age, the disease of which he died, the duration of his last sickness and the date of his decease; and a physician who has attended at the birth of a child dying immediately thereafter, or at the birth of a still-born child, shall, when requested, forthwith furnish for registration, a certificate stating to the best of his knowledge and belief, the fact that such a child died after birth, or was born dead. If a physician neglects or refuses to make a certificate as aforesaid, or makes a false statement therein, he shall be punished by a fine not exceeding fifty dollars."

A law regulating so-called sweat-shops provides that all places used as dwellings in which garments are made, intended for sale, shall be licensed and superintended by the police, or special inspectors, and that in cases of danger from infectious diseases or vermin, the State Board of Health shall take charge and control. Also that all garments made in such places shall bear tags, with the name of the State and town in which they were made.

Local boards of health are required to notify the State Board of the existence in their districts of any disease dangerous to the public health.

A law to abate the smoke nuisance in Boston provides that where bituminous coal is used to make steam in boilers, at least seventy-five per cent. of the smoke must be consumed or prevented from entering the atmosphere.

The State Board of Health is directed to investigate the question of a water-supply for Boston and neighboring towns, and to report in January, 1895.

The same board with the park commissioners shall investigate the sanitary condition of the Charles River Basin up to the Waltham line.

The members of the State Board of Cattle Commissioners are given power to enforce rules for the prevention of disease among animals.

Hereafter plumbers must be licensed, and must pass an examination. The examining boards consist of the chairman of the local board of health and the inspector of buildings. It will be no longer possible for any ignoramus to practise plumbing, but the practice of medicine is still unrestricted.

ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

THE report shows more than ever before the lack of accommodation for the constantly increasing demands made upon the hospital, but it shows a better outlook for the future; appropriations have been secured which, although insufficient for its needs, have made it possible to plan and begin the construction of new buildings. The trustees, with the assistance of the superintendent, have been for many months at work upon plans for a new hospital for contagious diseases. For the purpose of carrying out this work, $271,000 were placed at the disposal of the trustees, for the construction of new buildings; $24,000 were set apart for the construction of a new ambulance stable, and contracts were made for the buildings constituting the Chester-Park Hospital, costing $203,000. The work has progressed during the winter months as rapidly as the weather would permit. Piles and foundations have been laid for a lodge, administration building, domestic building, and one two-story ward. These buildings will be pushed as rapidly as possible during the coming season. Other buildings and alterations await further appropriation.

During the year which ended February 1, 7,512 patients were admitted, of whom 3,572 were medical, 3,152 surgical, and 788 contagious. The average number in the hospital at one time was 433, and the largest 515. The average number of days' stay was 19.24; 387 patients were treated in the Convalescent Home and 14,485 in the Out-Patient Department. The Contagious Service has been extremely active, a larger number of patients having been admitted than during any previous year. This is the first year during the six years the contagious wards have been occupied that any patients having a claim have been refused admission for want of room. The creation of the Contagious Service, and the isolation of both physicians, nurses and others who do duty in the contagious wards, which measure was thoroughly insisted upon last year, has been found to work greatly to the advantage of the hospital.

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[1] A similar summary for 1892 will be found on page 95 of the Journal of July 28, 1892.

During the year a temporary pathological laboratory has been organized, and with the clinical laboratory formerly in use, good scientific work can now be done. Special investigations have been carried on in the diphtheria and scarlet-fever wards, and all patients admitted with diphtheria or suspected diphtheria have been subjected to the test of the pathological laboratory, to ensure diagnosis.

The report of the trustees on the question of establishing branch hospitals has already been noticed.[1] On the question of gratuitous treatment they say:

"Investigation of the claims of various patients in the ward beds has shown the fact that many patients have very properly declared their reluctance to be supported as charity patients, and when their attention has been called to the matter, have seemed very willing to pay for their own board, and have done so. It is the opinion of the trustees that this system of voluntary payment should be still further extended, and that patients, as far as is justifiable in each case, should pay something for their treatment in a hospital ward. The tendency of the times is to this result in other hospitals, both private and municipal. The contrast between American hospitals and foreign hospitals in this respect is largely in favor of the former. In foreign hospitals, not excepting those of England, the general sentiment among patients is that they ought to be gratuitously provided for, while the tendency among the occupants of American hospitals is a great willingness to pay, due to a feeling of independence, and a dislike of becoming objects of charity. It has been generally recognized that the first charit a person in straitened circumstances is ready and willing to receive is medical charity. The first step is thus taken towards pauperism. As a social problem, the trustees believe that it is their duty, as far as possible, to prevent this first step, and to oppose every tendency to pauperism. They therefore deem it their duty to continue the present system of investigation, and whenever it is not a hardship to contribute, to counsel and encourage patients to be wholly or, at least, partly self-supporting. The trustees also think that patients who are able to pay, should meet the actual cost of their support, $10 a week."

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ON THE CONTAGIOUSNESS AND INOCULABILITY OF CANCER.

Simon Duplay and Maurice Cazin have recently published an exhaustive study of the above interesting subject,[1] in which they sum up about all that is known respecting the transmissibility of cancer.

They consider the question of the parasitic nature of cancer as still "without sufficient facts to support it."

In regard to the subject of contagiousness, they affirm that of all the modes of transmission of cancer, there is only one respecting which everybody is agreed, namely, that which consists in what may be called auto-inoculability. Numerous cases, of unquestioned authenticity, are on record, where a patient already the subject of cancer, has been inoculated in some sound part of the body with fragments of the same cancer. Cornil reports or rather vouches for two cases of cancer transplanted from one part of the body to another on the same patient,[2] and Hahn has had a similar success in a patient under his care.[3] Roger Williams reports similar cases in the *Lancet*, September 12, 1891.

The case is clearly different when a cancerous fragment is grafted upon some part of the body of a healthy individual or animal, having no predisposition to malignant growths. In the immense majority of cases, no result follows the transplantation. Duplay and Cazin give the particulars of eighteen experiments[4] on healthy animals (dogs and rats), in which the transplantation of cancerous tissue produced nothing but local reactional lesions followed by resorption of the grafted fragments.

Their experiments made to test the direct transmission in the same species now number fifty-four, and they make the declaration that whatever may have been the procedure employed, all their results have been negative whenever they had to do with tumors clearly cancerous. The only positive results which they have obtained concern tumors having no epithelial character, but presenting an evident character of persistence and tendency to indefinite growth; as to the nature of this class of tumors they are not yet ready to pronounce.

These writers conclude that direct transmission must be absolutely exceptional, and they add, what, in fact, is commonly admitted, "that the essential condition of development of malignant neoplasms must consist in a special predisposition, certainly hereditary, which we cannot at present define."

The comparison of cancer to tubercle so often made from the point of view of parasitic origin and contagiousness, is no longer justifiable, for (to quote the words of the writers above mentioned) "when in our laboratories we inoculate guinea pigs or hares with tuberculous products, the inoculation produces its effects with certainty; but when we inoculate cancer in the same conditions, as a general rule we obtain absolutely no result whatever."

The authors conclude that "while nothing at the present time warrants us in believing in the direct contagiousness of cancer, we are none the less convinced of its infectious nature, dependent on a process of which we are still completely ignorant. . . . There does not yet exist any precise notion as to the origin and modes of transmission of malignant neoplasms, and if it be proved that cancer has, in a few rare instances, been transmitted experimentally to animals, it is none the less evident that we have no right to speak of cancerous patients as if they were possible sources of contagion."

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[1] [illegible]

[1] See [illegible]

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[2] [illegible]

[3] [illegible]

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MEDICAL NOTES.

The Cartwright Prize. — The Cartwright Prize of five hundred dollars established by the alumni of the College of Physicians and Surgeons of New York has been awarded to Dr. W. A. Holden, of New York, for an essay entitled, "An Outline of the Embryology of the Eye."

Medical Candidates in Japan. — At the last government examination in Japan for license to practise medicine and surgery four thousand two hundred and seventy candidates presented themselves!

Insufficient Nursing. — At a recent coroner's inquiry in London, several instances of totally inadequate nursing force were brought to light. A patient having committed suicide by leaping from a window, the nurse testified that she had two wards, containing sixty-three patients, to attend to during the night. It would take her two or three minutes to get from the end of one ward, across the corridor, to the end of the other ward. She was on duty for twelve hours at a time. This experience of an insufficient night staff is said to be not uncommon. In some of the largest and most modern of provincial Poor-law infirmaries one nurse has charge of four wards, situated in separate blocks and containing acute and dying cases.

The Cholera. — During the past week the cholera has increased to a very great extent in Russia. Podolia still continues to furnish the largest figures, there being about five hundred new cases each week, with a hundred deaths. In the other districts there has also been an increase in the number of cases, and several sporadic cases have occurred in St. Petersburg. In Austria, and especially in Roumania, the condition is considered more serious than it was last year. In Naples, the official reports record a daily average of five to ten cases and three or four deaths. Other telegraphic reports, which the government has not succeeded in suppressing, give the daily average of deaths as thirty. In New York there have been two deaths from cholera at quarantine. Both occurred in passengers of the steamer *Karamania*, which left Naples July 22d. Several other cases have occurred, but the patients are doing well. Three patients had died during the passage.

Yellow Fever. — On July 22d a vessel arrived at Pensacola from Cuba, with two sailors ill. On the 28th they were removed to the quarantine hospital, as having yellow fever. On August 9th, two deaths from yellow fever occurred, an adult and a child, without any suspicious cases being previously reported. Both cases were in the northern portion of the city, one mile from the water front, and separated about five blocks. It was impossible to trace the source of the fever. A panic at once ensued, and the people began to leave the city in large numbers; and all the cities and towns as far as Mobile and Birmingham declared an absolute quarantine against Pensacola. No new cases have occurred yet.

The Naval Laboratory. — Under an order from the Navy Department the United States Naval Laboratory at New York is to be known as the United States Naval Laboratory and Department of Instruction. Assistant Surgeons immediately after admission to the Navy are to be ordered to the Naval Laboratory and Department of Instruction, for such study and instruction, under prescribed rules and regulations, as may be necessary to familiarize them with the duties of medical officers afloat and on shore. In addition to the instruction in strictly naval medicine they are to have teaching in sanitary science and bacteriology. The course is to cover at least three months.

NEW ENGLAND.

A Novel Dedication of a Crematory. — A brick crematory for private use has just been finished at Leominster. It is circular in form, about ten feet in diameter on the inside, has a chimney forty feet high. The building will be dedicated by a clambake, the bivalves to be cooked in the crematory oven.

A Case of Gross Carelessness. — The deaths of two children from scarlet-fever in Woburn last week has led to the disclosure of a bit of criminal carelessness on some one's part. Two weeks ago a barrel containing a feather bed was dumped on a vacant lot. The next day a number of children played upon the bed and scattered the feathers over each other. Within the week five of these children were taken sick with scarlet fever, three of them being children of one family, two of whom have died, while the third is not expected to live. The other two children are recovering, having had the malady only in mild form. After the children were taken sick some one burned the bed.

NEW YORK.

Mortality. — The weekly report of Dr. Nagle, Register of Records, shows a very gratifying decrease in the number of deaths in the city during the week ending August 5th. The number reported was 829, a decrease of 255 compared with the preceding week, and 140 less than the average of the corresponding weeks for the past five years. This represents an annual death-rate of only 22.70 per thousand of the estimated population, and is a remarkably good showing for the season of the year.

Cholera Quarantine Against Canada. — In view of the introduction of cholera into the port of New York by the steamer *Karamania*, a conference of the heads of the different city departments was held August 6th, at the request of the mayor, in reference to the sanitary condition of the city and the precautions necessary for protection against cholera. Among the subjects discussed was the danger of the importation of disease through immigrants by way of Canada, and a resolution was passed requesting the City Board of Health to urge the State Board of Health to exert every effort to secure a careful system of inspection and quarantine at the points of entry on the State's northern boundary. At a meeting of the Board held August 9th, a resolution to the above effect was adopted. The members of the Board are confident that everything will be done to prevent cholera from passing quarantine, and the purpose of the resolution is to urge the State Board of Health to co-operate in the most efficient manner with the Marine-Hospital Service to prevent its entrance through the Canadian border.

The National Quarantine Committee of the New York Academy of Medicine has concluded its work in drafting a national quarantine law designed to protect American ports from the invasion of disease. The law which it proposes divides the United States into eleven sanitary districts and provides for a National Bureau of Public Health with fifteen members, eleven of whom shall be appointed by the President, with the consent of the Senate, one to come from each of the sanitary districts, and to be known as the Medical Commission. The other four members are to be ex-officio, the Surgeon-General of the Army, the Surgeon-General of the Navy, the Supervising Surgeon-General of the Marine-Hospital Service, and a law officer detailed by the Attorney-General from the Department of Justice. The powers of the Commission are defined and the law provides that they may, at their discretion, invite representatives of State Boards of Health to confer with them.

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Miscellany.

MILK SUPPLY OF CITIES.

In an editorial upon the milk-supply of cities the New York *Medical Journal* says:

"It is true that great improvement has been effected during the last ten years in the management of cows, in the care of the milk at the farms, and in transporting it to the city, but much still remains to be done. Certain vital points have until recently been overlooked. In Boston, under the supervision of Dr. Rotch, milk produced at farms under close medical supervision can be obtained. He has established the most complete and perfect laboratory in the world. Physicians, by simply writing a prescription stating the percentage of fat, casein, and sugar desired for any special case, can have it delivered daily in the form of absolutely pure, clean milk, the exact proportions of the various constituents having been determined with mathematical exactness. Such laboratories will no doubt soon be established in other cities, and will prove of incalculable aid in feeding infants and delicate children. In New York a few milk companies are selling a comparatively clean milk obtained from farms where close attention is given to the housing and care of the animals and to the transportation of the milk. In most of these a few important points as regards the personal care of the animals and cleanliness in milking have been overlooked. . . . Bad methods result in part from ignorance and in part from carelessness. A few properly conducted daries would do much to teach the average dairyman proper methods, while the increase of sales and higher price obtained would stimulate him much more."

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GROWING PAINS.

The old-fashioned growing pains have at last received scientific recognition from a German. They have long been mentioned by English and French writers as representing a certain complexus of symptoms occurring during the period of rapid physical growth. German writers have been very loth to recognize this condition as having any characteristic existence. In this position they were doubtless right, for to a great degree "growing pains" has been a diagnosis of convenience or mental perplexity. The greater number of these cases, which have now been studied by Karewski, of Berlin, will be found, if carefully examined, to be due to certain definite and discoverable causes not connected with the process of growth.

In the first place he points out that, as a rule, the pains are not seated in the bones but about the muscles, and are quite similar to those of slight apyretic attacks of rheumatism. All such cases should be referred to their proper cause.

There are, however, a certain number of cases in which there is a mild increase of temperature and more or less dull aching pain about the long bones. It is found that these occur in children who have been growing tall at an undue rate. Karewski thinks it possible that the active bodily exercise at this period of life has given irritation in some way to the epiphyseal lines of the long bones which naturally results in rapid proliferation and growth. When this condition is too marked, there is a mild inflammatory action, with pain and abnormally rapid growth. Consequently, he concludes that children have pain and fever not because they are growing too fast, but that they are growing too rapidly because they are really ill.

He apparently takes no notice of the frequent onset of these pains shortly before school-time, and their relation to pleasurable or dutiful exertions. In America, certainly, this factor plays some part in the cause of "growing pains."

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ERYSIPELAS AND CANCER.

The experiments which have been in progress for some time at the New York Hospital in reference to the cure of cancer — sarcoma, as well as ordinary carcinoma — have now proved so successful that Dr. W. B. Coley, of that institution, has prepared a report of them which is likely to prove of permanent value to the profession. The discovery of the fact that the accidental inoculation of a cancer patient with erysipelas was followed by marked improvement in the cancerous condition suggested to Dr. W. T. Bull the advisability of inoculating other patients with the erysipelatous virus. Accordingly, a number of cases were set apart, and experiments were carried out upon them by Dr. Coley, under the direction of Dr. Bull. For the inoculations a pure culture of the streptococcus of erysipelas was used, and it was found that about twenty-five per cent. of the cases of carcinoma were cured, while in those of sarcoma the percentage of cures was as high as 40. In order to prove that the benefit thus noted was not due merely to local reaction, the inoculations were made in some instances at a distance from the cancerous tumor. As a rule, however, the injections were made directly into the tumor, and they were repeated every forty-eight hours. The reaction produced was similar to that of genuine erysipelas, though generally much milder in degree and passing away in from twenty-four to forty-eight hours.

In his report, Dr. Coley arrives at the following conclusions: First, that the curative effect of erysipelas upon malignant tumors is an established fact. Second, the action upon sarcoma is invariably more powerful than upon carcinoma in about the ratio of three to one; third, the treatment of inoperable malignant tumors by repeated inoculations of erysipelas is both practicable and not attended with great risk; fourth, the curative action is systemic, and probably due chiefly to the toxic products of the streptococcus; and, fifth, that the method of inoculation should not be employed indiscriminately until further clinical experiments have proved its limitations.

◆

QUININE BLINDNESS.

Among the more serious and distressing effects of quinine upon persons over-susceptible to its administration that of blindness is not uncommon. Its onset may be sudden or gradual and not particularly influenced by the amount of quinine administered. To a physician not remembering this possibility the sudden occurrence of this symptom may be a source of considerable perplexity. So far there have been about sixty cases reported since 1841; and Pischl gives an interesting summary of them in connection with the report of a case of his own:[1]

"The blindness is usually absolute; in some there was only amblyopia of varying degrees. The blindness generally sets in suddenly, 'as though you had turned out the gas;' in many cases, however, vision fails gradually, so that it takes a few days before blindness is total. The duration of total blindness, the absence of all perception of light, varies within wide limits — from a few hours or a day or more to several weeks. In one case it lasted three months. In all cases sight was restored, though slowly, and nearly always imperfectly. Central vision returns first; the color-sense is restored later. In some cases the diminution of the sense of light is permanent. The field of vision, which is extremely contracted, enlarges slowly and probably does not wholly regain its normal extent."

Other symptoms noticed were strabismus and nystagmus. The pupil is generally dilated, irresponsive to light, though reacting somewhat to accommodation. The retinal vessels were diminished in calibre, and the optic discs very pale — a condition quite similar to that found in experiments upon dogs, which is best explained by supposing the effect of the quinine upon the vasomotor centre to result in constriction of the calibre of the vessels, and thrombosis. That the drug has some direct action upon the vessel-walls causing an endovasculitis is not impossible.

Pischl's own case, as fairly typical, is of interest. The patient, a man of forty, had been given some five-grain quinine powders for a malarial attack. After taking three powders at intervals of three hours, he began to have aural symptoms; but continued to take the powders for three doses more. The next morning he woke totally blind. Examination of the eyes gave these results:

"Both eyes, viewed externally, appeared normal. The pupils were motionless to light, but reacted slightly to accommodation. Central vision: R. E., = $\frac{6}{6}$: L. E., $\frac{6}{9}$. With + 5 D. he read $\frac{15}{25}$ and $\frac{60}{130}$, but saw only one word at a time. The field of vision was contracted to five degrees. The ophthalmoscopic examination revealed pale optic discs with ill-defined borders, and blood-vessels about one-third the normal size." Treatment consisted of subcutaneous administration of strychnine and the use of the constant current to the eyes for fifteen minutes daily. A month after treatment was begun the field of vision for white was nearly normal, but the field for colors — blue, red, and green — was still contracted to three degrees. The last examination — about five months after the attack — showed hardly any changes. The field of vision for white was still nearer the normal, and the optic disc was more sharply defined.

◆

AN ARCHITECTURAL COMPETITION FOR NURSES.

The *Hospital*, an English journal devoted to nursing and hospital news, has adopted the suggestion made by Dr. Billings at Chicago, that superintending nurses should make known their ideas upon the proper construction and arrangement of homes for nurses. Accordingly, it offers two prizes — a first prize, of seventy-five dollars (£15), and a second prize of twenty-five dollars (£5) — for the two most satisfactory plans for a nurses' home, for competition among "lady superintendents," matrons or nurses, of the British Empire, the United States or the countries of Europe.

The following details are published: Competitors must send in the proposals in type-written form, which must consist of two parts: (1) A statement setting forth categorically all the rooms and accommodation which are necessary in order to make the proposed nurses' home a model of what such an establishment should be where room is provided for from fifty to one hundred nurses; (2) a second statement and plan prepared in similar form which provides accommodation for from one hundred and fifty to two hundred nurses. Each of these specifications (1) and (2) must be accompanied by plans drawn to uniform scale, and must explain how the proposed home for nurses can be extended, should the growth of the establishment render such a step necessary.

The conditions are as follows:

(1) The competitors must send their names and addresses by November 1, 1893, to Dr. J. S. Billings, U. S. Army, Washington, D. C., and all plans and proposals presented for competition must reach Dr. Billings not later than *January* 1, 1894.

(2) Dr. Billings, Dr. Henry M. Hurd, Superintendent of the Johns Hopkins Hospital, Baltimore, MD.,

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[1] Medical News, July 29, 1893.

and Miss Sophia S. Palmer, Superintendent of the Garfield Hospital, Washington, D. C., are appointed as the judges of the papers and plans submitted in this competition, and their decision will be final. Should the papers and plans submitted demand such a course, the judges reserve the right of withholding any award.

(3) All proposals must be type-written on one side of the paper only, and all plans must be drawn to a uniform scale of one-eighth inch to one foot.

It is proposed to publish an account of the competition with a selection from the competing plans.

◆

TREATMENT OF HEAT STROKE BY CHLOROFORM.

KOERFER[1] reports the successful treatment of cases of severe heat-stroke by means of chloroform. The terrible exhaustion incident to the severe convulsions of heat-stroke, is certainly no small factor in the fatal effect. Those who have watched cases of heat prostration treated with thorough application of cold baths and cardiac supportives, must have felt the incompleteness of the treatment, in seeing the continuance of the convulsions, even during the bath; and the great exhaustion of the heart following each seizure. As Koerfer points out, the circle is a vicious one; the overheated blood acts as an irritant to the cardiac ganglia and so causes excessive action of the heart's muscle already weakened by the action of heated blood on its fibres. The same hot blood excites the nervous centres, raises the reflex irritability, while the resulting convulsions exhaust the nervous system and still further augment the heat production of the body. Cooling of the body, elimination of heat by baths, is of partial service only, if the over production of heat is allowed to go on. This excessive formation of heat seems due largely to the over irritated nervous centres and it was for this reason that Koerfer treated his cases with chloroform inhalation. The patient, a soldier, had succumbed after a hard day of field practice, and presented a typical picture of severe thermic fever. The convulsions were severe, general and frequent, occurring on the slightest external irritation. There was increasing cyanosis, a very rapid, weak pulse, which failed almost entirely during the convulsion. Respiration was rapid and superficial. The convulsions, though still general, were becoming weaker, and in spite of baths and stimulants the patient was rapidly failing. At this point light chloroform inhalation was tried in the hope of quieting the convulsions. The effect was immediate; after a few breaths the inspirations became deeper, the color improved and the tonic convulsions ceased. The heart's action in particular, was improved, becoming steady, where it had been tumultuous, stronger, slower. At the end of an hour and a quarter the breathing was quiet and deep, the pulse regular at seventy, and the chloroform was withdrawn and a small dose of morphia given subcutaneously. After a two hours' quiet sleep the patient woke conscious and convalescent. The after history of the case was not remarkable.

Another case gave the same happy result. It did not appear that the chloroform anaesthesia was more dangerous in the condition of sunstroke, than at other times, and the application of this remedy is certainly worthy of further trial.

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[1] [illegible]

METEOROLOGICAL RECORD,

For the week ending August 5, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	Weather.* 8.00 A. M.	Weather.* 8.00 P. M.	Rainfall in inches.
S..30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.E.	7	[illegible]	F.	F.	
M..31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.E.	S.	[illegible]	9	C.	O.	
T..1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.	S.E.	4	8	O.	O.	0.01
W..2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.	16	6	C.	C.	
T..3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.	[illegible]	12	C.	C.	
F..4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	S.	[illegible]	[illegible]	F.	O.	
S..5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	N.	9	4	R.	O.	1.87
☞														1.88

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 5, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,891,306	[illegible]	[illegible]	33.00	12.00	24.84	.60	[illegible]
Chicago . . .	[illegible]	—	—	—	—	—	—	—
Philadelphia .	1,115,562	[illegible]	239	29.19	7.35	23.52	1.21	2.31
Brooklyn . .	[illegible]	469	[illegible]	31.92	8.61	27.09	.42	2.52
St. Louis . . .	[illegible]	—	—	—	—	—	—	—
Boston . . .	[illegible]	271	[illegible]	29.52	7.56	[illegible]	1.08	[illegible]
Baltimore . .	[illegible]	—	—	—	—	—	—	—
Washington .	308,431	114	[illegible]	[illegible]	7.24	[illegible]	4.10	[illegible]
Cincinnati . .	[illegible]	[illegible]	[illegible]	26.68	11.04	15.64	[illegible]	1.84
Cleveland . .	[illegible]	149	[illegible]	[illegible]	.67	[illegible]	3.35	.67
Pittsburg . .	[illegible]	[illegible]	[illegible]	16.50	3.72	[illegible]	2.79	[illegible]
Milwaukee . .	[illegible]	111	[illegible]	52.20	[illegible]	[illegible]	1.80	[illegible]
Nashville . .	87,754	[illegible]	8	[illegible]	15.15	15.15	3.03	—
Charleston . .	[illegible]	31	14	[illegible]	12.92	22.61		—
Portland . . .	[illegible]	16	4	31.25	12.50	25.00	6.25	—
Worcester . .	[illegible]	49	[illegible]	53.04	6.12	46.92	—	—
Fall River . .	87,411	[illegible]	[illegible]	[illegible]	2.00	54.00	—	—
Lowell . . .	87,191	[illegible]	36	[illegible]	7.32	[illegible]	—	—
Cambridge . .	[illegible]	41	[illegible]	[illegible]	17.08	31.72	—	—
Lynn	[illegible]	31	[illegible]	[illegible]	9.63	35.31	—	3.21
Springfield . .	[illegible]	21	9	28.56	14.28	28.56	—	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	[illegible]	30	19	30.00	3.33	30.00	—	—
Holyoke . . .	[illegible]	—	—	—	—	—	—	—
Salem	[illegible]	[illegible]	9	37.88	[illegible]	33.33	4.76	—
Brockton . .	32,140	10	7	[illegible]	—	30.00	—	—
Haverhill . .	[illegible]	18	10	[illegible]	11.11	44.44	5.55	—
Chelsea . . .	[illegible]	[illegible]	[illegible]	[illegible]	6.66	13.33	—	—
Malden . . .	29,394	16	[illegible]	37.50	6.25	31.25	—	—
Newton . . .	[illegible]	—	—	—	—	—	—	—
Fitchburg . .	27,146	21	12	[illegible]	17.94	42.84	—	—
Taunton . . .	[illegible]	18	[illegible]	[illegible]	16.66	11.11	—	—
Gloucester . .	[illegible]	10	[illegible]	—	—	—	—	—
Waltham . .	[illegible]	4	[illegible]	[illegible]	—	75.00	—	—
Quincy . . .	[illegible]	8	5	37.50	[illegible]	[illegible]	—	—
Pittsfield . .	[illegible]	[illegible]	4	33.33		33.33	—	—
Everett . . .	[illegible]	[illegible]	[illegible]	50.00	16.66	[illegible]	—	—
Northampton .	[illegible]	[illegible]	1		66.66		—	—
Newburyport .	[illegible]	[illegible]	1	—	—	33.33	—	—
[illegible] . .	10,920	[illegible]	1	—	25.00	—	—	—

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers), [illegible], [illegible] 13, malarial fever 10, erysipelas 2.

[illegible]

Somerville 1. From malarial fever Brooklyn and Nashville 3 each, New York 2, Cleveland and Charleston 1 each. From erysipelas New York and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending July 29th, the death-rate was 22.6. Deaths reported 4,478; acute diseases of the respiratory organs (London) 182, diarrhœa 850, diphtheria 96, whooping-cough 94, measles 87, scarlet fever 69, fever 45, small-pox (London 8, Bradford 4, Bolton and Manchester 1 each) 16.

The death-rates ranged from 11.2 in Derby to 34.1 in Blackburn; Birmingham 25.2, Bradford 22.4, Bristol 14.4, Croydon 20.6, Halifax 15.3, Leeds 22.0, Liverpool 31.5, London 21.0, Manchester 27.8, Nottingham 19.4, Portsmouth 24.9, Sheffield 22.8, Wolverhampton 29.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 5, 1893, TO AUGUST 11, 1893.

First-Lieut. Charles E. B. Flagg, assistant surgeon, will proceed to the Yosemite National Park, California, for duty with Troop I, 4th Cavalry, relieving **Captain Leonard Wood**, assistant surgeon.

Upon being thus relieved, **Captain Wood** will return to his station, the Presidio of San Francisco, Cal.

Leave of absence for one month, to take effect about August 16, 1893, is granted **Captain Henry S. T. Harris**, assistant surgeon, Fort Keogh, Montana.

Leave of absence for one month, to commence about September 5, 1893, is hereby granted to **Major J. V. Lauderdale**, surgeon, U. S. A.

Leave of absence for three months, to take effect on or about September 4, 1893, is granted **Major George W. Adair**, surgeon, U. S. A.

Leave of absence for one month and fifteen days, to take effect when his services can be spared, is granted **First-Lieut. Frank R. Keefer**, assistant surgeon.

By direction of the acting Secretary of War, the extension of leave of absence, on account of sickness, granted **Captain Marlborough C. Wyeth**, assistant surgeon, is still further extended two months.

Captain Marcus E. Taylor, assistant surgeon, having been found incapacitated for active service, by an Army Retiring Board, will proceed to his home and report thence by letter to the Adjutant General of the Army.

Leave of absence for one month is granted **First-Lieut. Alfred E. Bradley**, assistant surgeon, U. S. A.

Leave of absence for one month, to take effect upon the return from detached service of **First-Lieut. Henry C. Fisher**, assistant surgeon, is granted **Captain Eugene L. Swift**, assistant surgeon.

PAN-AMERICAN MEDICAL CONGRESS.

Section on Ophthalmology.

The meeting of the Section will be held in the Arlington Hotel in Washington, D. C., September 5, 6, 7 and 8, 1893. The session of September 6th will be devoted to the discussion of the subject of "The Detection and Correction of Astigmatism," with the reading of papers upon this subject. The meeting of September 7th will in like manner be given to a consideration of "The Detection and Correction of Muscular Errors."

Julian J. Chisolm, M.D., *Executive President*,
Baltimore, Md.
George M. Gould, M.D., *English-speaking Secretary*,
Philadelphia, Pa.
J. Harris Pierpont, M.D., *Spanish-speaking Secretary*.
Pensacola, Fla.

Section on Pedagogy.

The meetings of this Section will be held in Washington, D. C., September 5, 6, 7 and 8, 1893.

Tuesday, September 5th. — At 3 P. M. — The President's Address: "Medical Education in the United States." At 4 P. M. — "The Importance of Physiological Chemistry as a Part of Medical Education." By R. H. Chittenden, Ph.D., Professor of Physiological Chemistry, The Sheffield Scientific School, New Haven, Conn. At 5 P. M. — "The Importance of Bacteriological Study to Medical Students, and the Scope of Instruction." By Harold C. Ernst, Assistant Professor of Bacteriology in the Harvard Medical School, Boston, Mass.

Wednesday, September 6th. — At the close of the General Session, 11 A. M. — "A Demonstration of the Cæsarean Section and the Porro Operations." By Gustav Zinke, M.D., Cincinnati, O. At 3 P. M. — "A Contribution to a Study of Methods of Medical Education in the United States." By Bayard Holmes, M.D., The College of Physicians and Surgeons, Chicago, Ill. At 4 P. M. — "Methods of Teaching Clinical Medicine." By F. C. Shattuck, M.D., Professor of Clinical Medicine in the Harvard Medical School, Boston, Mass.

Thursday, September 7th. — At the close of the General Session, 11 A. M. — "A Demonstration with Colored Crayon, of Methods of Instruction in Anatomy and Surgery." By M. H. Richardson, M.D., Assistant Professor of Anatomy in Harvard University. At 3 P. M. — "The Methods of Medical Education." By Victor Vaughn, M.D., Ann Arbor, Mich. At 4 P. M. — "The Aims and Methods of Medical Education." By W. C. Dabney, M.D., University of Virginia.

Friday, September 8th. — At 11 A. M. — "The Relation of Biology to Medical Education." By W. T. Sedgwick, Professor of Biology in the Massachusetts Institute of Technology, Boston, Mass. At 12 A. M. — "A Demonstration of the Physiological Action of the Heart." By J. P. Sawyer, M.D., Cleveland, O.

It is intended to obtain the use of an amphitheatre for demonstrations of special subjects. Any contribution to the programme of the Section, either by paper or discussion, is solicited from those especially interested in the problem of Medical Education.

J. Collins Warren, M.D., *President*, Boston, Mass.
Charles L. Scudder, M.D., *English-Speaking Secretary*,
Boston, Mass.
Wm. F. Hutchinson, M.D., *Spanish-Speaking Secretary*,
Providence, R. I.

RECENT DEATHS.

George F. Bigelow, A.B., M.D., M.M.S.S., died in Boston, August 10th, aged seventy-three years. He was one of the founders of the Y. M. C. A. in Boston. During the war he allied himself to a reserve corps of physicians in Boston, devoted to the good of the soldiers, and was present at both battles of Bull Run, of Fredericksburg and the Wilderness.

James A. Latimer, M.D., M.M.S.S., died at Laconia, N. H., August 11th, aged forty-six years. He was a well-known physician in East Cambridge and for four years prison physician to the Massachusetts State Prison at Charlestown.

Samuel E. Mumford, M.D., died in Princeton, Ind., July 31st. He was a surgeon during the War of the Rebellion and was at one time President of the Indiana State Medical Society.

Franklin Lane, M.D., died in Orange, N. J., July 24th, aged seventy years. In addition to his medical practice he was for a long time literary editor of the *Baltimore-American*.

BOOKS AND PAMPHLETS RECEIVED.

Prospectus of the London Post-Graduate Course. Fourth Year. Winter term. 1893.

Faradism as an Analgesic in the Loosening of Joint-Adhesions. By Douglas Graham, M.D. Reprint.

Boston University School of Medicine, Twenty-first Annual Announcement and Catalogue. July 1893.

Fifty-third Annual Announcement of the Missouri Medical College, Session of 1893–94, and Catalogue of Session, 1892–93.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital, for the year ending fourth month 19th, 1893.

A New and Safe Method of Cutting Œsophageal Strictures. The Surgery of Gall-Stone Obstruction. By Robert Abbe, M.D. Reprints. 1893.

Entéroplexie. Par le Dr. Adalbert Ramaugé. Mémoire Présenté au Concours de Médecine International Sub-Américain, le 20 Janvier, 1893. Buenos Aires. 1893.

Punctured Wounds of the Feet; A Report of Two Hundred and Three Cases Treated at the Medical Bureau, World's Columbian Exposition, during the Construction Period, June 1, 1891, to May 1, 1893. By S. C. Plummer, A.M., M.D. Reprint.

Missouri State Medical Directory, containing a carefully prepared list of Physicians, Dentists and Druggists, together with Colleges, Hospitals, Medical Associations and Societies throughout the State. Medical Fortnightly Press. St. Louis, Chicago. 1893.

Benjamin Franklin and the University of Pennsylvania. Edited by Francis Newton Thorpe, Ph.D., Professor of American Constitutional History in the University of Pennsylvania. Washington: Bureau of Education, Circular of Information No. 2. 1892.

Reactions: A Selection of Organic Chemical Preparations Important to Pharmacy, in Regard to their Behavior to Commonly Used Reagents. By F. A. Flückiger, Ph.D., M.D. Translated, revised and enlarged by J. B. Nagelvoort. Detroit: George S. Davis. 1893.

The Curability of Narcotic Inebriety. The Mattison Method in Morphinism. Twenty-seven Years Addiction to Opium; Recovery; Relapse. Trional, the New Hypnotic; Its Use in Narcotic Habitués. The Etiology of Narcotic Inebriety. Cocaine Inebriety. By J. B. Mattison, M.D. Reprints. 1892–93.

Lecture.

SECTARIANISM IN MEDICINE.[1]

BY E. R. CUTLER, M.D., WALTHAM, MASS.

(Concluded from No. 7, page 162.)

THESE hospitals are twenty-six in number, and were opened in the following chronological order:

Hospital.	Location.	Date.
Lowell,	Lowell	1840
St. John's,	Lowell	1867
City,	Worcester	1871
St. Joseph's,	New Bedford	1873
House of Mercy,	Pittsfield	1874
City,	Salem	1874
City,	Springfield	1879
General,	Lawrence	1882
City,	Haverhill	1882
City,	Lynn	1883
North Adams,	North Adams	1884
Anna Jacques,	Newburyport	1884
St. Luke's,	New Bedford	1885
Waltham,	Waltham	1885
Cambridge,	Cambridge	1886
Newton Cottage,	Newton	1886
Fall River,	Fall River	1888
Morton,	Taunton	1889
Clinton,	Clinton	1890
Rufus S. Frost	Chelsea	1890
Quincy,	Quincy	1890
Somerville,	Somerville	1892
Malden,	Malden	1892
Marlboro',	Marlboro'	1892
Holyoke,	Holyoke	1893
Framingham,	Framingham	1893

Note the rapid increase. In 1840 one, and no other till 1867. From 1870 to 1880, five. From 1880 till 1890, eleven. From 1890 to now, nine. Thus seventeen, or nearly two-thirds of the whole number, have been established in the last ten years. Hospitals are also in process of development in the following places, and doubtless in others unknown to me, namely, Charlestown, Brockton, Beverly, Natick, Gloucester, Fitchburg, Melrose and New Bedford. Of these twenty-six hospitals, fourteen are conducted like the larger metropolitan hospitals; that is, all the work is done by the staff, and no allusion is made to sect or school. No provision is made for other doctors to practise in them, or for patients to have any choice of attendant. All of these hospitals opened previous to ten years ago pursued this plan, but since that time eleven out of the seventeen have modified or totally changed it. What has brought about this change? The question of homœopathic recognition in the by-laws and appointment on the staff has done it. This question has been a vital one in the life of all these recently established hospitals, and will be in the case of every one to be established hereafter. It can no longer be ignored in a single instance. The public has watched the experiments already made, and is well posted. Hence I say, on account of the number and influence of these institutions, the question of professional relations is becoming one of vital concern to us all. The right way to treat it should soon be evolved and universally recognized. If serious mistakes have been made, the fact should be made plain to those who must grapple with the question in the future, that they may avoid them. If any way of settling it can be devised which effects an honorable and permanent compromise between a clamorous public and a resolute profession, it should be urgently recommended by the general medical society or its representatives, the councillors.

I shall try to give you the present status of the experiment. No two of these eleven hospitals have adopted precisely the same details, but for brevity's sake I will generalize and classify as far as possible.

Only two still use the word "allopathic," namely, the Fall River and the North Adams Hospitals. Newton used it first of all, but dropped it in its later reports. The word "regular," as a substitute for it, is used by Quincy and Clinton. The expression "member of the Massachusetts Medical Society" is used in four cases in antithesis to "member Massachusetts Homœopathic Medical Society," and the appointments expressly required to be divided *pro rata* between them. The word "school" appears in the by-laws of all those places which recognize any professional distinctions at all, except Malden, which consistently adheres throughout to the language "fellow of the Massachusetts Medical Society" and "member of the Massachusetts Homœopathic Medical Society." In all of this class, patients are allowed to choose the "school" by which they shall be treated, excepting Malden again, which allows choice of member of one of the above societies, that is, the member on staff duty at the time. In a few of these places other physicians beside those on the staff have the privilege of treating private, paying patients in the hospital by permission of members of the medical boards. The plan pursued in Malden, of distinguishing practitioners simply according to their membership in the two chief medical societies, is ethically unobjectionable, but I think not so good as the one outlined below.

In only one of all these hospitals has the question of medical sects been completely ignored, and still a fair attempt been made to conciliate sectarian opinion by ample and yet honorable concessions. This scheme has been carried out in Waltham, and is as follows:

No allusion whatever is made to distinctions among legally qualified physicians. All alike may introduce either free or paying patients into the hospital, and treat them there. The hospital simply furnishes board, nursing and medicine, and must be paid for the same before the doctor can receive a fee. All patients, free and paying alike, may choose their medical attendant by personal names, not by sectarian title (but, of course, changes are not allowed on frivolous grounds). Patients having no choice are treated by the staff, in all cases gratuitously; but the latter are not precluded from having private paying patients while on duty. Invidious distinctions have thus been entirely ignored, while the doors have been thrown more widely open than in any other general hospital known.

An obvious criticism of this plan is that confusion must arise from having several doctors making their visits at the same time. It cannot be denied that in a large hospital this criticism might have considerable force, and the difficulty could, perhaps, only be met by having different nurses accompany different attendants. I feel confident that it could easily be surmounted by this or some other means; and it would not often arise in such hospitals as are here under discussion. As a matter of fact, it has not yet caused any serious inconvenience in the Waltham Hospital, where from twenty to thirty patients are usually under treatment by five or six different physicians.

It has usually been found that in emergency cases, such as severe accidents, the subjects being often strangers, the regular staff attendant has been preferred. But these cases are comparatively few, so that actually only about one-sixth of the whole number of patients is attended by the staff officially. Nearly all cases, even of accident, are brought in by some doctor who has seen the case outside; and he retains it, if so decided between him and the patient.

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[1] Delivered before the Middlesex South District Medical Society.

Of course, this scheme is not satisfactory to the homœopaths, because they wish special recognition; but it is obviously perfectly fair to all, and would be universally acceptable, I believe, if one example of the surrender of principle had not infected the whole State.

The facts above set forth illustrate two distinct methods of dealing with the question herein discussed: (1) The method of explicit recognition of schools or sects in the profession, and an attempt at a *pro rata* representation of the same on governing boards and practising staffs, the latter to have almost or quite exclusive charge of the hospital service. (2) A total ignoring of intra-professional distinctions, with the establishment of such regulations as shall practically secure to each individual in the community the enjoyment of all the benefits of the institution.

I will endeavor fairly to contrast the two methods.

(1) That of expressed recognition.

It has an appearance of great fairness, and thereby secures the favor and pecuniary support, not only of the homœopathic sect, but is equally pleasing to the non-homœopathic layman, who can seldom comprehend the ethical argument or sympathize with our sensitiveness to it. The whole subject is for him cleared of its difficulties when we abandon it. The homœopathic practitioner is satisfied because he secures an official endorsement of his sectarian character. That these considerations have great practical weight is shown by the fact that in the places named they have overcome the objections of the general profession; but, on the other hand, it must be said that this arrangement practically abandons the one essential point in our long contention, namely, that medical sectarianism is professional immorality. On this ground alone can we consistently oppose it, and on this ground we ought forever to stand. The worst feature of the arrangement is that it not only recognizes homœopathic sectarianism, but it in all cases implies, and in some expressly allows, that we, too, constitute a sect or school, namely, the "allopathic" or the "old" or the "regular" school. Now I, for one, indignantly protest against this degradation. Must the enormous majority of medical men assume or accept a partisan appellation because a small minority choose to adopt one? The only title any of us rightfully possesses is "Doctor of Medicine." Anything other than this indicates a self-imposed limitation. It should bind one who adopts it to the strictest exclusiveness in his work, otherwise it has no significance. We ought steadfastly to decline to enter into any relation or discussion which puts the general profession on the same level with a sect. I can but deprecate the humiliation involved in the position of those who accept a diminutive title simply for the convenience and personal benefit of a group of sectaries. For it can in no way be claimed that the good of the public or the institution is directly subserved by the use of these titles. True, certain beneficent institutions seem to be pecuniarily benefited by the unworthy attitude of the doctor; but the public can never be a gainer when it pays its money to debauch the sensitive conscience of a high-minded profession. Already is charlatanism in insidious forms too rife among us, but never has it appealed to us with arguments more specious or more powerful than in this instance. Again, the method of sectarian recognition involves such puerile details as the division of single wards, the assignment of the cases to the separate "schools" by a matron or other unprofessional person incompetent to judge of their needs, and the begging of the whole important question of medical treatment by submitting it to the ignorant patient on his entrance to the hospital.

It virtually pledges the practitioner accepting a position under these conditions beforehand to a certain kind of treatment; for, let it be noted, he does not appear in this arrangement as a private individual, at liberty to use the widest scope of professional judgment, but as a member and representative of a sect. The patient might as properly be given the liberty to dictate his diet on entrance as to choose his medical treatment. The circumstances here are very different from those surrounding a case in private practice. If a patient chooses a so-called homœopathic attendant at home, and the latter applies non-homœopathic treatment, it involves merely the deception of the individual patient who undoubtedly *is* deceived, and also a question in casuistry on the part of the doctor. If he can persuade himself that such conduct is right, that is one thing. But it is quite another when in a public institution to whose service he was chosen in an expressly sectarian character, he is selected by a patient, who quite likely has no personal acquaintance with him or his professional skill, for the direct purpose of securing the kind of treatment indicated by his title. The deception, in case any other than the chosen treatment is used here, is shared by the administration, and the patient is doubly wronged, because in the hospital he practically loses the power to change his attendant if he recognized the fraud. He might, perhaps, remonstrate that if he had supposed his case required surgical or any other than strictly homœopathic treatment, he would have chosen differently, but it would probably avail him little. At any rate, the stultification of the practitioner is evident.

(2) The plan of ignoring all distinctions and reducing the work of the staff to the lowest possible limits, and electing the same by annual ballot of a representative body of trustees.

This plan not only appears to be, but actually is, absolutely fair to all. True, it does not recognize self-imposed titles; but neither does it compel any one to accept titles imposed by others.

It recognizes the legal equality and the professional dignity of all medical men. It provides perfectly for the preferences (and even prejudices) of each possible patient, while refusing the preposterous claim of such to dictate his treatment, which he does when he chooses a "school" instead of an individual. It should make the hospital an object of interest and pride to the whole profession, and prevent the jealousies and rivalries which arise under the system of an indefinite appointment of a staff having exclusive charge of all patients entering. It would tend strongly to break down sectarian distinctions outside its walls, by promoting acquaintance, discussion, comparison. It would secure a united and enthusiastic support of all classes of people, and greatly add to the amount and efficiency of its work and its consequent value to the public and the profession. It simply prevents the hospital from becoming the tool of sectarian propagandists.

TWO ESSENTIAL DIFFICULTIES IN THE PRESENT SITUATION.

So much for a pretty general review of the evil results of sectarianism from a professional point of view.

Having to a degree cleared up the diagnosis and symptomatology of the case, I proceed without delaying upon clinical history or prognosis, to say that observation and discussion, together with the strong tendency to recovery inherent in so vigorous a body as the medical profession, have already eliminated numerous complications and collateral symptoms which have greatly obscured the situation; and it is now pretty plain that the really essential and intractable features of the malady are two, namely, bigotry and intolerance on the one hand (leading to non-intercourse and even measures of repression, such as debarring or ejecting from societies and hospitals), and, on the other hand, a sophistical defence and disingenuous use of an offensive partisan title.

Let us examine these two radical difficulties.

(1) The conduct of the main body of the profession has been and still is bigoted and intolerant. I believe it to be true that very few non-sectarian physicians know anything worth mentioning about either the theory or practice of the homœopaths. Most of us are not on such a footing with any such individually as to frankly and freely discuss the subject with him. Most of us, again, have little time or inclination to read homœopathic books or journals. Very few of us, I believe, have ever visited a homœopathic hospital. True, we are all more or less familiar with the average homœopathic practitioner, but are inclined to make much of his inconsistencies and his failures, and correspondingly little of his successes, or to ascribe them to his use of other than homœopathic means.

Most physicians have a feeling of bitterness toward these men; and some, even still, call them all either knaves or fools. In the past they have been systematically ostracized; and some have been expelled from societies with which they had been long connected and in which they wished to remain.

Now, to entertain such feeling and use such language, and proceed to such extremes of harsh treatment, while knowing really not very much of the merits of the case, I pronounce bigoted and intolerant to a most reprehensible degree. So long as the above remains true, it is an effectual bar to union.

(2) Offensive partisan titles are still used; and, on the part of the homœopaths, this use is disingenuous and its defence sophistical. The use of distinctive titles by non-sectarian practitioners was never their choice, but they were almost compelled to use some one of them by the voluntary assumption of others by the sectaries. Here was a fatal surrender, as already explained; and the titles accepted or adopted were scarcely less objectionable than that of homœopath. In spite of the difficulty and inconvenience they should have steadfastly refused to accept any title whatever except their legal one of Doctor of Medicine. Look briefly at these terms "allopathic," "regular," "old school."

The expression "allopathic" indicates no accepted principle in medicine, and applies to no class of practitioners.

The impudence of those who would, if they could, force medical men who do not believe in homœopathy as a general principle, and who refuse to place the slightest limitation upon their practice to accept the title "allopath," is colossal. As well might a man who calls himself a Christian, insist that all who do not accept his belief and practice should call themselves heathen, because that word is the proper antithesis to the other. Even if our sectarian friends can say that our practice, as compared with theirs, is allopathic, does it follow that we must adopt the title, in order that they may be aided in setting themselves up as a distinct class before the public?

The word "regular" has been generally accepted by the profession as the least objectionable term, but it is really far less appropriate than "allopath." It is precisely as applicable to homœopaths, if legally prepared to practise medicine, as to any one else. "Old school" is a misnomer of the most ludicrous kind. Modern non-homœopathic therapeutics, so far from being old, are so new that a treatise on them is antiquated in ten years, while Hahnemann's works of sixty or eighty years ago are still the standard gospel of homœopathy. The word "school," which means "the followers of a teacher, or the adherents of a system of doctrine," is likewise wholly inapplicable to the general profession, which long ago abandoned authority and theory as their guides in treatment, and are following as rapidly as the nature of the case will allow in the way blazed before them by scientific investigation. In fact, no expression could more accurately describe two distinctive features of homœopathy than "old school."

Other terms which are frequently used as descriptive of modern therapeutics are "scientific" and "rational"; and if used in a comprehensive sense to include the spirit and aim as well as the details of medical practice, they are correct. But when used distinctively to characterize non-homœopathic medication, they are far too pretentious. Indeed, most, if not all, homœopathic apologists lay claim to the term "scientific," for the reason that, as they say, their system is based on the one natural law of cure. This claim is absurd, for two reasons: (1) It begs the question; for the immense majority of scientific men see no such comprehensive law, but only an occasional, perhaps frequent, coincidence; (2) Their practical success is too small to base any such claim upon. If this law (or fact or rule or guide) is scientific, it must be unvarying and without exception; and while giving full weight to the complicated conditions of the case and to the great imperfection in the present results of homœopathic provings, it appears to me that the fruits of nearly a hundred years are truly disappointing and pitiful.

I have tried a few times to find some item of homœopathic practice which I could test for myself, without resorting to indices and repertories and provings, but with little result. I have tried to observe whether the success of my homœopathic neighbors was so much greater than my own as one would expect if they possessed a guide so greatly superior to my very unsatisfactory one, and I have not thought that it was. I have seen columns of *ex parte* statistics; but, for reasons well known to you, I have not been convinced by them.

I wrote a few weeks ago to a man well known to some of you, a graduate of Harvard University and of one of the New York schools of medicine, and later an interne in some of the New York hospitals, but who later embraced homœopathy, and who has been for several years Professor of Materia Medica in the University of Michigan. I put to him this question: "Have you yet found either a recognizable morbid condition or a group of subjective symptoms which you feel reasonably sure you can treat successfully under homœopathic indications which you could not have treated successfully before adopting homœopathy? He replies as follows: "My answer is 'No.' But it has rarely occurred that, since taking up with homœopathy I have preferred to use a drug not selected as homœopathic." Now if *similia* is a scientific law, or even an empirical fact, it certainly is disappointing that my friend, who is familiar with the ordinary practice as well, should not be able to give me a single practical statement by which I could test for myself the value of the doctrine. Now I submit again that here is small basis for the foundation of a sect and assumption of a distinctive title. The word "empirical" is the most correct one to apply to all medical practice — homœopathic included — because all is very largely based on observation and experience; but the word carries an opprobrious significance which is unjust to all.

In fact, these and all other descriptive adjectives should be unconditionally repudiated, and not even allowed for purposes of discussion; and the legal, generic, all-sufficient title of Doctor of Medicine or physician adhered to.

Now we reach the word "homœopathic"; and here we get at the true inwardness of the second obstacle to the unity of the medical profession, and a formidable one it is. It has been discussed with warmth within the homœopathic ranks; but I judge the prevailing sentiment there to be strongly in favor of its continued use, though its gradual disappearance from the signs and cards of individual practitioners indicates the recognition of the fact that its employment there is, to say the least, in bad taste, and is to my mind also an omen of a better day when all shall acknowledge that its use anywhere is unprofessional.

What now are the reasons alleged for the use of the terms "homœopathic," etc.? There is published, in the Transactions of the Homœopathic International Congress of 1891, an address entitled, "The Ethical Basis of the Separate Existence of the Homœopathic School." After acknowledging that the claim that better medication by one school is not a sufficient ethical reason for its separate existence, the author makes two assumptions; first, that the general profession is not "sufficiently emancipated from conscious personality, rancor, jealousy and vindictiveness" to administer upon the ethics of the case — to which I agree; he then assumes that his audience is free from these disqualifications — to which I entirely disagree. He then proceeds to give the usual ridiculous libel upon non-sectarian practice, and contrasts it with homœopathy, to the glorification of the latter. On the basis of this parallel, together with the fact that empirical medicine has never developed any general law of therapeutics, and the assumed comparative unfitness of his opponents to adjudge the question, he rests his argument. The remainder of the article is a high-pitched rhetorical scream, in which homœopaths are urged to an onslaught on the general profession all along the line, with the purpose of its complete subjugation. In the year 1885, Dr. Conrad Wesselhoeft, of Boston, gave a lecture on homœopathy before the Boylston Medical Society of the Harvard Medical School; and in 1886 Dr. V. Y. Bowditch replied in an address before the Massachusetts Homœopathic Society.

As I am not concerning myself with the comparative merits of systems, but, on the contrary, trying to show that such comparisons are not relevant to the question of medical unity, I will not analyze these excellent papers. But in the preface to his lecture (which I advise you all to buy of Otis Clapp & Sons, and read for yourselves) Dr. Wesselhoeft gives the true and only reason for the separate existence of the homœopathic school and the use of the distinctive title, namely, that the distinction may be kept before the public. He reaches the conclusions that (to quote), "it would be a wrong on our part, a gross deception of ourselves and the public if we disavowed or denied our principles, and failed to define our practice by an appropriate term." Again, he says: "After giving up all claims of perfection and infallibility, it by no means follows that a physician accepting the method known as homœopathy must of necessity practise it exclusively. He may do so if he chooses, or he may not apply it always. But, "if a physician adopts any therapeutic method, his colleagues, no less than the public, have a right to know what that method is. Any secrecy or concealment of methods is quackish. Not the publicity, but the concealment of convictions, would be sailing under false colors." He then proceeds to charge the profession with sailing under false colors because they do not openly acknowledge and profess that they practise allopathy.

When one fairly takes in this astounding turn of logic it is liable to produce a state of asphyxia.

When we realize that we are the ones who are quackish and are deceiving the public because we do not openly avow the allopathic principle, according to which we are really practising, we can only hang our diminished heads and plead that we did not know it.

This line of reasoning would not only justify the hypnotist and the electro-therapeutist in announcing their special method of practice, but even require them to do so because they believe in and employ it when they choose. The logical sequence really is that the individual who announces that he "doctors both ways" is the most honorable and consistent of all. The disingenuousness of this position that the homœopath is the really honest man is illustrated by the well-known fact that he seldom tells his patient what medicine he is giving him, even if he is asked to do so, while the physician who writes a prescription, though in Latin, according to a bad custom, cannot effectually conceal his treatment even if he would.

True, it is often best for the patient not to know what medicine he is taking, because he really knows nothing about its action, and his prejudiced or ignorant ideas may be a serious obstacle to a favorable result. But it is equally true that he knows as little about the general system as about the special drug.

If he prefers the homœopathic system on theoretical grounds, his conclusion is a mere instance of the *reductio ad absurdum*; for not even the educated homœopathic physician himself can give any scientific or satisfactory explanation of the doctrine of Similars (see preface to Dr. Conrad Wesselhœft's translation of Hahnemann's "Organon"). If he prefers homœopathy on practical grounds, the fact looms up that no homœopath nowadays claims to adhere strictly to the system, so that the patient does not know whether he has been treated homœopathically or not. In either case his opinion is absolutely worthless, and to defer to it or appeal to it, as is done in the use of the sectarian title is a thoroughly quackish subterfuge.

It is recognized in all the professions that it is unworthy and shameful for a man to blazon before the public his skill, his specialty, his success, his educational advantages, or even his methods and opinions. The only possible object of assuming a title indicating any of these things is personal emolument. It is advertising, pure and simple.

Furthermore, no amount of specious argument can conceal the dishonesty of varying from a line of practice after publicly and voluntarily adopting a title descriptive of it, without frankly explaining such variation each time to each patient.

Do our homœopathic friends do this? Echo answers.

Now, recognizing these two evils, bigotry and intolerance on the one hand, and a self-justifying sectarianism on the other, how can union ever be brought about? It is evident that it cannot be accomplished by compulsion or repression or by any heroic or revolutionary measure, but rather by the slow and perhaps painful application of what I may call the principles of social physiology or hygiene.

I remember to have read somewhere as follows: "Whatsoever ye would that men should do unto you, do ye even so to them." And, again: "Thou hypocrite! first cast out the beam out of thine own eye, and then shalt thou see clearly to cast out the mote out of thy brother's eye."

In accordance with these rules, let us begin at home, and see what can be done.

REMEDIES.

In the first place, recognizing the perfect right of every doctor to believe and practise whatever commends itself to his judgment, let us expunge from our by-laws the section above referred to.

If any man believes in *similia similibus curantur*, let him believe in it: where is the harm or wrong?

If any man chooses to affiliate with others of like belief in a society for the proving of drugs or the advancement of homœopathic practice let him do so, but do not bar him from medical societies of a general scope. If he can learn more to his advantage in the former than the latter, so much the worse for the latter. Let him freely choose.

If he prefers to send his patients to a so-called homœopathic hospital, or to visit it himself for instruction, let him do it. If the practice there is more successful than elsewhere, it ought to prevail. If not, the way to convince him of the fact is not to call the other party hard names, but let him see and judge for himself.

I deprecate as much as any one the existence of these sectarian schools, societies and hospitals; but deprecation is belated and unavailing. They are here, and here to stay. We must make the best of that. The democratic principle of a fair field and no favor is as much in place here as on the ball ground. It is idle to expect these institutions, which may be called the vested rights of the sect, to renounce their sectarian names, at least at present. I am persuaded, however, that their distinctive features would gradually fade, under the conditions herein proposed, till not enough remained to justify the name, even to their promoters. The chief difference now lies in the item — an important one, to be sure, in their eyes — of drug-therapeutics. That this item must steadily diminish in importance compared with the enormous resources of non-medicinal treatment and with the vast general departments of medical study, such as biology, physiology, psychology, bacteriology, chemistry and hygiene, and their application to the prevention of disease, to education and to all the conditions of human life, seems to me self-evident.

On the other hand, I deny the right of the Massachusetts Medical Society to inquire into the intentions of its proposed members, to exact pledges of them, or to interfere in any way with matters of private judgment, or officially to stigmatize any system of practice. Every one of them ought to employ whatever means he thinks will conduce to the cure of his patient, and should have the fullest liberty to do so. A central board of examiners should be appointed by, and in behalf of the public, without whose certificate no man could practice medicine in the State. This could easily be obtained if the whole profession demanded it. Then all the licentiates of this board should be admitted to the State Society without further test, and these State licenses should have an inter-State value. It would obviate the need of the present examination at the hands of the censors. Even if the present plan is changed, as proposed by the officers of our Society, so as to have a uniform examination, it is a vexatious thing, and keeps large numbers of respectable men outside of the society. The Massachusetts Medical Society should include in its membership every reputable practitioner in the State.

The gross changes in these homœopathic institutions as well as in the Massachusetts Medical Society would doubtless be of slow development, and would be brought about by interstitial and molecular movements represented by the mutual reaction of their individual constituents. Therefore, I urge, in the second place, that sectarian distinctions be entirely ignored in the private relations of medical practitioners, with one very important proviso, namely, that no man should be deemed worthy of fellowship who personally advertises his therapeutics; and I hereby announce my individual purpose to be guided by this principle, within limits set only by circumstance and my private judgment. I am by no means alone in taking this course. It is well known that many specialists in our large cities have practically adopted it. In the New York State Society, largely through the influence of the specialists, the whole code of ethics has been abolished, and consultation is unrestricted, though a minority has an organization of its own in which the code is still accepted. Hobart Amory Hare says in a foot-note on page 19 of his "System of Practical Therapeutics," "The time has, in my opinion, come when the regular physicians should no longer, by refusing to consult with homœopathic practitioners, recognize their separate existence."

Professor Hare advises this course on the ground that there are really no longer any genuine homœopaths, and adduces reasons for the statement. While I agree that there are few if any doctors left who practise a pure and exclusive homœopathy, I prefer to take my stand on the broader ground outlined in this paper, that they have a perfect right to practise, advocate and advance it as much as they can, within the bounds of professional propriety.

In my judgment, free professional intercourse would soon lead to a correct estimate of the value of homœopathic theory and practice, both within and without the profession; and the only insuperable obstacle on the part of its votaries is their public, individual assumption of the extra-legal title.

The law of the survival of the fittest may be fully trusted to differentiate the good and the genuine from the evil and the fraudulent; but the condition of its operation is inexorable, namely, the freest possible opportunity for the two to mingle.

It is not by formal papers that conviction or agreement can be attained, but by colloquial discussion of concrete cases, and the critical watching of effects by interested and vigilant observers. Therefore, I say, throw down the party walls. Let consultation, discussion, comparison, and competition decide differences which many years of exclusion and intolerance have only aggravated and confirmed. Furthermore, let all reputable practitioners be cordially welcomed to membership in local medical clubs and societies.

If our sectarian friends fail to respond to these conciliatory and somewhat costly advances on our part, we shall at least shift from our shoulders to theirs the onus of bigotry and narrowness. Whether they would submit to any process looking to their ultimate extinction as an organized sect, I cannot say. They realize full well that their name is at present a tower of strength as far as securing patronage is concerned, and much more important to them than any peculiarity in their practice. But it is certainly true that obtrusion of the obnoxious title before the public on the private card and sign has largely passed into disuse, in obedience to that sense of professional honor to which this paper is intended as an appeal.

In hospitals let the staff be composed of such men only as are skilled in diagnosis and in surgery sufficiently to meet the emergencies which arise in infectious and traumatic cases, whatever may be their opinion concerning drug-therapeutics; and let the hospital sustain them in their official work, which should, of course, be gratuitous. In all other cases let the hospital assume no legal responsibility, and treat all practitioners alike. Let every patient, at least in the small hospitals, whether he pays or not, if he wishes, choose his medical attendant. Let no mention be made of any sectarian name. Just here our colleagues in various places have missed the vital point. They have compromised with loss of honor, because they have recognized and dignified sectarianism, both in themselves and in the homœopaths.

This plan compromises indeed, but yields no essential point. They recognize the antagonism as irreconcilable, and rest satisfied with mutual toleration. This plan ignores the distinctions and aims at organic union.

In the last International Homœopathic Congress — whose records I earnestly wish each one of you might read, if you wish to get a fair idea of modern homœopathy — the following resolutions were adopted as the sentiment of the Congress:

"*Whereas*, The proceedings, papers and reports of the Fourth Quinquennial International Homœopathic Congress conclusively show that the principles of homœopathy and its practice by educated men and women has obtained a firm footing in every civilized country on the globe; and

"*Whereas*, Notwithstanding the untold obstacles and opposition it has encountered, homœopathy has steadily advanced in professional and public estimation, until now, at the close of nearly a hundred years of incessant and desperate struggle with its foes and the repressive influence of inimical laws, its future permanency and continuous progress are, humanly speaking, assured; therefore,

"*Resolved*, That this International Convention would respectfully suggest to the non-homœopathic portion of the medical profession the question whether the time has not now arrived when the policy of professional ostracism and legislative repression may not with advantage be abandoned, as a needless discredit to our loved profession, and as a method of controversy which is daily becoming more and more unpopular and ineffective;

"*Resolved*, That we earnestly suggest that the questions that now divide the medical profession into offensive and defensive factions can never reach a solution except through those methods of observation, experiment and logic which form the only effectual resort in all other departments of human knowledge."

I, for one, heartily respond to the spirit of these resolutions. I see in them and in many other things the approach of the time when personal animosity and partisan strife shall give way to fraternal respect and co-operation, and when all distinctive titles shall disappear, while whatever of truth and value those titles represent shall be established by scientific tests and universally applied in the beneficent practice of the healing art.

In closing, let me say that my ideal is an association so comprehensive as to include all competent and reputable practitioners; so liberal as to give all opinion and practice a fair hearing and an impartial judgment, and all individuals perfect liberty of thought and action; so keenly sensitive to its honor as to resist the power of lay prejudice or favor without the restraint of iron-clad by-laws or codes of ethics; and so united and strong as to command the respect of communities and legislatures, and be able to bring to bear upon them an effective influence in favor of educational and sanitary reforms.

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Original Articles.

SUBPHRENIC ABSCESS, WITH SPECIAL REFERENCE TO THOSE CASES WHICH SIMULATE PYO-PNEUMOTHORAX.[1]

BY A. LAWRENCE MASON, M.D.,
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THE systematic treatises on medicine and surgery make little mention of abscesses of the sub-diaphragmatic region, from the fact that they are not dependent on diseases of any one organ, but are rare sequels of various affections, and they give rise to symptoms and physical signs which are hard to classify for purposes of diagnostic differentiation. But within recent years, from the evidence of post-mortem examinations, where such lesions had been unsuspected during life and where their symptoms had been misinterpreted, as well as from the gradual refinement in the accuracy of physical diagnosis, single cases, or small groups of cases, of this description have been oftener reported in medical journals, so that it is now easy, through analysis of these observations, to recognize the varied etiology of these grave conditions, and, from a knowledge of their causation, to see more clearly their clinical import and therapeutic indications.

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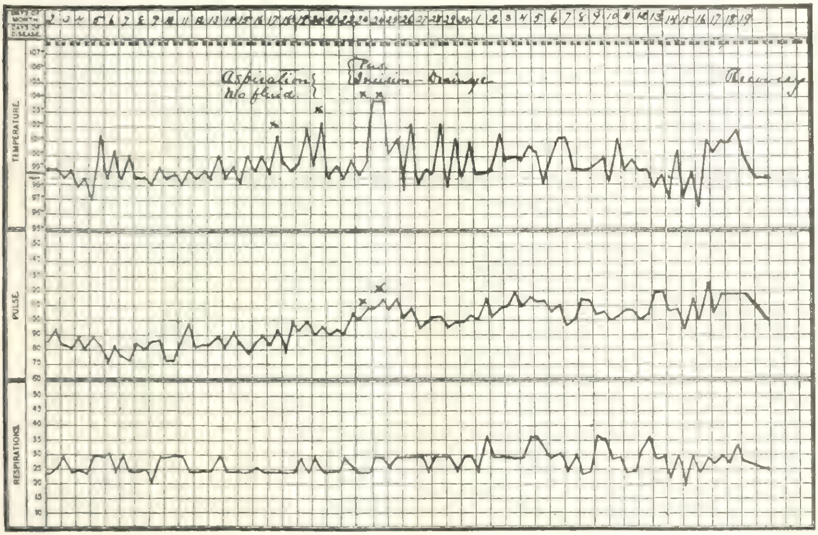
[1] Read before the Association of American Physicians, Washington, D. C., May, 1893.

While collections of pus within the thorax may usually be detected with a fair degree of certainty, it is not so when they are seated high up under the arch of the diaphragm, circumscribed by peritoneal adhesions and with difficulty reached by the exploring needle. So that the earlier literature of this subject is largely a record of mistaken diagnoses, the true condition, in many cases, having been discovered only after death or during operation for a supposed empyema or hepatic abscess. In this relation, Bristowe, after reporting two obscure cases, says: "It seems clear that the recognition of abscesses in the upper part of the abdomen is often extremely difficult if not impossible, and that to diagnosticate them correctly demands the most careful and continued observation, and to treat them effectively calls for both skill and courage."

The gradual accumulation of observations, however, especially since the valuable article by Leyden, in 1880, on the condition which he termed "Pyo-pneumothorax Subphrenicus,"[2] shows that latterly more cases have been recognized and attributed to their proper sources, and early treatment by incision and drainage has oftener led to recovery. But it is also apparent that the primary, causative lesions are of so grave a character, and the complications so serious, that cure can result in no large proportion of cases.

CLASSIFICATION.

In a general way such abscesses may be classified according to their situation. They may be under the right or the left wing of the diaphragm, the suspensory ligament of the liver being the dividing limit. In the former case they are encapsulated between the diaphragm and the right lobe of the liver, and are usually due to inflammation extending from the region of the liver, kidney, duodenum, or cæcal appendix. On the left they find their seat in the tissues adjacent to the stomach, the pancreas, the left lobe of the liver, or the spleen, their lower limit being formed by firm adhesions between these organs, the transverse colon, and the parietes. This is the more common position owing to the fact that the most frequent exciting cause is perforating gastric ulcer. Subphrenic abscesses, so called, are usually within the peritoneal cavity, a circumscribed peritonitis, but they may be retro-peritoneal, extending in the connective tissue behind the stomach, duodenum, intestine, or kidney. They may contain air through perforative communication with the gastro-enteric tract, or they may not. Finally, they may invade the abdominal or the thoracic cavity, more frequently the latter, thereby giving rise to the most complicated physical signs and conditions.



Case I.

THE ETIOLOGY

of these abscesses and the incidents attending their course may, perhaps, be best shown by the report of seven cases, which have come under my observation at the Boston City Hospital during the past five years, with such amplifications as the literature of the subject affords. I will then consider the difficulties attending their diagnosis and treatment.

Case I (Mason). *Abscess between liver and diaphragm; drainage; recovery.* — An Italian, aged thirty-five years, entered my service at the Boston City Hospital, with diarrhœa and iliac tenderness. He had little fever and no history of prolonged illness. The symptoms abated in a week, but ten days later abdominal pains, headache, and diarrhœa recurred. The spleen was not enlarged. Distinct diazo reaction in urine. Typhoid fever, dysentery, and malaria were considered and excluded. Pain at epigastrium and over liver increased, with distended stomach and vomiting, and soon the hepatic dulness was found to extend an inch and a half below the ribs in the mammary line. No jaundice. Respiration deficient at the right base. An examination of the blood showed 4,690,000 red corpuscles to 20,000 white; 1 : 235; a leucocytosis. Abscess in the region of the liver was suspected, but the exploring trocar at the angle of the scapula and in the side found no pus. A week later twenty-four ounces of inodorous pus were evacuated through the sixth space, anterior axillary line. Dr. F. B. Mallory, assistant pathologist to the hospital, examined the pus but found only broken-down material; pus corpuscles and large fatty cells; no organisms; nothing diagnostic. Dr. Edward H. Bradford, my surgical colleague, evacuated and drained the abscess through the seventh space at the anterior axillary line. Half a pint of pus escaped. The incision went through the diaphragm which was adherent to the costal parietes. The finger could feel the upper surface of the liver, but no cavity in its substance. Irrigation with boracic acid solution; baked-gauze dressing. There was a yellow or pinkish discharge containing débris, which might have been liver substance, but this was not determined. Recovery in one month.

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[2] Zeitschrift für klinische Medicin, 1880, S. 320.

Similar cases are the following, which I find after brief search, and they are probably not very uncommon.

Case. — Stockton and Park [3] report a case of subphrenic abscess above the right side of the liver, thought to have been due to hepatic abscess, which was cured by operation. Two years later the patient had pleuritis, septic pneumonitis, and empyema, which were also cured by incision and drainage.

Case. — Ford [4] reports an interesting case of "Hepatic Abscess with Signs of Pneumothorax," obscure respiration, metallic tinkling, and succussion. The autopsy showed complete adhesion of the right lung to the parietes and to the diaphragm. The lower lobe was the seat of an abscess which communicated, through the diaphragm, with a large abscess of the liver, thus forming an air-containing cavity which had given rise to the signs of pneumothorax. The abscess had been treated by intercostal incision and drainage.

Case. — Fyffe,[5] in an article on "Abscess of the Liver," relates the following deceptive history: A patient from India who had had dysentery presented "liver symptoms," with bulging and fluctuation of the right side. Incision between eighth and ninth spaces in front and drainage of a supposed hepatic abscess. At the post-mortem, some time later, the liver was found to be perfectly healthy, but an abscess above the liver had made several spontaneous openings.

From this and other cases the author concluded that peri-hepatic abscess in this locality may find its way out by several openings, whereas, if abscess of the liver points externally, it is generally in one direction by a single orifice, and that most frequently at the margin of the right lower ribs.

Case. — Cochrane [6] records a case of subphrenic abscess between the right lobe of the liver and the diaphragm, in which the symptoms and history had indicated hepatic abscess. Rupture into the right lung occurred and pus found exit through the bronchi. At the autopsy the liver was normal, but on its upper surface was an abscess bounded above by the diaphragm and below by the hepatic capsule, with an opening an inch in diameter into the base of the right lung.

Case. — Suppurating echinococcus cyst was the cause of subphrenic abscess in a case reported by Herrlich,[7] who resected the seventh rib in the right side, incised the diaphragm, and cured the patient.

Case. — Shepherd [8] relates the case of a man, aged sixty, at the Montreal General Hospital, who was thought to have liver abscess or echinococcus cyst. He had a history of pain at the epigastrium and right hypochondrium for more than a year, with slight jaundice. A fluctuating tumor pointed at the right hypochondrium and encroached upon the thorax, causing bulging. Eighty ounces of pus were evacuated. The diaphragm was felt through the opening pushed up to the third rib in front. The liver was displaced downward and backward, but was not felt. No signs of echinococci or liver substance. Rapid recovery. The abscess was peri-hepatic.

Case. — A. T. Cabot [9] reports from the Massachusetts General Hospital, "two cases of abscess of the liver, implicating the pleural cavity," which he cured. In the first, an incision through the tenth space, posterior axillary line, showed a large abscess below the diaphragm which had invaded the pleural cavity. In the second case, a higher incision in the seventh space anterior axillary line gave exit to a few ounces of pus from a sacculated empyema. The diaphragm was felt bulging up and was incised, and a large abcess below was drained.

It is evident from these cases that subphrenic abscess of the right side may arise by extension from hepatic abscess or echinococcus cyst, and also that it may not involve the liver substance at all. The distinction during life is very difficult. Dabney,[10] in his paper on "Hepatic Abscess," read before this Association last year, states that rupture into a bronchus is the most common and least dangerous direction. He also says that the presence of liver cells in the contents of an hepatic abscess does not seem to be of very common occurrence, but that occasionally they are found and are of great value in diagnosis. Von Jaksch [11] says that it rarely happens that much aid accrues to diagnosis from the chemical examination of purulent discharges. In Cabot's cases the microscopical and chemical examinations were thought diagnostic of liver abscess. In my case the result of microscopic examination was negative. In cases of "peri-gastric" abscess, to be mentioned later, streptococci and the bacillus pyocyaneus have been found, with many other organisms and sometimes particles of food. From this source, also, round worms have escaped into the pleural cavity.

SUBPHRENIC ABSCESS IN RELATION TO PERFORATING ULCERS OF THE STOMACH AND DUODENUM.

The chief interest of this subject, however, centres upon its relation to gastric and duodenal ulcers, and the occurrence of air-containing abscesses which present signs resembling those of pyo-pneumothorax. Four such cases have come under my observation. Two of these were reported to the Suffolk District Medical Society [12] four years ago, and will be briefly recapitulated.

CASE II (Mason). *Subphrenic abscess from gastric ulcer, with perforation; drainage; cicatrization of*

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[3] International Medical Magazine, May, 1892.

[4] St. Louis Clinical Record, July, 1876.

[5] Bristol Medico-Chirurgical Journal, vol. ii, page 250, 1884.

[6] Canadian Practitioner, April, 1884.

[7] Deutsche med. Wochenschrift, 1886, S. 139.

[8] A Case of Sub-diaphragmatic Abscess. Phila. Med. News, December 17, 1887.

[9] Boston Medical and Surgical Journal, January 9, 1890.

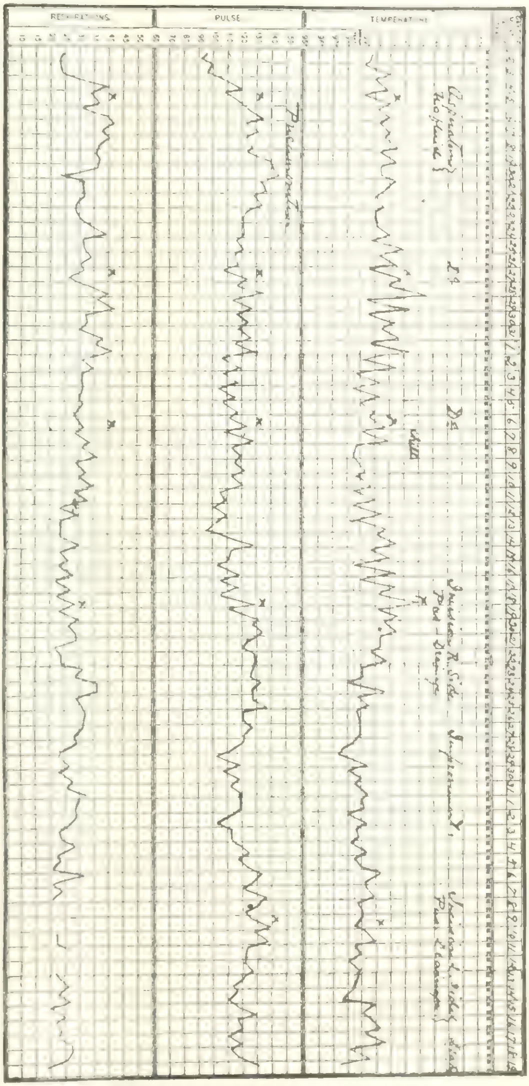
[10] Transactions of the Association of American Physicians, vol. vii., 1892.

[11] Clinical Diagnosis, p. 298.

[12] See Boston Medical and Surgical Journal, October 31, 1889.

ulcer: death. — A young woman, aged twenty-two years, who had been anæmic for a year, entered the hospital December 12, 1888, with dyspepsia and gastric pain. The pain was referred to the lower margin of the ribs, and was aggravated by forced inspiration. There was fever, but vomiting, chills, and sweating were absent. She had retention of urine. In the left side and back respiration was absent below the seventh rib; tubular above, with high-pitched, crackling râles. There was no cough. Aspiration in the seventh space found no fluid. Vomiting soon became a prominent symptom, the vomitus containing pus and blood-stained shreds, with a very foul odor, as if an abscess were discharging through the stomach. These evacuations were followed by relief of pain and diminution of fever. Further explorations failed to reach the pus. Shortly, the pain was transferred to the right side in the region of the lower ribs, with tenderness over the liver, which was neither enlarged nor depressed. There was severe pain in the right shoulder. I evacuated several ounces of pus, having the same odor as the vomitus, by incision through the tenth right space, anterior axillary line, and inserted a drainage-tube, which followed the surface of the liver four inches upward and backward. The cavity was washed out with creoline solution, and closed up in ten days. In the meantime, the pain, fever, and vomiting had abated, but the consolidation in the left back persisted. In a few days gastric pain and vomiting returned, but the vomitus had lost its offensive odor. Pus was now found at the seventh left space, axillary line, and the cavity was drained, but the patient soon died from exhaustion. Cough and expectoration had been absent throughout.

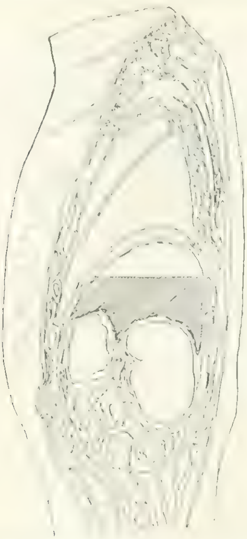
Autopsy: Both pleuræ adherent to chest walls. No fluid in pleural cavities. Lower lobe of left lung solidified and firmly adherent to diaphragm. On section, it presented a granular surface, and was very dense (interstitial pneumonitis). In a space between the liver, spleen, stomach, diaphragm, and chest-wall was an abscess cavity, of three or four ounces capacity, which communicated with the incision in the left side. There was no perforation of the stomach, but in the posterior wall was a recently healed ulcer. Firm adhesions bound the above-mentioned organs together and to the parietes. The diaphragm was not perforated. The abscess in the right side had closed and the sinus could not be found. Liver, kidneys, and heart pale and opaque.



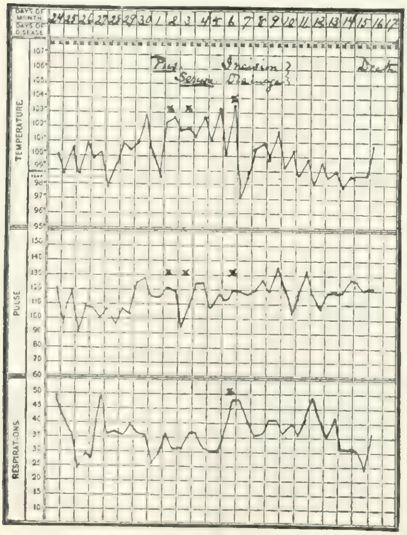
Case II.

Case III (Forster). *Subphrenic abscess from perforating ulcer of the stomach: drainage; death.* — A female, aged thirty-five years, entered the hospital September 24, 1890, in the service of Dr. E. J. Forster, who asked me to see her. She had had dyspnœa and palpitation for a year; abdominal pain and vomiting for a week only. No hæmatemesis. Marked tenderness in the epigastrium, left hypochondrium, and lower part of left chest. Liver one inch lower than normal. In the splenic region flatness extended from the seventh rib to a point midway between the border of the ribs and the umbilicus. Here a tumor was felt which was stationary during deep respiration. Non-tympanitic fulness at epigastrium.

Lungs: Below angle of left scapula, flatness; diminished respiration, voice sounds and fremitus. Succussion splash. No cough. Aspiration at seventh left space, posterior axillary line, found thin, foul pus. The following day, at nearly the same level, twenty-four ounces of clear serum were withdrawn. This seemed to show a serous pleurisy and an abscess cavity below.



Case III. — Vertical section through stomach and spleen, to show relations of air-containing abscess, as in Case III.



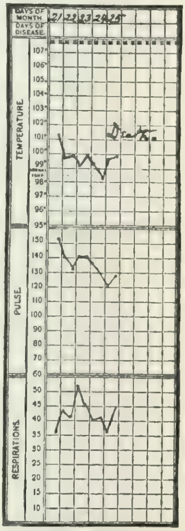
Case III.

A diagnosis of subphrenic abscess from perforating gastric ulcer was made, and operation was advised. This was undertaken by Dr. H. L. Burrell, Dr. D. W. Cheever in consultation, although in the meantime the patient had begun to expectorate a dark, foul, purulent fluid, and was so weak that ether was not administered. About two quarts of sanious pus escaped through a free incision in the ninth space, posterior axillary line. Irrigation with warm boracic acid solution. After four days the fluid came away clear, the cavity had contracted, and the temperature was normal, but there was no gain in the patient's strength, and she died ten days after the operation.

Autopsy: Below the ensiform cartilage a cavity was opened, of large size and lined with pyogenic membrane, bounded by the liver, diaphragm, stomach and adhesions. The left lung was adherent to the chest-wall behind and to the diaphragm, leaving a pus cavity in the lowest part of the pleural sac from which was an opening through the diaphragm into the abscess below. Lower part of lung gangrenous; liver, stomach and spleen firmly adherent and removed together. Upper third of spleen softened and covered with pyogenic membrane.

The stomach showed two ulcers near the pylorus, in the lesser curvature, one through the mucous membrane only; the other, one centimetre in diameter, with smooth, rounded edges, communicating directly with the abscess cavity.

Diagnosis: Ulcer of stomach, with perforation and abscess formation above and below diaphragm.



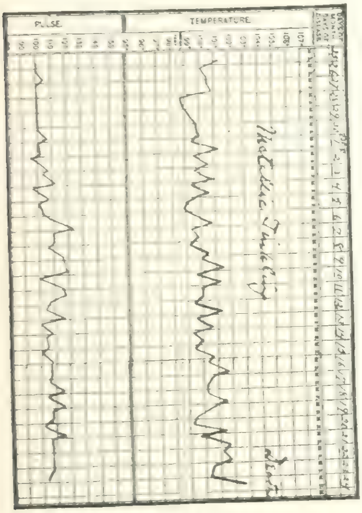
Case IV.

Case IV (Sumner). *Perforating gastric ulcer, with circumscribed peritonitis, which later became general; death.* — A Swedish young woman, aged nineteen years, entered the hospital in the service of Dr. A. M. Sumner, February 21, 1893. For a week she had had gastric pain and nausea. No vomiting nor chills. The day before admission she fell to the floor, writhing in great agony. The pain was referred to the chest, later to the abdomen. She was in collapse on admission, and failed steadily. The abdomen was tense, tender, and tympanitic. She vomited once or twice. It was noted that there was dulness at the bases of both lungs, and a friction rub in the right axillary region. On the left, tympany below the fourth rib in front and absence of respiratory sound. She died in a few days. A general peritonitis was recognized, but the patient's condition was such as to forbid extended examination.

Autopsy: An abstract of part of the autopsy, which was made by Dr. Councilman, is as follows:

The peritoneal cavity contained 1200 cubic centimetres of thin, fetid pus. There was a circumscribed cavity containing pus, shut off from the general cavity, and bounded by the suspensory ligament of the liver, the diaphragm, the upper surface of the left side of the liver, the stomach, and the parietes.

Stomach: The stomach was adherent to the liver. In its anterior wall, just beneath the attachment of the stomach to the liver, and about the middle of the stomach, was a round perforation with smooth edges, one centimetre in diameter. On opening the stomach, there was a round ulcer of the mucous membrane, two and a half centimetres in diameter, corresponding to the external perforation. It was directly in the middle of the stomach. On the posterior wall, at a point exactly corresponding to the ulcer in the anterior wall, was a small ulcer through the mucous membrane only.



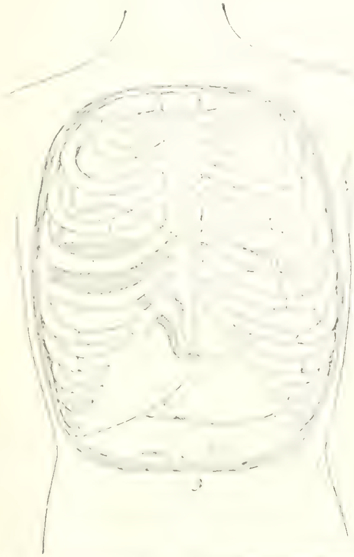
Case V.

Lungs: Congested at bases; no adhesions. Apices indurated (fibrous), with numerous small caseous and calcareous masses and fibrous nodules.

Pleuræ: Diaphragmatic pleura on both sides covered with fibrino-purulent exudation, which extended somewhat over the lateral surface of the left lung; 200 cubic centimetres of turbid serum in each pleural cavity.

Diagnosis: Perforating gastric ulcer causing circumscribed peritonitis with subsequent perforation of general abdominal cavity. Acute pleurisy with exudation due to extension from peritoneum. Old healed tuberculosis at apices.

Case V (Mason). *Perforating duodenal ulcer causing abscess, with signs resembling those of pneumothorax: death; autopsy.* Male; aged fifty-six years, entered the hospital November 25, 1888. After a severe gastric attack fifteen months before, he had recovered so far that he could work, but had never felt well since. A month before admission he was again seized with violent pain in the epigastrium and right side, so severe that ether was required. He had been in constant pain since, with several exacerbations. No vomiting and no blood from bowels at any time. At the epigastrium was a tense bulging, tender and resonant. Over this area metallic tinkling was heard when the patient coughed. The liver was two inches lower than normal. Over the front of the right chest, as low as the seventh rib in the mammary line, the percussion tone was hyper-resonant, the respiration was faint, vocal fremitus diminished, and metallic tinkling was heard. At times the coin sound was elicited, but these phenomena were inconstant, were not observed in the back, and there was no succussion splash. In the lower half of the right back were signs of pleuritic effusion. The heart was displaced an inch and a half to the left. The removal of twenty-four ounces of clear serum by tapping at the fifth right space, posterior axillary line, gave relief to the pain and dyspnœa, and the epigastric bulging and tenderness disappeared temporarily, as well as the metallic tinkling. I had expected to find pus, thinking that a circumscribed pyo-pneumothorax was present, and I was at a loss to explain the signs, as this was the first of these cases which had come under my observation. Later tapping withdrew more serum, but no pus, the presence of which had been expected by Dr. Samuel Delano, who attended the case in its early stages, when the symptoms pointed rather to some abdominal affection. The patient failed gradually, and died in one month. There were no chills at any time. Cough and vomiting were slight. No pus was found in the stools.



Case V. — Air containing abscess above liver, seen communicating with duodenal ulcer; as in Case V.

Autopsy: Right lung adherent to diaphragm. Serous effusion in posterior right pleural cavity. Diaphragm not perforated. No pneumothorax. Lungs healthy. Between the right lobe of the liver at its highest part and the diaphragm was a large, circumscribed abscess, partly filled with pus, which communicated by a long sinus with an open duodenal ulcer one and a half centimetres from the pylorus. This ulcer was circular, one and a half centimetres in diameter, with smooth edges, and from it extended a fistulous tract running on the under surface of the liver, between the gall-bladder and the longitudinal fissure, to the anterior border of the liver, then up the superior surface until it entered the abscess cavity. The gall-bladder, duodenum and liver were adherent, thus shutting off the abscess from the peritoneal cavity.

REMARKS.

These four cases present in typical form the incidents which attend the course of subphrenic abscess when due to perforating ulcer of the stomach or duodenum. Two had a clear history of symptoms below the diaphragm and in two this history was wanting, but the secondary nature of the thoracic complications was suggested in all. In Cases III, IV and V the physical signs which accompany pyo-pneumothorax were present in a greater or less degree. Case V was to me very obscure. The fluid in the pleura, the displacement of the heart, and the metallic sounds were very misleading. The abscess under the arch of the diaphragm, covered above by the adherent lung and behind by a large pleuritic effusion, was out of reach by the ordinary means. It was observed, however, that the respiration and the vocal fremitus were not totally suppressed in front as they would have been in general pneumothorax, but it was only at the autopsy that the air-containing abscess above the liver was recognized as the cause of these peculiar phenomena.

In very few instances does the abscess caused by gastric perforation extend to the right side as in Case II. It is almost always limited by the falciform ligament, but occasionally an abscess, due to gastric ulcer which perforates near the pylorus, may seek its way to the convexity of the right lobe of the liver. I find but one case with perforation of the cardiac end of the stomach and one through the posterior wall in which this course was taken; and but one in which perforating ulcer of the duodenum caused abscess of the *left* side.[13] Eisenlohr[14] mentions the case of a girl in whom, at autopsy, was found a perforating gastric ulcer of the posterior wall, communicating with an abscess above the right lobe of the liver, which during life had given rise to tympany and metallic tinkling below the right scapula.

Therefore, an air-containing abscess under the left ala of the diaphragm almost invariably indicates perforating ulcer of the stomach, usually of the middle portion, in the lesser curvature; and most frequently in the posterior wall. Whereas a similar abscess between the right lobe of the liver and the diaphragm points to perforation of the duodenum or vermiform appendix. I find but two instances in which abscess under the left wing of the diaphragm was traced to an appendicitis.[14]

Empyema and true pneumothorax are not infrequent results of perforation of the diaphragm from below, but the adhesion of the lung to the diaphragm and costal pleura tends to check this complication. The abscess may also be evacuated through the bowels or the bronchi, as in Case III. Serous or sero-purulent pleural effusion, from contiguity with the subphrenic abscess, is more common.

Fenwick,[15] in his interesting clinical lectures at the London Hospital on "Some Obscure Diseases of the Abdomen," mentions eight cases of peri-gastric abscess and five cases of "peri-duodenal" abscess as having occurred at that hospital during the past forty years. He also collected reports of fifty-one peri-gastric abscesses from various sources. Forty-one were caused by gastric ulcer, six by cancer, and four by lesions not connected with the stomach. While gastric ulcer is more common at the pyloric end, the greater fixity of the cardiac extremity is thought by this writer to favor the adhesions which admit of the formation of abscesses, as it is found that these usually communicate with ulcers in the lesser curvature nearer the cardiac orifice. In twelve cases the thorax was invaded, but in others there was empyema without perforation of the diaphragm. In twelve cases the abscess found exit through the parietes, and in three the pericardium was perforated, causing death on the third or fourth day. Pneumo-pericardium may supervene. Two-thirds of the patients were female, and the symptoms were often of many years' duration. Fever and pain were prominent symptoms, but repeated chills were not noticeable. Both true and false pneumothrorax were often recorded. Pus from the abscesses in some instances contained food. In five cases the perforation of the stomach was found to have healed, as in Case II.

At that hospital there were also five cases of "peri-duodenal" abscess during the same long period. Of twenty-four cases which Fenwick had collected, eighteen were caused by perforating ulcer of the duodenum, three by gastric ulcer, five by suppuration from gall-stones which burst into the duodenum, and one by hydatids of the liver. The ulcers were usually near the pylorus; they were seldom in an acute stage. The edges were smooth and thickened. In two cases the pus had made a cavity in the pancreas, and in five suppuration had extended to the connective tissue behind the duodenum. "Peri-duodenal" abscesses were more common in males. Nine out of eleven cases in which the sex was mentioned were in men. In one case the symptoms had existed for eight years, in another seven, in a third three, the ulcers having become quiescent, thus forming adhesions. Pain, radiating from the epigastrium, was the most notable previous symptom, but this was not always urgent. In most cases there had been vomiting of blood or bloody discharge from the bowels. Emaciation and exhaustion were often extreme. Tumor at the epigastrium was the most frequent sign on inspection, usually elastic, often tympanitic, and sometimes giving a metallic tinkling. The line of tympany in certain cases varied with the position.

I have been able to find no instance of recovery from this condition and know of no case in which a perforation of the duodenum has been found healed after death.

(To be continued.)

THE POSTMASTER-GENERAL has announced that disease germs, no matter how securely sealed, are to be classed with unmailable articles.

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[13] Mittheilung. med. Klinik zu Konigsberg, 1888, s. 211.

[14] Berliner klin. Wochenschrift, 1877, s. 539; and November, 1892.

[15] Clinical Lectures on Some Obscure Diseases of the Abdomen, by Samuel Fenwick, M.D., London, 1889.

QUARANTINE *vs.* SANITATION.

BY W. T. SEDGWICK, PH.D.,
Massachusetts Institute of Technology, Boston.

A MEMORANDUM of unusual interest has lately appeared defining the attitude of Great Britain towards quarantine. England has always held a leading position in sanitary affairs, so that her steady refusal to adopt wholesale quarantine at her seaports has naturally excited frequent comment and inquiry. It has seemed very strange to many that the nation having the largest commerce, and therefore most exposed to cholera and other exotic diseases, should be so indifferent, and even opposed, to quarantine. Sanitary officials of the political kind, such as too often exist in this country, have naturally supposed that England's opposition to a mediæval system was based upon merely mercenary motives — these always offering to minds of a certain order an ample explanation of unusual action. Sanitarians, however, have long known that local isolation was the key-note of the English system, together with local sanitation, which should make widespread outbreaks impossible even if exotic diseases like cholera should be imported. To apply a saying of Pettenkofer, the English have regarded unsanitary conditions as a kind of powder for which cholera is a spark: and they have held that it is wiser to keep no powder than to spend their energies in frantic attempts to beat off a spark, which, if it gets in, would be sure to blow them to pieces. Quarantine, and that, too, of a very rigid kind, is employed in England; but it is quarantine of the individual rather than the mass, a system now generally described by the term "isolation of the patient."

The memorandum referred to was compiled at the request of the Foreign Office with a view to its circulation amongst British representatives abroad, and to its serving as an answer to a number of requests made by foreign countries as to the action taken in England for the prevention of the spread of infection. It was prepared by Dr. Thorne Thorne, medical officer to the Local Government Board, and himself a distinguished sanitary authority, in answer to a request of the Foreign Office to be supplied with a statement "setting forth the general nature of the standing precautionary measures adopted in the United Kingdom to prevent the introduction of contagious or infectious diseases." In reply, Dr. Thorne states that even in the case of cholera, the Public Health Department of Great Britain recognizes no system of quarantine. He adds:[1]

> For nearly fifty years past it has been held that reliance on a quarantine system would be, to a large extent, impracticable, and that any attempt to carry it out would be injurious, both by reason of its engendering a false sense of security and by affording a pretext to sanitary authorities for avoiding expenditure of those local funds on which, in this country, we depend alike for effecting large schemes of sanitary improvement and for carrying out our current sanitary administration. Hence, our principal trust has been in securing amendment in every way in the sanitary circumstances under which the population are living; and defence against cholera in this sense has been supplemented by the adoption of a series of cholera regulations which apply to our ports and coast line and which are aimed at preventing the introduction of cholera by means of shipping. . . .
>
> If, as the result of examination, the medical officer of health certifies a ship to be infected with cholera, the ship must be moored at a specified place, and every person on board is required to submit to examination. Every person who, as the result of that examination, is not certified to be suffering either from cholera or from any illness which the medical officer of health suspects may prove to be cholera, is permitted to land immediately on satisfying the medical officer of health as to his name, place of destination, and address at such place. This information is communicated to the sanitary authority at the place of each such person's intended arrival, and it is for that other authority to take measures (which commonly include a visit for some five consecutive days, on the newly-arrived person) such as may be expected to prevent extension of cholera should that disease appear in any one after arrival in their district. Any person on the ship who is certified to be infected with cholera is required to be removed to a hospital provided by the sanitary authority. Should the condition of the patient not permit of this, the ship is detained under the control of the medical officer of health. And any other person certified to be suffering from an illness which it is suspected may prove to be cholera, can similarly be detained for the purposes of diagnosis for a period not exceeding two days. The ship is required to be disinfected and other precautionary measures have to be adopted as regards drinking-water, bilge-water, infected articles, dead bodies, etc., after which she is at once released.
>
> The only instance in which any further measure of restriction can be applied is as to persons on board a ship which, though not infected with cholera, either carries passengers who are in a filthy or otherwise unwholesome condition or has come from a place infected with cholera. If, in any such case, the medical officer of health deems it necessary to intervene, with a view to checking the introduction or spread of cholera, he is required to give a certificate to that effect. When such certificate has been given no person is allowed to leave the ship unless he satisfy the medical officer of health as to his name, place of destination and address at such place, such information to be utilized in the same way as in the case of a ship certified to be infected with cholera. But beyond this there is no right of interference either with the vessel or with those on board.
>
> The English cholera regulations do not profess to be so framed as to prevent all chance of the importation of cholera into the country. They aim at detection and arrest of all actual or suspected cholera at our ports and at giving the earliest possible warning to inland authorities as regards particular persons about to arrive in their respective districts. If, in spite of these measures, the disease should be imported, every sanitary authority has the responsibility for the maintenance of conditions which should enable them to deal with imported cholera in such a way as to prevent its extension.

In a lecture recently delivered at St. Bartholomew's Hospital, Dr. Thorne spoke more informally about the English system substantially as follows:

> Up to a recent date the Continental Powers had relied essentially upon a rigid quarantine system. Quarantine, as applied to the Thames, for example, would mean the detention of all vessels coming from infected ports for a period varying from ten to five days according as the conclusions of the Constantinople Conference or of the Rome Conference were accepted. During that period healthy and sick alike would be prohibited from having any communication with the shore. If, during the quarantine detention a case of cholera occurred on board, the whole of the crew and passengers, together with the ship, would have to go through a second period of detention and so long as any fresh attacks occurred. In the meantime shipping would be accumulating and the result for us would become a mere absurdity. And not only so, but half-a-crown would any night secure a boatman's service for landing on the river banks. In short, the system would only have to be applied to ensure its immediate breakdown.
>
> England decided against quarantine for another reason. If the people in this country were told that a line had been drawn round England to keep out cholera, a death blow to our sanitary administration would at once be dealt. Since they have been told that cholera cannot, with certainty, be kept out of the country, and that they themselves must be prepared to deal with it if it is imported by maintaining their districts in such a sanitary condition that the disease shall not spread if it should make its way into them, eight millions sterling have been spent in sanitary works every year and hundreds of thousands of lives have been saved from typhoid fever and other epidemic diseases. The general mortality has also largely decreased and a Frenchman — an old fellow-student of his — who is now at the head of the public health service in France, has calculated that, according to the estimate of human life by Dr. Farr and other English authorities, taking all the millions we have spent and all the lives that have been saved (I forget the exact sum), we have just got our money back. It might almost seem as if we had done it on purpose. No greater calamity could happen to this country than to apply the system of quarantine. At Dover alone in one week in August, 5,800 people arrived at the port. What would Dover have done had she been obliged to quarantine them? They could not have them in the harbor at night, for they could easily have escaped; they could not have them on land for a similar reason. If they had put them to sea they would probably have been sunk by the first tempestuous wind. The attempt would be perfectly ridiculous and could be attended by nothing but disaster.

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[1] [illegible]

> Quarantine was also a cruel process. That was best exemplified by reference to land quarantine, as, for example, during the Egyptian outbreak of 1883, when villages and communities were surrounded by troops with loaded rifles and bayonets. Any person taking food within the prohibited line would be subject to the same quarantine as the villagers, and it is believed that land quarantine has often destroyed more lives by starvation and misery than would have been sacrificed by cholera. But land quarantine, too, is essentially inefficacious, the line being broken without difficulty, whether in Egypt or elsewhere, by all who can afford to pay their tribute of baksheesh.

The following is especially interesting and suggestive:

> For England the abandonment of quarantine has been an almost unmixed good. The knowledge that no pretence would be made to keep out all chance of cholera in this country, has done more perhaps than anything else to induce our sanitary authorities to spend their money on great works of sanitation and on such improved sanitary administration as is likely to prevent the spread of any imported disease of the type of cholera. Millions have been spent to this end; but, on the other hand, hundreds of thousands of lives have been saved. Even if cholera should once more succeed in passing the barrier of our ports and diffusing itself inland and cause a heavy mortality, we should still be enormously the gainers in point of human life by the system which we have so deliberately adopted; but there is no doubt that our system is rather calculated to prevent than to lead to such a contingency.

No one can successfully deny that these principles embody sound sense as well as a rational application of the best results of modern science to sanitation. In our own country at present there is still altogether too much of leaning upon federal quarantine. This has its place; but our great cities ought to understand that their first and principal business is to set their own houses in order; to see that their own sanitary affairs are in intelligent hands, and, especially, that their public food supplies, such as milk, ice and water are free from all taint of sewage. Efficient local sanitation and isolation — not so much wholesale, by quarantine, but for each particular case — these are the plain teachings of modern science as well as of common-sense.

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TENOTOMY.[1]

BY A. M. PHELPS, M.D., NEW YORK,

Professor of Orthopædic Surgery in the University of New York, the New York Post-Graduate School and Hospital, and the University of Vermont, etc.

The question of tenotomy has been under discussion for more than half a century, and, as yet, seems to be unsettled in the minds of the profession. We have, on one hand, the enthusiastic tenotomist who believes in performing tenotomy under almost all circumstances without rhyme or reason; and on the other, the gentlemen who believe that tenotomy should never be performed, but by mechanical means all the deformities can be overcome. It is needless to say that there is a middle course to pursue which I believe to be correct; and it is more particularly to this that I desire to call your attention this evening.

Muscles are composed of fibrous tissue, between the layers of which are deposited the muscle cells. These muscles end in tendons, which are inserted into the various levers of the body.

When one of these muscles becomes contracted from various causes, a deformity always ensues. This deformity, when of the extremities, is of a very serious character, and the question arises when and how shall we lengthen these tendons? It is true that muscles in which change has not already taken place in their fibrous element, can be lengthened by stretching, whereas muscles in which the fibrous element has become permanently shortened, it is almost an impossibility without a cutting operation to lengthen. Barwell has given to the first class the name of contraction, and to the second, contracture.

To determine just when a muscle is contractured and not contracted is often very difficult. Sayre years ago laid down what he calls a law, and I quote from his paper of October, 1886, printed in the *Virginia Medical Monthly*, the following: "When a contracted tissue is put upon the stretch, and the parts are brought as nearly as possible into their normal position, either by means of the hands or mechanical aids, and then additional pressure is made upon the tissue that is stretched either by making pressure upon the stretched tissue with the fingers or by pinching it between the thumb and fingers, and no pain or voluntary spasm is caused, the tissue thus stretched and handled is simply contracted, and can be elongated by persistent traction and treatment. If, on the contrary, this additional or 'point pressure,' upon an already stretched tissue causes pain and an involuntary contraction or spasm of the muscles of the entire body, the tissue thus stretched has become contractured or changed in its structure, and must be severed before the parts can be brought into their normal relations."

It is undoubtedly true, that putting a contractured muscle upon the stretch and making pressure upon it will produce pain and often spasm; but the same is true of muscles which are not contractured. I have in a long series of cases, particularly in contractions of the adductor muscles in hip-joint disease, demonstrated that spasm and pain under point pressure are present in those muscles which rapidly give way under extension. We are all familiar with the spasm which is elicited in certain forms of spinal disease, producing ankle clonus. If, in this condition, the muscle is put upon the stretch and point pressure made, pain and spasm is elicited, notwithstanding, by a little prolonged force, that foot may be placed in position of extreme flexion upon the leg.

Then we must say that it cannot be a law; that it is good so far as it goes to aid in diagnosis; but I know of no positive way of determining when a muscle is contracted or contractured. I usually place these patients under ether, and with great force, with my hands or with a machine, attempt to place the limb in the normal position. If, when it arrives at a certain point, I find resistance, requiring great force to overcome it, tenotomy is invariably resorted to.

All cases of contraction of fibrous tissue producing deformity I believe are better divided than stretched. It is a well-known fact that when fibrous tissue, whether of the muscle fascia, or ligament, is submitted to prolonged traction, pain, spasm and often convulsions will result, for example, Dupuytren's contraction of the fingers. Then, inasmuch as we have no law upon which we can depend, and the physician must use his own judgment in a given case, I have long been accustomed from experience and from clinical observation to follow out the following rules:

In small children with contractions, I invariably begin a system of manual treatment supplemented by braces usually made of plaster-of-Paris to hold that which I have gained by manipulation. These manipulations are conducted day after day until the child arrives at a certain age — as for instance in club-foot, usually two or three months — when I proceed to divide whatever parts are contracted and overcome the deformity. In cases of paralysis resulting in contractions, I usually operate. I frequently operate upon these cases, even where the deformity can be overcome, because the lengthening of the muscle materially assists the brace in holding the member in the straight position and aids the antagonizing to contract.

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[1] Read before the Orthopædic Section of the New York Academy of Medicine, December 16, 1892.

It is argued by the gentlemen who see nothing beyond steel bars, buckles, straps, ratchets and screws, that to cut a tendon necessarily impairs the usefulness of the muscle, and that non-union of tendons frequently occur; that they overcome these contractions by machines.

To the first I will answer that the cutting of a tendon does not impair the usefulness of the muscle to the same extent that stretching with a traction machine does; the sheath of the muscle making lateral pressure. Cases of club-foot treated by prolonged traction show precisely the same or even more atrophy of the calf, and no better feet than those operated upon.

Some of the gentlemen who were present at the tenth International Congress in Berlin, will remember the excellent cases of cured club-foot by forcible redressment presented by Professor Wolff. In all of those cases, there was the same marked atrophy of the calf that we observe in cases upon which operations have been performed. There is a reason for this. The constant pulling upon a muscle in which the fibrous element has become shortened, produces atrophy of that muscle by making pressure upon the muscle cells by the approximation of the fibrous element of that muscle. When a tendon is cut, the muscle contracts. All of the muscular element is left, the tendon is lengthened, and when the muscle is again restored to its normal tone it is as strong as before cutting. The muscle is stronger than those stretched. As regards the non-union of tendons, I will say that, in my own practice, extending over a great many hundred cases, I have never seen a case of non-union of tendons, and non-union of tendon, in my opinion, will never take place, if the operator exercises proper care and performs his operation according to scientific methods. That non-union of tendon does take place when performed according to the idea of some authors there is no doubt. The adhesions to the sheath and the pulling out of the tendon into a long ribbon-shaped piece, as recorded by Adams, when performed as many English surgeons perform it, is a fact, and this is one of the best reasons why the methods as adopted by them, both of operating and carrying out of the after-treatment, should be abandoned; because when tenotomy and the after-treatment are carried out, as I shall soon describe it, these calamities will never be seen.

This brings us to a consideration of how long is the orthopædist justified in employing mechanical treatment in a given case before resorting to tenotomy. I believe that, if he has control of his patient, he is not justified in carrying on mechanical treatment for the lengthening of muscles, fascia and ligaments in any case for a longer period than a very few weeks unless the progress is very marked. Mechanical treatment covering a period of years, for the purpose of stretching tissue, is certainly at this age of the world entirely unjustifiable. The application of mechanical means for the stretching of fascia in all instances should be abandoned. We have only to look back a few years and in many of the older text-books, and some of the modern, we find machines for curing Dupuytren contraction of the finger, by a traction machine. Those cases all relapsed. The orthopædist was driven into disgrace, and the surgeon reaped the fruits of honest labor performed. And so it is with the fascia of the sole of the foot, the fascia in other portions of the body, the ligamentous contraction producing hammer-toe, and a great many other varieties of contracted fibrous tissue that I might enumerate.

These are clearly cases for the knife. That is not to say by use of instrumental work covering periods of month and years it is not possible to overcome many of these deformities; but unless careful bracing is continued after the stretching has been done, and even then the cases will surely relapse, and they usually do relapse, as is evidenced in the contraction of the finger that I have just mentioned. We have emerged from the cloud of septic ignorance into the bright sunshine of antiseptic progress, and to-day the objections which were urged against the operative work no longer hold good.

How shall these operations be performed? There are three methods now of lengthening tendons and fibrous tissue, namely, subcutaneous work, open incision, rupturing by force.

We will first consider subcutaneous tenotomy. Subcutaneous tenotomy should be performed upon all tissues which can be easily reached and divided with a knife without danger of cutting important blood-vessels or nerves. Nearly all of the tendons of the extremities can be with safety cut subcutaneously, and certainly one would never think of performing a large operation when a smaller one would do. And then again, when an open operation is performed, adhesions, sepsis and wound infection are more likely to occur than in subcutaneous work. Tendons passing through fibrous canals, as for instance those of the finger, should not be operated upon in the fibrous sheath, because adhesions usually follow. There is, however, at the present time, but little danger from wound infection, and I have no serious objection to an open incision being performed. It should be, however, resorted to only where there is danger of cutting important blood-vessels or for other reasons than to simply divide a tendon or nerves. The tendo Achillis, I believe, should always be divided subcutaneously. Dr. Wilson, of Philadelphia, has done some excellent work upon the tendon by open incision. He resorted to a method which I have resorted to a great many times — which I will allude to later — of splitting the tendon, cutting each half off in opposite directions, and suturing it. Keene, I believe, is given credit as being the author of the operation. Lange claims priority, and so do others. I will here add that in 1888 before the class of the Post-Graduate School, Dr. Abbe being present, and at his suggestion, I performed the same operation upon the biceps tendon of the forearm, through an open wound, lengthening the tendon several inches. The result was perfect. This, I think, antedates anything that has been published upon the subject.

I now perform upon the tendo Achillis and the biceps tendon the same operation, only I perform it subcutaneously, introducing the knife over the tendon, splitting it and cutting it out both ways, allowing it to slip up and lap. In this way I have lengthened the tendon two inches and a half. The split in the tendon in that case was made one and one-half inches. The ends remained in contact.

The sterno-mastoid muscle should always be divided by an open incision along the clavicle. The iliacus internus and psoas muscles should always be divided at their attachment to the lesser trochanter by an open incision beginning at the greater trochanter and extending down the leg four inches. With a periostotome one can work over the femur, hugging it closely, and with safety detach the tendon from its attachment. I did this once subcutaneously, and ligated the femoral about ten minutes after. I would do open incision to lengthen the biceps of the arm, or split the tendon subcutaneously. Open incision should be performed when the ham-string tendons and all tissues are shortened. This is a favorite operation of Schede's, of Hamburg. I have performed the operation many times, and now have a case in Charity Hospital which I will hope to have the honor of presenting to you at some future meeting.

I mention these three because they are the tendons with which we have more frequently to do. The fasiculus given off from the tendon of the ring finger should be removed with an open wound to make the hand more useful for piano playing. Open incision when performed on the sole of the foot for the relief of talipes varo equinus is not performed for the exclusive purpose of seeing just what is being cut, but to lengthen all the shortened tissues which hold the foot in the abnormal position.

RUPTURING OF TISSUE BY GREAT FORCE.

This is, in the treatment of club-foot, usually employed together with tenotomy of important tendons; ligaments and fascia at the same time being ruptured by force. Under other circumstances I do not believe that it should be substituted for either subcutaneous tenotomy or open incision.

After the contracted parts have been divided by one of these three methods, how will the limb be dressed? What will be the after-treatment? The teaching, in vogue in England by many as well as in this country, is to divide these parts and leave the limb in the deformed position, allowing union to take place between the tissues and then gradually stretch them to place. This was frequently followed by non-union of tendons, by adhesions which ruined the future usefulness of the member and brought the operation into disrepute, and it led many of the orthopædists of England and America to employ instrumental means and discard the knife entirely. To this most unscientific procedure Sayre struck the death-blow in a very able article, in which he urged, and gave his own experience, the immediate correction of the deformity, allowing the severed ends of the tendon to separate. This procedure, in my opinion is scientific, and during the many years that I have employed it in hundreds of tenotomies, I have yet to see the first case of non-union or material impairment of the functions of the tendon.

Over-correction of any deformity should be practised. I have seen tendons separate six inches, and still a perfect reproduction was the result.

When open incision has been performed, the same methods of dressing and after-treatment should be followed. The wound should be, if possible, closed and dressed antiseptically, the parts should be kept at perfect rest for at least six weeks after the operation, after which, if deemed advisable, suitable braces can be applied.

To illustrate the difference of opinion which exists among various orthopædists, I desire to present to you a case this evening, together with its history, of a very interesting deformity of the feet. This boy is thirteen years of age, born in London, was a patient of Mr. Adams in London, referred by him to Dr. L. A. Sayre in this city. He was treated under Dr. Sayre's direction for one year. He was suffering from partial paralysis which had produced a shortening of the tendo Achillis, which drew up the heels. As he walked, the tendency was to throw his foot inward and I have no doubt that, before many years, he would have developed a double talipes varo equinus. Mr. Adams when he referred him to Dr. Sayre, placed a very severe injunction upon the mother to allow no American to operate upon his tendons, else the feet would surely be ruined.

After he had been with Dr. Sayre for one year with no improvement, the mother then consulted a well-known conservative orthopædist of this city, who advised her to do nothing, but to build up his physical condition. She then consulted a third, Dr. Shaffer, who informed her that by applying interrupted traction with his machine, for one or two years, he thought he could cure the deformity. The mother consulted me on September 23d, and I informed her that I believed that tenotomy of the tendo Achillis should be performed (the feet could not be placed at a right angle with force). On September 25th, assisted by Dr. Plympton, Dr. Goodwin and Dr. Steele, of St. Louis, I performed the operation and immediately placed the feet in the super-corrected position. They were kept in this position for six weeks and were again put in plaster for two or three weeks more. He was allowed to walk with the plaster-of-Paris until the braces were adjusted. The tendons were lengthened two and one-half inches, and upon examination, I think it will be difficult to determine where the new tendon begins and the old ends.

I quote this case to illustrate the difference of opinion existing in the orthopædic profession.

An interesting case came to my office, aged fifty three, C. J. Cole, of Greenwich, Conn. It was a case of double talipes varo equinus, operated upon when he was twenty-four months old, by Dr. Hubert, of Utica, N. Y.; subcutaneous tenotomy of both Achillis was performed. After-treatment was carried out by bandages. I found, fifty-one and a half years after the operation, the following condition: Feet perfectly staight, calves well developed, tendons firmly united and much enlarged at point of union. There was an osseous deposit in this new material. He went through the war, had no fatigue, never felt any weakness in ankle or calf. It was a reproduction of one and one-half inches of tendon. This is interesting because it is almost one of the first cases of tenotomy ever performed.

This brings us to the consideration of the subject of reproduction of tendons. Gluck, in 1884, performed some very interesting experiments. Among others, was the reproduction of tendons by the introduction of catgut, in the track of the tendon. He also introduced tendons from the lower animals and reports excellent results.

I wish to report a case, which I presented to the

Surgical Section of the Academy of Medicine in 1891, April meeting. The record book of that meeting gives a correct report of the case, whereas the report as made in the *Medical Record* of August 8, 1891, makes no notice of the points which I now will present to you. The man had had an incision through the wrist which had suppurated, cutting the median nerve and all the tendons of the wrist; sloughing had destroyed many of the tendons for a distance of six and eight inches. The tendons of the ring finger and the little finger, were uninjured. The tendon of the index finger and of the thumb was destroyed for a distance of six in one, and eight inches in the other.

At Charity Hospital in February, 1891, I performed the following operation: After removing all cicatricial tissue, dissecting out and suturing the nerve, I found the condition as described above. I united the muscle which went to the middle finger to the tendons of the ring and little finger, and united the distal end of the tendon of the middle finger to that of the ring finger, I then, with catgut, sewed in between the ends of the tendon of the index finger, a distance of eight inches, four or five strands. I did the same thing with the thumb, a distance of six inches. The hand was placed in the supra-flex position, after the ulnar nerve had been united and the wound closed, and left it for three weeks. Within one week sensation had returned to the paralyzed hand and at the end of three weeks the man was able to move all of his fingers. When the case was presented at the Academy of Medicine, he was capable of moving the index finger and thumb. When he was discharged from the hospital, he had very good motion of all of the fingers, excepting the middle, ring and little finger, they moving together. The index finger and thumb moved separately. Here was an instance of a reproduction of eight inches of tendon of the index finger and six of the thumb, by means of catgut. In this case an anastomosis was established between muscle which had no tendon or was useless, to tendons which communicated with other fingers.

It is quite practical, where tendons are lost, to introduce strands of catgut, or tendons from the lower animals and reproduce them.

THE QUESTION OF ANASTOMOSIS OF TENDONS.

Where the power of one tendon is lost, it is quite practical to attach to that tendon another tendon of a muscle which is not paralyzed; or, as in the case already quoted, where tendons are, to a considerable extent, destroyed, it is better to unite them and the muscle to a tendon lying contiguous. To illustrate: April 21st, this year, I repeated an operation which I had performed many times for other conditions, but for the first time in a talipes calcaneus. Willett's operation has not proven all that was hoped for it. Judson has offered a very fair and just criticism of Willett's operation. Therefore, I decided in this case to perform an original operation. There was total paralysis of the gastrocnemius and soleus. I made an incision down upon the tendon, divided it, severed the tendon, stitched it together. The long flexes of the toe were not paralyzed. These were divided at the inner malleolus, the distal ends firmly stitched to the periosteum, and the proximal ends to the tendo Achillis, hoping that these muscles would take the place of the paralyzed gastrocnemius and soleus. The foot was dressed at right angles, redressed at the end of three weeks, redressed again at the end of four weeks. Now he comes to us to-night, the final dressing to be removed and the shoes adjusted; and I present him for your examination. We must bear in mind that this foot has been fixed almost three months in plaster dressing, and it will not be expected that he will have much muscular control over it. The splint which I shall adjust now is Judson's, which he will wear for six months or a year, after which I will either present him here to you or report on the case. Electricity and massage will be employed.

Quite recently, Dr. B. F. Parish, reported to the *New York Medical Journal*, October 8, 1892, a similar case upon which he operated in May 25, 1892, for the relief of flat-foot by grafting to the anterior tibial tendon some of the long extensors, hoping thereby to hold up the arch of the foot. What the ultimate result will be can only be determined by time. Believing that flat-foot is not produced by paralysis of the anterior tibial tendon, I cannot see that much will be gained by this operation. He claims priority of grafting a muscle paralyzed or useless to one vital or useful. My wrist case was performed in Charity Hospital in February, reported to the Academy in April, and published soon after in their reports. The French and Germans had already grafted tendon to tendon in similar cases in 1874 and 1876, so there is nothing really new under the sun.

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Clinical Department.

A USEFUL METHOD OF DRAINAGE IN SUPRAPUBIC CYSTOTOMY.

BY FARRAR COBB, A.M., M.D.,
Surgical House-Officer at the Massachusetts General Hospital.

The most difficult thing in suprapubic operations on the bladder where constant drainage must be kept up is to drain off the urine by siphonage with any degree of success at all. In the majority of cases the lining membrane of the bladder is in a state of chronic inflammation, suturing is contraindicated, and the wound in the bladder and abdominal wall must be left wide open.

In a recent case under my care, in the service of Dr. H. H. A. Beach, after trying several methods of drainage and finding that all of them sooner or later flooded the patient and bed and kept the wound filled with a pool of urine the following method was devised, and has worked admirably, draining the bladder perfectly and keeping the patient dry:

An ordinary glass drainage-tube rounded at the lower end with a collar at the top, such as used in abdominal wounds, was passed into the bladder and into this was pushed for its whole length a wick or tight roll of iodoform gauze while the free end of this about three feet long was drawn through a flexible rubber-tube and led over the side of the bed into a bottle, thus establishing capillary drainage through a set of tubes. It was found that no gauze could be used to pack the wound around the tube because of its capillary action defeating somewhat the perfect work of the gauze in the tubes. The recti muscles hold the glass-tube firmly enough and the wound is best packed with absorbent cotton thoroughly impregnated with oxide of zinc ointment which acts as an efficient dam and antiseptic dressing and prevents any irritation of the skin. Over this dressing and around the juncture of the rubber and glass tubes a light dressing of gauze or cotton can be loosely fastened. In this case it kept dry for twelve hours at a time. If the bladder was sucked dry after each dressing with the ordinary suction apparatus in the glass tube and then the combination gauze and tubular drainage used it was found that the gauze drained away the urine as fast as it was secreted. With this method it was found necessary to dress the case only once or twice a day and yet the patient kept perfectly dry. The gauze wick in the tubes was changed only once in twenty-four hours. It was found that this method did away with the annoying pain and tenesmus which before was obstinate.

No mention of this use of gauze drainage has been found by me and it has proved of so great value in securing almost perfect drainge in these hitherto very troublesome cases that I have been led to thus briefly describe it.

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New Instruments.

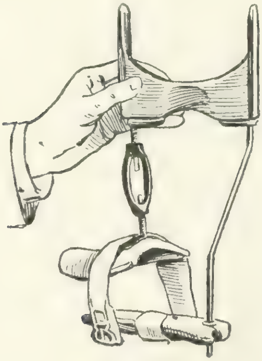
APPARATUS FOR FRACTURE OF THE HUMERUS THROUGH OR NEAR THE DELTOID INSERTION.

BY Z. BOYLSTON ADAMS, M.D., M.M.S.S., FRAMINGHAM, MASS.

APPLICATION.

(1) The arm is bent at a right angle and supported by a fillet at the wrist.

(2) The crutch is pressed firmly into the axilla, the lower splint put under the forearm, while the brass rod is adjusted behind the elbow and fastened by nuts to the splint.



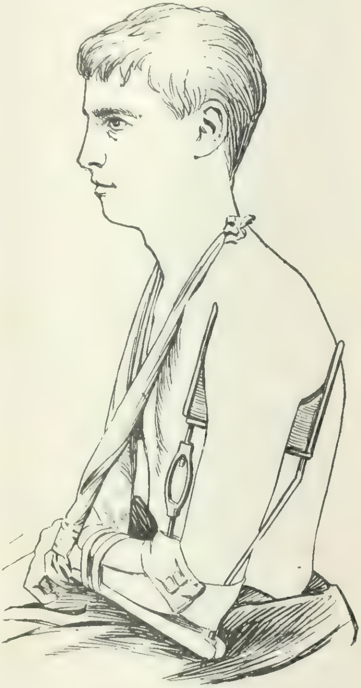
(3) The upper splint is then placed over the arm as near the elbow as possible, and the double screw is turned until firm and equal pressure is made upon the extremities of the crutch.

(4) Straps are now put on to hold the two splints in connection upon the forearm, and the broad piece of webbing buckled around the elbow keeps all in place.

EXPLANATION.

The fleshy tendons of the pectoralis muscle in front and of the latissimus dorsi behind, are shortened by the pressure of the crutch in the axilla. The crutch is of peculiar shape adapted to the object. By this pressure upon the borders of the axilla, the deltoid is completely *antagonized*, and the upper fragment drawn inwards.

The extension applied between the elbow and forearm below and the crutch -above, straightens out the *biceps* (especially the long head), and the *triceps*, which being closely related to the bone, back and front, are found to fix the fragments in their true relation.



No coaptation splints are required, the screw and nuts permitting exact adjustment of pressure and bringing the bone into line.

EFFECT.

There is no discomfort; all pain and swelling disappear; and at any time the surgeon can put his fingers on the broken bone. The result is found to be all that could be wished.

This apparatus was designed and used for the left arm of a man of five feet six inches. It can be easily reversed for the right arm, and allows some lengthening for a larger subject.

A New Hospital for New York. — A new hospital to be known as Grace Hospital will be begun next fall in New York. There will be a main hospital and three independent buildings for old men, old women and children.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

EIGHTH ANNUAL MEETING, AT WASHINGTON, D. C., MAY 30, 31 AND JUNE 1, 1893.

Continued from No. 7, p. 172.

FIRST DAY. — AFTERNOON SESSION.

ON A SIMPLE CONTINUED FEVER,

by **Dr. G. Baumgarten**, St. Louis, Mo.

In St. Louis and vicinity, and without doubt in other localities of the Mississippi Valley — during the past fifteen years, and perhaps longer — cases of continued fever have been met with which are often interpreted as typhoid fever, and by many called typho-malarial, (though differing *toto cælo* from Woodward's "typho-malarial") — a fever which is characterized by high temperature, even hyper-pyrexia, a sudden onset rather than a gradual rise, a fever curve of greater irregularity than a typical typhoid, a duration of from two and one-half to five weeks, sometimes terminating by crisis instead of lysis, a total absence of local symptoms or signs of localization, and such general symptoms only as may fairly be ascribed to the high temperature itself. It has no relation whatever with malaria, and in my estimation it differs so widely from typhoid fever that it cannot be classified with the latter without doing violence to the classical definition of typhoid. It is not, in its classical features, a walking typhoid, nor an abortive form, and its persistent, and often extreme, high temperatures, preclude the idea of a *mild* form.

In the absence of all localization, and ignorance of the (evidently infectious) pathogenic cause, I am tempted to adhere to the provisional name by which I have privately called it these fifteen years, a *febris continua simplex*. In 1888 my colleague, Dr. P. G. Robinson, presented to the Association a paper on the same disease, observed in the same locality, and I have little doubt that it has been alluded to in the paper of Dr. I. E. Atkinson, of Baltimore, in 1887.

During the past autumn, St. Louis was visited by an epidemic of typhoid fever, chiefly in the months of October, November and December. Both before and during this period, there was also an unusual increase in the number of cases of the continued fever in question. It then became the subject of more than ordinary observation and comment by many physicians, and the incisive points of difference between the two classes of cases were generally recognized.

Dr. I. E. Atkinson believed that the cases recorded by Dr. Baumgarten were varieties of typhoid fever. Typhoid is the almost universal continued fever; and most of the continued fevers that are from time to time written about are sooner or later relegated to the class of typhoid fever. Mountain fevers, mucous fevers, gastric fevers, nervous fevers and typho-malarial fever have all become classed as typhoid fever. Typhoid, especially in children, is often atypical. It is a common thing for all of the characteristic symptoms of typhoid, except fever, to be absent in children. We often see cases running quite different courses which are due to the same origin. We need a good deal more evidence to make us accept the existence of another independent continued fever.

Dr. Baumgarten thought it was reasonable to suppose that there were continued fevers developed by the specific typhoid germ, and others, running a similar course (as far as the fever was concerned) that were not so caused. We certainly have no proof that the cases described are cases of typhoid fever. It would not be surprising if bacteriological investigation should prove these cases to be identical as to their origin with typhoid fever, but still the desire to separate them as a clinical form would not be amiss in view of the bearing upon treatment.

CREASOTE IN THE TREATMENT OF TUBERCULOSIS,

by **James T. Whittaker**, Cincinnati.

Creasote has no real influence upon the fever of phthisis. The writer has tested this fact in every way. Though the patient be saturated with the drug by every avenue — by the stomach, by the lungs, by the bowels, by the skin, by all these methods at once — creasote does not control the fever.

Creasote acts on the stomach. It excites the appetite and lessens the distress of indigestion. Most patients improve decidedly for a time under the immediate change of nutrition.

In the study of the action of a remedy in tuberculosis we must have more definite knowledge of the nature of tuberculosis and what it is that is to be accomplished. In this regard there is now more definite knowledge. It is now known that the whole character of consumption, that is, tuberculosis pulmonum, was not determined by the discovery of the bacillus tuberculosis. It is now known that tuberculosis of the lung is at least not a pure process. Other organisms are associated with the tubercle bacillus in tuberculosis pulmonum, and to them are due some of the symptoms, especially the hectic fever. Streptococci are the associated organisms in the majority of cases. Creasote has probably no effect upon the streptococcus infection, because it shows no real effect upon the liver. It inhibits the growth, or actually destroys some of the organisms which induce fermentation in the stomach and intestine without interfering with the actual processes of digestion, and thus contributes to the cure of consumption — as does arsenic, hydrochloric acid, etc. — through the avenue of nutrition. Considered from a clinical standpoint, creasote holds its place. It is an easy routine practice and is perfectly harmless in any dose. In Dr. Whittaker's wards at the Good Samaritan Hospital all the tuberculous patients are put upon creasote immediately upon entry. Five drops of a mixture of creasote and tincture of nux vomica (or, where strychnine is contraindicated, tincture of gentian) are given in a teaspoonful of whiskey and a tablespoonful of water three times a day after meals. The dose is increased by one drop daily up to ten, whereupon additional doses are given at 10 A. M., 4 P. M. and at bedtime. The body shows signs of saturation at sixty drops per day. All of his cases in non-febrile periods are treated with tuberculin, which remains the only specific remedy for pure tuberculosis, but which has no effect (or only a bad effect) upon septicæmia.

Dr. Wood thought that in the rage of bacteriological study physicians often forgot that they ought to treat the individual sometimes and not the bacteria. Some years ago every phthisical patient was dosed with sulphuretted hydrogen. The results were, at first, said to be very extraordinary, but in a few months all the syringes and sulphuretted hydrogen squirts in general were relegated to the past. Creasote seems to be running through very much the same history. Both sulphuretted hydrogen and creasote are valuable remedies, but neither of them acts in any way specifically upon the bacillus; they do good by their action on the individual whois the unfortunate host of the parasite.

Dr. Trudeau, of Saranac Lake, said that the tubercle bacillus bore cheerfully a good deal of medication that was disastrous to its host. In his experience in animal tuberculosis, no matter how large the dose of creasote injected, the disease developed regularly in its natural course. It seemed to him that in phthisis it did good by improving the condition of the stomach and intestinal canal, and he had not quite discontinued its use. Like arsenic, if it improved the appetite it was well to keep it up, but if it disagreed with the stomach it should be omitted. It was in no sense a specific.

THE INTESTINAL ORIGIN OF CHLOROSIS,

by F. Forchheimer, Cincinnati.

The conclusions of this paper: (1) Chlorosis is due to oligochromæmia. (2) Chlorosis is the result of faulty hæmopoiesis. (3) In chlorosis the fault in hæmopoiesis lies in diminished hæmoglobin production. (4) Hæmoglobin is principally formed in the intestine, proven (*a*) by direct investigation upon lower animals, and (*b*) indirect observation upon the human being. (5) Hæmoglobin formation can be increased by the introduction into the intestine of agents not containing iron, but preventing putrefaction. (6) Chlorosis is due to a prevention of hæmoglobin formation, by destructive agents acting upon the precursor of hæmoglobin in the intestine.

With the object of determining whether hæmoglobin was formed in the intestine, Dr. Forchheimer conducted a series of experiments upon rabbits with the following results: During full intestinal digestion the animals were put upon the rabbit-holder, the abdominal cavity was opened, and blood was examined from the terminal branch of the mesenteric artery and its accompanying beginning of the mesenteric vein. Care was taken to open the blood-vessels as near as possible to the entrance or exit, so that arterial blood was examined immediately before it went into the capillaries of the intestine and venous blood directly as it came from them. Forty observations gave the following average:

In the artery: red corpuscles, 5,362,000; hæmoglobin, $78\frac{3}{4}$ per cent.
In the vein: red corpuscles, 4,510,000; hæmoglobin, $78\frac{3}{4}$ per cent.

The deductions derived from this were: The number of red corpuscles is diminished in the veins, while the quantity of hæmoglobin remains the same; therefore hæmoglobin is absolutely increased in the vein, and each red corpuscle carries more hæmoglobin in the vein than in the artery. The dilution of the venous blood, during digestion must be taken into consideration. This would probably also account for the diminution of red corpuscles. If the blood contains $78\frac{3}{4}$ per cent. hæmoglobin before going through the capillary circulation, takes up fluid there, and comes into the veins containing $78\frac{3}{4}$ per cent., it certainly follows that the hæmoglobin is increased in the veins. Each red corpuscle carries about 18 per cent. more of hæmoglobin in the veins than in the artery.

The results obtained in the treatment of 11 cases of chlorosis, all females, varying in age from fifteen to thirty-five years, by the use of salol and hydronaphthol were as follows: There was steady increase in hæmoglobin; the smallest amount gained in one week was 5 per cent., the greatest 20 per cent, With the rise in hæmoglobin all the patients began to improve. The nearer 80 per cent. the more the symptoms began to disappear; and from ordinary examination, without blood test, most of the patients would have been willing to have been discharged as cured. Hydronaphthol seemed more efficacious than salol, the results being more quickly obtained, and the rise more rapid.

Dr. J. P. C. Griffith, of Philadelphia, considered Dr. Forchheimer's contribution one of great value. He has shown chlorosis to be distinctly an intestinal disease, analogous to pernicious anæmia but distinctly different from it.

Dr. H. C. Wood considered Dr. Forchheimer's paper one of the most interesting that he had heard read before the Society. In view of the fact that the test relied upon for hæmoglobin was a color test, he desired to know whether any control experiments had been made between arterial blood taken from the finger and venous blood taken from the finger, to see if there was not an apparent rise in the hæmoglobin in the simple transversion of capillary into venous blood.

Dr. Forchheimer, replying to Dr. Wood, said that all possible precautions had been taken in the examination of the blood. Both arterial and venous blood had been examined, and the estimations were the results of many examinations.

EXPERIMENTAL OBSERVATIONS CONCERNING THE NATURE OF CHOREA,

by Dr. H. C. Wood, Philadelphia.

Dr. Wood's paper covered the following points:

Function of inhibition everywhere an important one in the animal system.

The spinal cord no exception to this.

The various choreic movements may originate either in the brain or in the spinal cord.

The spinal choreic movements largely the result of the loss of inhibition.

The St. Vitus Dance of children, the whole nervous system evidently involved.

The reflex phenomena of St. Vitus Dance are in accord with the theory that spinal inhibiton is depressed. Difficulty of explanation under other theories.

The action in chorea of certain drugs which have long been believed to affect spinal inhibition in accordance with the theory.

Relations of quinine to the theory, and the probability of its value as a practical medicament. Practical studies of the quinine treatment in animals and in man.

Dr. Wood's experiments with quinine cover two series of cases. The first series were upon chorea in the dog. Case 1: Setter; chorea seven months' standing; quinine; immediate great improvement and recovery in a month. Case 2: Pointer; chorea of long standing; quinine, twenty-four grains a day at first; no improvement; increased to forty grains daily, followed by complete recovery in two weeks. Case 3: Violent chorea; dog could not stand; quinine, sixteen grains daily; completely cured in twenty-five days. Case 4: Chorea improved on quinine treatment, but dog died. Case 5: Improvement under quinine, but dog died. Case 6: Specially violent chorea; quinine; cured. Canine chorea is a very intractable disorder, and previous to the introduction of the quinine treatment, a number of cases treated the past year gave not one favorable result.

The second series of cases were cases of chorea in children. The first two cases were treated in the Hospital of the University of Pennsylvania. Case 1. M. D., seven years. Chorea so bad she could not feed herself at all. February 3d, quinine treatment begun. In a week the child could feed herself. Improved steadily, and was discharged March 28th, entirely well. No other treatment except cod liver oil. Case 2. Jessie ——, ten years. Entered hospital February 3d, with chorea of four years' standing. Could not feed herself. Put on quinine. Could feed herself in a week, and has steadily improved since. Of nine cases treated in the University of Pennsylvania Dispensary by quinine, only two failed to improve; and of these cases one failed to improve upon arsenical treatment, but the second was relieved by Fowler's solution.

The result of clinical studies seemed highly favorable to the use of large doses of quinine in the treatment of chorea. A remarkable fact in the cases most carefully watched, was the complete absence of apparent physiological action. A child of ten years of age took 1,200 grains of quinine in the course of seven weeks, having part of the time taken day after day twenty-four grains a day with no physiological symptoms, only a steady growth in the general nutrition.

Dr. Whittaker thought Dr. Wood's results were extremely interesting, but that the investigations were defective in one regard — in that there was no examination made of the blood of the choreic dogs. Chorea is sometimes a manifestation of malaria, and it would be very interesting to know if malaria in the dog manifested itself as chorea.

Dr. Wm. H. Welch replied to Dr. Whittaker's observations, that Dr. Berkley and himself had made a careful study of the pathological anatomy of chorea in the dog, and examined the blood in one case. A protozoic organism was found in the intestines; but cover-slip preparations did not show the presence of the malarial or other organism in the blood.

Dr. William Osler did not consider Dr. Wood's results to be in any way extraordinary. To treat a disease like chorea with a drug which does good only within ten days or two weeks is not very satisfactory, and not much better than arsenic and other remedies.

SUBPHRENIC ABSCESS,[1]

by **Dr. A. L. Mason**, of Boston.

Dr. S. J. Meltzer, of New York, read a paper on the same subject.

In the differential diagnosis between subphrenic abscess and empyema we cannot rely exclusively on physical signs, neither altogether upon the etiology. By the physical signs, we cannot decide whether the fluid is located above or below the diaphragm. The objections to the unexceptional reliance upon the etiology are that there are a few cases of subphrenic abscess the primary cause of which is located in the cavity above the diaphragm, and there are cases of intrapleural effusion with an exclusive and pronounced abdominal history. A case in point was a child of twenty-six months which after an attack of pneumonia had what was supposed to be an empyema. Upon opening the pleural cavity very little pus was found but the diaphragm was found to bulge up into the thoracic cavity, and through it distinct fluctuation was discovered. The abscess was evacuated and drained, and the child made a complete recovery. This subphrenic abscess following pneumonia, was doubtless caused by the preceding pneumonia. Another similar case has been reported by Gæhde. The micro-organisms of these abscesses are probably the same that usually are found in meta-pneumonic empyemata, namely, the pneumococcus lanceolatus or the streptococcus pyogenes. We have to assume that they passed directly from the lesion in the lung into the space below the diaphragm into the lymph channels. Then there is a class of cases of empyema succeeding to pronounced abdominal symptoms: (1) those originating from gastric ulcer perforating directly into the pleural cavity; (2) those which accompany or follow several acute abdominal troubles, like typhoid fever, peritonitis, etc.

Dr. Wm. Osler briefly alluded to cases of subphrenic abscess which had come under his observation. The first case gave a history of dysentery. There were symptoms of abscess of the liver; diagnosis of pyo-pneumothorax subphrenicus; operation; recovery. The probable source of this abscess was in the appendix as at the operation Dr. Halsted was able to pass his finger far down into the flank reaching quite to the crest of the ilium. A second case was one of pyelonephritis, tuberculous colitis, with perforation of the splenic flexure of the colon and a formation of a perinephritic air-containing abscess. Incision and drainage, pulmonary tuberculosis and death. There was a remarkable air-containing tumor over the right kidney opposite the tenth, eleventh, and twelfth ribs, particularly interesting from the fact that it was resonant when the patient was on his abdomen but dull when he turned on his side. The third case was an instance of subphrenic abscess following an empyema. There had been an injury to the arm and back, amputation of the arm, erysipelas three weeks after the accident, signs of inflammation at the left base, development of pyo-pneumothorax, expectoration of fetid pus, septic fever, asthenia, and death. The sequence of events in this case was, wound of the kidney, subphrenic abscess, empyema, perforation of diaphragm and lungs, with discharge of pus. Two other cases of subphrenic abscess were operated upon by Dr. Halsted both making satisfactory recovery. The diagnosis in one case was that of liver abscess and the diagnosis in the other case was posterior empyema and it was not until the opening was made in the chest that it was discovered that the pus was subdiaphragmatic.

Dr. W. H. Welch thought that the withdrawal of a portion of the pus with a hypodermic syringe, and finding in it a mixture of bacteria, and particularly the presence of the bacillus coli communis, would make it strongly suspicious that the abscess communicated with the cavity of the alimentary canal. The presence of the colon bacillus in pleural effusions is extremely rare. He had never seen a case like that reported by Dr. Meltzer. He regarded Dr. Meltzer's explanation as the most plausible one. He did not think it necessary to assume that the direction of the lymph current was a decisive factor, for micro-organisms could travel with or against the current of the lymph channel. Peritonitis is widely recognized as a possible complication of pneumonia. The micro-organism is capable of setting up inflammation anywhere.

Dr. R. H. Fitz considered the term "subphrenic abscess" a clumsy one and thought it would be much better to consider this class of cases under the head of "subphrenic peritonitis," because the latter designates the anatomical condition present and includes cases where one has to deal with pus and also cases of serous peritonitis. In thus emphasizing the peritonitic nature of the processes we are led more directly to the etiology and also more directly to what is perhaps the best region for the treatment of this class of cases. When the thoracic element is considered too particularly the tendency is to operate through the thoracic walls, whereas the beneficial results which often occur are favored by an operation considerably below.

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[1] See page [illegible] of the Journal.

(To be continued.)

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Recent Literature.

A Text-Book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M.D., LL.D., etc. In two volumes, illustrated. Vol. I. Philadelphia: W. B. Saunders. 1893.

This text-book of the Theory and Practice of Medicine is offered to the medical profession and the large body of American medical students by some of the teachers of practical medicine in leading schools of this country; and the editor claims that it may be said to represent truly the best teaching of the science and art of medicine at the present time in this country. The names of the editor and of the other contributors suggest a fair basis for this claim, and an examination of the various articles in detail indicates that they have for the most part contributed the good work which might be expected from them.

The contributors to this first volume are Drs. J. S. Billings, William Pepper, J. T. Whittaker, W. Gilman Thompson, H. C. Wood and William Osler. The paper, the type, the illustrations and the general make-up of the book — a royal octavo of 900 pages — are excellent, and justify the choice of the publisher.

Elementary Physiology for Students. By Alfred T. Schofield, M.D., M.R.C.S., etc. Small 8vo, pp. 372. Philadelphia: Lea Brothers & Co. 1892.

This is a small book, with many of the vices of its class, and few redeeming virtues to make it in any way better than its numerous fellows. Among its virtues must be reckoned the exceedingly well printed illustrations, gathered for the most part from standard authorities and generally familiar acquaintances of long standing. The best of the set is made up of two handsomely colored pages of microscopic specimens, the worst is a picture of the Anglican form of a "Davidson" syringe, illustrating action of heart and valves. The text is largely collated without very careful consideration and almost exclusively from English writers or translations; it is not always complete or fresh (for example, liver, p. 98), and is sometimes very inexact, as, for example, in the account of the Young-Helmboltz theory of color perception, and especially in the statement of Hering's views.

Electro-Therapeutics of Neurasthenia. By W. F. Robinson, M.D. 16mo., pp. x, 72. Detroit: George S. Davis. 1893.

In this little volume the author omits all considerations of symptomatology or other methods of treatment. His directions are clear and explicit, but our own experience has not led us to put as much value upon the therapeutic action of electricity in neurasthenia, or to lay as much importance upon the various details of application. The whole book might well have been condensed into a brief article.

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THE PAN-AMERICAN MEDICAL CONGRESS.

On September 5th, the first Pan-American Medical Congress will open in Washington. Preparations for this Congress, which have been going on for more than two years, and which have entailed an enormous amount of work are now practically completed; and we have as a result a programme, or rather a series of programmes, with several hundred papers to be read before twenty-two sections. Among these papers are many which promise to be of the first importance, and the programme, as a whole, insures the success of the meeting.

The establishment of an international medical congress limited to the Western Hemisphere comes appropriately in the year dedicated to the memory of Columbus. An attempt was suggested to bring into closer relationship the different American nations, the two sections of which have always been more closely allied with Europe than with each other. A committee was appointed by the American Medical Association in May, 1891, the result of which was a resolution passed by Congress in July, 1892, by which the President of the United States was authorized and requested to invite the several governments of the Western Hemisphere to send official delegates to the meeting of the Pan-American Medical Congress, in September, 1893. All of the countries, practically, have appointed official delegates in response to this invitation, and the President will open the Congress in person. A large number of the colonies and a great many municipalities have also appointed delegates, as have the medical organizations throughout Latin-America. In this country a large number of well-known men have accepted different official positions, and have otherwise contributed to the success of the meeting. The number of names is so large that a congress of these contributors alone, if they all attend, would be numerically of good size.

The general regulations of the Congress provide for the different officers and committees, but the time and place of future meetings is left for later consideration. The sections of the Congress are: General Medicine, General Surgery, Military Medicine and Surgery, Obstetrics, Gynecology and Abdominal Surgery, Therapeutics, Anatomy, Physiology, Diseases of Children, Pathology, Ophthalmology, Laryngology and Rhinology, Otology, Dermatology and Syphilography, General Hygiene and Demography, Marine Hygiene and Quarantine, Orthopædic Surgery, Diseases of the Mind and Nervous System, Oral and Dental Surgery, Medical Pedagogics, Medical Jurisprudence, Railway Surgery.

The official languages are English, Spanish, French and Portuguese.

It will be noticed that the subjects of the papers are more than usually specialized by the large number of sections. This cannot fail to increase the interest and attract discussion in subjects often lost in a more general section. The Governors of nearly all of the United States have appointed delegates to represent the sanitary interests of their respective States. These latter number nearly three hundred in the aggregate. It will be seen, consequently, that special interest attaches to the Section on Marine Hygiene and Quarantine, and on Hygiene, Climatology and Demography, in charge respectively of Surgeon-General Wyman, of the Marine-Hospital Service, and Medical Director A. L. Gihon, of the United States Navy. In both of these sections, discussions on different questions of public importance have had time allotted to them. The Section on Medical Pedagogics, the programme of which will be found on page 180 of the Journal, is a new idea, and one which promises to be of such interest and importance, especially to medical teachers, that its adoption by other congresses may be expected.

The organizers and readers of papers have done their work, and it now remains for the profession at large to attend the meeting, and for each to do his share in discussion. At the close of the meeting the foreign members will visit different cities of the country, in many of which arrangements have already been made for their entertainment. In this way the medical resources of the country can be better shown and our hospitality better proved than by the more formal gathering at Washington.

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ANÆSTHETICS AT THE LONDON HOSPITALS.

The *Medical Press* has recently published a series of reports from the anæsthetists of eleven chief London hospitals upon the method of administering anæsthetics. They are most interesting and full of valuable details.

To most of American readers the statements regarding the use of ether will be not a little surprising. Nine of the eleven hospitals give a decided preference to ether as the best and safest anæsthetic, and while all make a more general use of chloroform or a mixture of chloroform and ether than is done here, they nevertheless use ether in a majority of the cases. The two exceptions to this use were at the Royal Free Hospital where ether "though strongly favored when possible," is not used to a great extent, and Kings College Hospital, where a mixture of alcohol, chloroform and ether, in the proportion of one, two, and three parts respectively, is used in nearly every case.

The reports showing differences in detail of administration are quite agreed as to the greater safety and usefulness of ether and the general class of cases when it is undesirable. Nearly all of the hospitals use nitrous oxide for minor operations, such as are done in an out-patient department. The majority use chloroform for children and persons of advanced age, or those suffering from bronchial disease; Dr. Hewitt, however, gives it in bronchitis and emphysema without trouble. Dr. Bourns, of Westminster Hospital, is inclined to use ether even for very old persons, as he thinks the general dread of ether inhalation in old persons is somewhat groundless, and when lung troubles follow an operation on an etherized old person it is more likely the result of exposure of the chest and the cooling effect of carbolized towels packed about the patient than due to the ether vapor.

Many of the statements are strong and decided. Mr. Ward, of St. George's, says: "I do not use chloroform unless there is a good and sufficient reason to give the coroner in case of a catastrophe"; though he considers chloroform safe if given with great care. Mr. Braine, of Charing Cross, says: "Ether is by far and away the most popular anæsthetic at this hospital, being administered to over seventy per cent. of the cases; chloroform is only administered when the nature of the operation compels its use, as in operations upon the mouth, tongue, or where from existence of lung troubles ether is contraindicated." At the London Hospital Dr. Hewitt says: "Ether is the anæsthetic now principally used. It is administered about twice as often as chloroform. Some few years ago a precisely opposite state of things existed, but an extensive and open-minded comparison of the two has resulted in a distinct preference for ether." The main consideration which has led to a more extensive employment of ether is this, it has been found that "hairbreadth escapes" and fatalities have conspicuously decreased in frequency since the change in practice has been effected.

Many of the hospitals begin the anæsthesia with nitrous oxide before giving the ether, and claim to have a quieter, quicker result with less ether, than if they began directly with the latter.

The ether is given through an inhaler in nearly every case, and apparently much less is used than in many of our hospitals. The Clover's inhaler is chiefly used, though Ormsby's and Junker's have many advocates. Great stress is laid on having the anæsthetic freshly supplied each day, the remaining portions in the bottle not being used again.

A not uncommon practice seems to be the use of both ether and chloroform in the same case at different times, as, for instance, when under ether the patient shows a tendency to bronchial irritation or vomiting, the ether is removed for a while and chloroform used in its place. Again, at St. Mary's, "Drunkards and half-starved, broken-down patients require very careful management. We commence with ether, and when we reach the stage of excitement, which is pronounced, give a little chloroform and resume the ether when the patient is quiet and breathing well."

A noticeable fact in reading these reports is the undoubted advantage to be derived from a thorough and systematic supervision of the management of anæsthesia such as is the case in the London hospitals where there is an official anæsthetist to direct and give instruction to the students and house-officers in etherizing.

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TREATMENT OF ALCOHOLISM BY LARGE DOSES OF STRYCHNIA.

The treatment of alcoholism by strychnia has found many advocates in Russia, especially since the clinical observations of Tolvinsky and Partivisky in 1887. They gave strychnia by the mouth, in doses increasing from the sixtieth to the thirtieth of a grain three times a day. These doses seem small, but the results reported were favorable. The experiments of Jarokeosky on dogs in 1888 led him to formulate the conclusion "that strychnine enables the animal organism to receive large quantities of alcohol for prolonged periods without any apparent injury to the central nervous system."

Pombrak, another Russian authority, found strychnia a valuable remedy both in cases of chronic alcoholism and in those of dipsomania, "not merely curing the attacks, but abolishing the desire for drink." Even attacks of delirium tremens were influenced beneficially. He began with doses of one thirtieth of a grain; in more severe cases with one fifteenth of a grain.

It is worthy of note that Luton of Rheims first called attention to the remedial effects of nux vomica in alcoholism nearly twenty years ago. He was in the habit of administering one half grain of the extract or ten drops of the tincture three times a day in alcoholic trembling, in the cerebral troubles due to alcoholic poisoning, etc. It was Luton who called nux vomica the medicine of drunkards. Luton, however, recognized that nux vomica can have no beneficial effect when the alcoholism has arrived at the phase of plastic infiltrations and of granulo-fatty degenerations. Luton afterwards made trial of strychnine in hypodermic injections, and found that this drug when thus administered had marvellous efficacy in delirium tremens. Dujardin-Beaumetz adopted this mode of treatment in delirium tremens, with equally favorable results. He uses the following prescription:

Sulphate of strychnia	10 centigrammes.
Cherry laurel water	10 grammes.
Distilled water	10 grammes.

A hypodermic (Pravaz) syringeful contains five milligrammes (one-twelfth of a grain). In cases of furious delirium he makes an injection every half hour till four injections are given; then every hour, till the delirium is subdued. It is not an uncommon thing to practise these injections till two to four centigrammes (one-third to two-thirds of a grain) of strychnia are thus administered; and this treatment is pronounced "safe."

Lécuyé, a pupil of Luton, who in 1882 wrote a treatise on "Alcohol and Strychnine," reports similar successes in the use of strychnine, and considers this drug as the remedy *par excellence* of the nervous, cardiac and gastric troubles of alcoholism.

The strychnine treatment of alcoholism has been tried in this country and in England with varying success, and has been adopted in many institutes for the cure of inebriety as a part of routine practice. Experience seems to be daily justifying some portion at least of the claims made for this drug by the enthusiastic advocates of its use in the treatment of alcoholism (and not the least of its merits is said to be its wonderful power of sustaining the heart under conditions of extraordinary depression), but it cannot be relied on to the exclusion of other remedies as nerve sedatives and hypnotics, or of the proper hygienic treatment.

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MEDICAL NOTES.

A Long Umbilical Cord. — A case of an abnormally long umbilical cord is reported from Philadelphia. The child, a female at full term, was delivered after an ordinary labor. The cord measured 53 inches and was coiled around the neck four times.

A Quarantine of Lemons. — Surgeon-General Wyman has ordered that lemons imported from Naples be refused entry during the cholera epidemic in Italy. This order affects Boston less than New York as most of the lemon supply coming to Boston is brought from Palermo or Messina and not from Naples, ples, and lemons from the latter port only have been prohibited.

Inspection of State Quarantines by the Marine-Hospital Service. — The Solicitor of the Treasury has given his opinion that it is within the intention of the National Quarantine Act of February 15, 1893, for the Government to authorize the inspection, by proper officers connected with the Marine-Hospital Service, of the condition of State or local quarantines. Although the act does not expressly provide for the inspection of local quarantines by the Marine-Hospital Service, it appears clearly all through the act that such was the reasonable and fair intention of the law. The decision is therefore based upon the well-established and familiar principle of law that whenever a power is given by a statute everything necessary to make it effectual or requisite to attain the end is implied, and when a statute gives a right to impose a duty it also confers by implication the power necessary to make the right available or to discharge the duty. (Suth. on Stat. Cons., sections 341, 343, 344, 345, 390.) And statutes relating to the public health are to be liberally construed. (Dwarris on Statutes.)

Yellow Fever. — No new cases of yellow fever have occurred at Pensacola. At Brunswick, Ga., there have been two cases and one death, that of the quarantine officer of the Marine-Hospital Service.

Cholera. — No new cases have occurred in New York this week, and but one death among the patients at quarantine who are all now convalescing. In Naples, the epidemic is declining, at least according to *official* reports. There are now about fifteen new cases each day and eight deaths. A few scattered cases have occurred in inland towns. In Russia, the disease is increasing very markedly, especially in Moscow, where there are some fifty new cases and twenty deaths daily. In Nijni Novgorod, the disease appeared last week, with one hundred and five deaths. Galicia has already had thirty deaths. In Hungary, there have been forty deaths each day in the valley of the Black Theiss. On the 17th, the cholera reappeared in Astrakan and Baku. Three deaths from cholera occurred in the eastern quarter of Berlin August 16th, but so far no new cases are reported.

A Hazardous Experiment. — Dr. Watkins, of New York, who was inoculated last year in Paris with a culture of cholera spirillum and recovered after a severe illness, has recently been inoculated at the Loomis Laboratory in New York, with a pure culture of the bacillus of tuberculosis taken from phthisical sputum. He believes that a healthy person, whose blood does not contain the so-called "third corpuscle," is absolutely immune to the bacillus. He has repeatedly examined his own blood and never found the dangerous corpuscle. If he unfortunately overlooked any of these third corpuscles and becomes infected it is only to be hoped that he will be able to cure the disease, as he claims he can, by the early eradication of the "tubercular blood corpuscle," or hematoblast, from the blood.

Diagnosis of Epilepsy by the Urine. — Dr. Gilles de la Tourrette claims that a diagnosis between hysterical epilepsy and that due to neoplasm can be made by the examination of the urine. He has found that there is an increase in the elimination of urea and phosphates during a convulsion due to a tumor, while the amounts excreted during an attack of hysterical epilepsy are diminished.

NEW ENGLAND.

Delegates to the Pan-American Congress. — Governor Russell has appointed John G. Blake, M.D., and J. Collins Warren, M.D., of Boston, Z. B. Adams, M.D., of Framingham, and Thomas Kittredge, M.D., of Salem, delegates to the Pan-American Medical Congress at Washington.

NEW YORK.

Bacteriological Diagnosis of Diphtheria. — President Wilson, of the Board of Health, has made public the report submitted at the last meeting of the Board by Dr. H. M. Biggs, pathologist to the Department, on the result of Dr. W. H. Park's investigations relating to the bacteriological diagnosis of diphtheria during the past fourteen weeks. A few months ago the number of cases of diphtheria reported in the city became so large as to create considerable alarm, and the Board of Health (as already mentioned in the Journal) took steps to ascertain whether many of the cases so reported were not in reality instances of what is now known as false diphtheria, that is, lacking the characteristic Klebs-Lœffler bacillus of true diphtheria. With this object in view, Dr. Park was appointed to the position of bacteriological diagnostician of diphtheria; and under his supervision culture tubes were prepared and distributed to various druggists throughout the city for the free use of the medical profession. Dr. Biggs reports that out of 431 cases examined between May 6th and August 12th about one-third have proved to be false diphtheria; 301 being true diphtheria, and 130 false diphtheria.

Professor Von Helmholtz's Visit. — Professor von Helmholtz, the world renowned eye specialist and inventor of the ophthalmoscope, arrived on August 16th by the North German Lloyd Steamship *Lahn*. After a short stay in the city as the guest of Dr. Herman H. Knapp, he left for Chicago. A number of other distinguished German physicians and scientific men came on the same steamer.

A Broken Neck. — Still another case of a man living with a broken neck is reported. The patient, who is in one of the Brooklyn hospitals, fractured the sixth cervical vertebra in diving from a spring-board sixteen feet high into five feet of water at Bath Beach. While the body is paralyzed from the waist downwards, the man is otherwise in good condition, and there seems now to be a prospect of his living indefinitely.

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Miscellany.

SOME RESULTS OF FAITH CURE.

The reports from a recent faith-cure convention have some curious and interesting statistics. Out of two hundred cures reported thirty patients had made a diagnosis of organic disease; and there were the usual number of fractures which had been marvellously reunited by faith. There was no record made, however, as to the subsequent position and deformity. The time of this method of cure appears to be much shorter than that required by surgical means — as one case of a broken ankle was said to have been cured in five minutes.

The greatest curative effect of faith seemed to be upon erysipelas, for one hundred cases of speedy cure were reported. In what way the streptococcus is affected by a profession of faith was not clearly explained.

The only case not curable by this means appeared to be rupture of the heart; for one person testified that by faith his child had been cured of colic, and a daughter of pneumonia. Their little one had been taken from them, but not by sickness; he died of a broken heart.

The further gathering of figures and the compilation of mortality statistics should not be neglected; for their results are curious and of some psychological interest.

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THE HYPODERMIC USE OF NITRO-GLYCERINE IN EPILEPTIC CONVULSIONS.

The occasional usefulness of nitrate of amyl in warding off an attack of epilepsy when given as soon as the least suspicion of an aura arises suggests the use of a rapidly acting nitrate not only before, but during the convulsion.

In the New York *Medical Journal* of July 29th, Bates reports the successful employment of nitro-glycerine in twelve cases of epileptic convulsions. In one case in which the patient was totally unconscious with marked muscular movement, a hypodermic injection of one one-hundredth of a grain of nitro-glycerine was given, and before the needle could be withdrawn total relaxation took place, consciousness returned, and the patient called for a drink of water. In one case only was a second dose required. In all the cases the use of the drug was followed by prompt return to consciousness, the patients recovered without the usual fatigue and general demoralization, and the after-effects of the attack were markedly lessened. The writer does not claim for the method that it is curative, but that it shortens the attack, saves fatigue, and has some influence upon the frequency of the attacks.

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LOCAL CATALEPSY.

Under this title Mitchell describes[1] a curious group of symptoms, observed in a young woman seventeen years old of excellent history and general health.

In December, 1891, she several times dropped her school books from the left hand as if it were tired and suddenly grown weak.

"In April, 1892, on the ulnar surface of the third, and on the adjacent side of the little finger of the left hand, there appeared sundry small blisters or blebs containing serum, which caused some itching and came and went several times. In July, of the same year, she received a slight cut with a knife at the root of the left thumb. There was a good deal of suppuration, and the wound healed slowly. All the fingers then gradually became stiff, and have so remained ever since."

There was no muscular wasting of the hand, but a curious cataleptic condition ensued. The hand was held "with the wrist half extended, all the fingers in semi-flexion, the little finger slightly adducted on the palmar surface of the third finger, the thumb in close contact with the palmar surface of the index finger, and all rigid." There was slight muscular tremor in the forearm and hand. Voluntary motion of the wrist was possible, but not of the fingers. Passive motion was easy at first, but soon became difficult and after a few movements the fingers would become quite rigid and remain for many minutes exactly as placed. There were occasional automatic changes in the position of the fingers.

The sense of pain was lost in the whole left hand as high as the annular ligament, where it suddenly became acute again. Below this a slight pin-prick did not bleed; there was no sense of touch, localization, or temperature change. There was no tenderness over the nerve tracks in the arm, with the single exception of a minute area of pressure-pain in the middle of the flexor surface of the wrist, just above the annular ligament.

In every other way the patient was well and all the bodily functions normal. The rigid condition of the hand persisted during sound sleep. There was no evidence of any neuritis or degenerative nerve change. The author considered it of a hysterical nature in spite of the absence of other manifestations.

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THE VOMITING OF PREGNANCY.

At the last meeting of the London Obstetrical Society, Giles[1] reported the analysis of three hundred cases of pregnancy in reference to the occurrence of vomiting. He found that only about one-third of pregnant women were free from vomiting throughout their pregnancy; that the sickness began in seventy per cent. of cases in the first month, while in ten per cent., it began in the last three months. The sickness was least frequent in women between the ages of twenty and twenty-five, while ninety per cent. of primiparæ over twenty-five suffered from vomiting. There was less sickness during the third pregnancy than in others. Sickness during the first third of the pregnancy was thirteen per cent. more common among primiparæ than multiparæ. Women who habitually menstruated painlessly and scantily, suffered less than others, the degree of pain being a more important factor than the amount of blood lost.

The observation that the third child of a mother is usually the strongest is of interest in connection with the author's statement that vomiting was least frequent during that pregnancy.

He looked upon vomiting as a manifestation of nervous instability, and so dependent on the interaction of three main factors: (1) The increased nervous irritability of pregnancy; (2) a local source of irritation; (3) a ready efferent channel for nervous energy (the vagi).

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OBITUARY. — SETH ROGERS, M.D.

Dr. Seth Rogers died August 6, 1893. He was born in Danby, Vt., February 13, 1823. The youngest of twelve children, a prosperous farmer's son, and possessing the conscience of his Quaker parentage, he earned, as clerk in a store, in spite of delicate health, the means for the medical education which was the dream of his early life. He studied medicine at the University of New York and in Castleton, Vt., where he graduated. After two years' practice in Worcester he went to Europe, in 1852, for sixteen months, to make up the deficiencies in his training, of which he was over-conscious, working for the most part in Paris with Trousseau and Valleix. He joined the Massachusetts Medical Society in 1855, and continued the practice of his profession in Worcester until 1862, except for a voyage to South America for his health in 1858.

In 1862 he became surgeon of Colonel Higginson's negro regiment, the First South Carolina Volunteers. But after a year of devoted service, his health compelled him to give up active medical duties altogether. Four years [illegible] in Pomfret, Conn., on a farm, where he went, as he thought, to die, brought sufficient restoration of health for him to establish a winter practice in Florida for thirteen years. After 1882 he limited his professional work to the care of patients in his own house in Pomfret and to consultations with his colleagues.

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[1] American Journal of the Medical Sciences, August, 1893.

[1] Medical Press, July 19, 1893.

Dr. Rogers early learned to question everything in religion and politics and, later, medicine, and to seek in his overtrained conscience the guide for his life. He naturally grew up an abolitionist. As a physician he was a sincere searcher after the truth, honest, faithful, intelligent, devoted, full of courage and with a rare power of imparting his courage to his patients. He was handicapped all his life by illness which would have disabled most men, and yet he performed a life-work to be proud of.

As a man Dr. Rogers was one of those charming, picturesque characters developed by the stirring events of the long struggle against slavery. An innate nobility of life marked his whole career. Although with him living was a long fight against poverty, he was one of the richest of men and gave away, as few give, of that which is best worth receiving.

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Correspondence.

A LAST GLIMPSE OF CHARCOT AT THE SALPÊTRIÈRE.

Boston, August 19, 1893.

Mr. Editor: — The recent death of Prof. Jean M. Charcot, doubtless the most brilliant physician of his day in France, recalls a morning which I had the pleasure of spending with him at the Salpêtrière some three months ago. This hospital which was originally built by Louis XIII for an arsenal, occupies a large tract of ground away at the eastern part of Paris near the Gare d'Orleans. It is so inaccessible from those parts of the city which Americans mostly frequent, that it is rather difficult to get to it at the comparatively early hour at which the distinguished clinician makes his usual visit. On arriving I found that the public clinics were for the time suspended, which may have been on account of the then already manifestly failing health of the teacher. But fortunately, though not appearing in public, he was making his morning visit, and I was directed to his consultation room. Passing through the roomy courts which separate the several buildings, one sees sitting on benches under the great trees, the old women who are favored with a permanent residence in this beautiful spot. Beyond the line of buildings to the right on a little higher level is a shady park of several acres, quite as pretty as any in Paris and open like the courts to the old crones, who with their sewing in hand, wag their tongues with a vigor which makes up for the feeble quality of the product evolved from their weak old brains. Through the open windows are seen the large wards occupied as dormitories by the more chronic and not bed-ridden patients. Such wards have three tiers of beds running their length and are thus a little overcrowded although they are thoroughly comfortable old structures. The wards for the acuter cases, which we shall see later, have only the regulation two rows of beds, and each bed is surrounded by close fitting curtains of cotton, which when drawn, completely isolate the patient. A glimpse of a dining-room with tables laid for the ambulatory patients, discloses a half-glass of red wine at each cover. Altogether, the Salpêtrière strikes us as not at all a bad place, of a bright May morning.

At length we reach the building where Charcot has his consulting room. The patients whom he sees here are, of course, only such as can walk or be readily brought into his presence. He sits before the window, from which the light falls on the faces of the two or three patients who are kept occupying the chairs in front of him. The chief part of the examination is conducted by the middle-aged assistant, who apparently has had previous knowledge of the cases, which Charcot is seeing for the first time. The latter is a striking personality: a large, pale, smooth-shaven face, firm and decided mouth, unusual interocular and frontal breadth, the forehead high, and surmounted by abundant white hair, rising straight and falling backwards. The expression of face is grave and serious, not to say stern; the speech low, and to foreign ears at least, not distinct. Besides the assistants there are perhaps a dozen other visitors in the room — mostly middle-aged men — in fact, about as many as the small space can accomodate with chair room.

The walls of this room are, it is to be feared, calculated to divert the attention of the casual visitor from the cases immediately before us. For on these walls, in fact, almost entirely covering them, is a series of reproductions, photographic and in engraving, of those paintings in which the world's great artists have sought to depict the manifestations of hysteria and hystero-epilepsy. Prominent among them, of course, are pictures of the casting out of devils. Here are seen the demoniac youth from Raphael's Transfiguration and similar figures from the works of other Italian masters and from Rubens. Charcot has evidently made a diligent search through the Italian churches for good pictures embracing this subject, and has got together an astonishing array. By way of comparison with these great painters' conceptions of such phenomena, is placed a photographic copy of the well-known French picture of Charcot himself exhibiting in his clinic a woman with major hysteria.

Besides the more marked representations of the "possessed," we find also in the room pictures of various saints in ecstasy, as St. Francis in the act of receiving the stigmata, St. Cecilia and St. Anthony of Padua, in Murillo's painting at Berlin. In a word, this little room is a museum of hysterical manifestations as they have presented themselves to the observation or, as we must admit, perhaps more generally to the imagination of the masters in art.

But the hour is advancing. The professor will go into a ward to see a patient with reference to the localization of a focal brain lesion and, as we follow thither in his train, we notice, with regret, that while his intellectual strength has shown no abatement, his physical and nervous forces are greatly shattered. His gait is shuffling and unsteady. He walks with difficulty and finally totters to his carriage and is driven away. Can it be that, as has curiously happened to so many prominent medical men, he will fall a victim to one of those diseases to which he has devoted his special, life-long attention? If so, we feel that his self diagnosis will be accurate, however futile his treatment. It is now scarcely three months, and his illustrious career as student and teacher is closed.

C. F. Withington.

METEOROLOGICAL RECORD,

For the week ending August 12, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S... 6	29.98	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	[illegible]	[illegible]	[illegible]	C.	O.	1.07
M.. 7	29.76	[illegible]	78	[illegible]	[illegible]	[illegible]	88	[illegible]	W.	[illegible]	[illegible]	C.	F.	1.27
T.. 8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	[illegible]	[illegible]	[illegible]	C.	
W.. 9	30.14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.W.	[illegible]	[illegible]	[illegible]	[illegible]	
T..10	[illegible]	[illegible]	93	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	S.W.	[illegible]	12	C.	C.	
F..11	[illegible]	72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E.	[illegible]	[illegible]	C.	[illegible]	
S..12	[illegible]	[illegible]	73	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	[illegible]	[illegible]	[illegible]	F.	
☞	[illegible]		[illegible]	[illegible]			[illegible]							[illegible]

* O., [illegible] threatening [illegible] ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 12, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrheal Diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	866	435	29.26	9.68	18.70	1.10	4.29
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	465	208	27.72	9.46	18.36	1.98	1.76
Brooklyn	978,394	—	—	—	—	—	—	—
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	236	109	26.88	12.18	20.00	—	2.94
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	120	50	22.41	6.64	14.11	—	2.49
Cincinnati	305,000	94	40	23.32	8.48	16.96	1.06	3.18
Cleveland	290,000	142	88	46.20	4.90	40.60	4.20	2.10
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	131	94	40.28	4.56	34.96	—	2.28
Nashville	87,754	19	6	21.04	15.78	15.78	5.26	—
Charleston	65,165	33	4	15.15	18.18	15.15	—	—
Portland	40,000	14	3	21.42	7.14	21.42	—	—
Worcester	96,217	42	31	61.88	7.14	54.74	2.38	—
Fall River	87,111	64	37	54.60	9.36	51.48	3.12	—
Lowell	87,191	59	42	47.32	3.38	47.32	—	—
Cambridge	77,100	32	12	40.69	15.63	31.30	—	—
Lynn	62,656	30	16	40.00	20.00	33.33	—	—
Springfield	48,684	26	17	38.50	—	38.50	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	27	17	48.10	7.40	44.40	—	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	16	9	56.25	—	43.75	—	12.50
Brockton	32,140	12	6	16.66	33.33	16.66	—	—
Haverhill	31,396	—	—	—	—	—	—	—
Chelsea	30,264	10	6	10.00	10.00	—	—	10.00
Malden	29,394	6	3	33.33	33.33	33.33	—	—
Newton	27,556	—	—	—	—	—	—	—
Fitchburg	27,146	15	13	59.94	6.66	53.33	—	—
Taunton	26,972	28	15	46.41	3.57	42.84	—	—
Gloucester	26,688	10	5	20.00	20.00	—	10.00	10.00
Waltham	22,058	7	3	28.56	14.28	28.56	—	—
Quincy	19,642	5	4	20.00	—	20.00	—	—
Pittsfield	18,802	6	3	66.66	—	66.66	—	—
Everett	16,585	13	10	30.76	—	30.76	—	—
Northampton	16,331	2	0	100.0	—	100.0	—	—
Newburyport	14,073	5	2	—	—	—	—	—
Amesbury	10,920	3	0	66.66	—	—	—	—

Deaths reported 2,602: under five years of age 1,321; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 846, diarrhœal diseases 643, consumption 258, acute lung diseases 231, diphtheria and croup 71, whooping-cough 35, typhoid fever 31, measles 15, cerebro-spinal meningitis 15, malarial fever 15, scarlet fever 15, erysipelas 7, small-pox 1.

From whooping-cough New York 14, Philadelphia 10, Boston 4, Cincinnati and Cambridge 2 each, Washington, Worcester and Lynn 1 each. From measles New York 10, Philadelphia 4, Fitchburg 1. From malarial fever New York and Washington 6 each, Philadelphia 2, Boston 1. From cerebro-spinal meningitis New York 9, Philadelphia, Worcester, Cambridge, Lynn, New Bedford and Marlborough 1 each. From scarlet fever New York and Milwaukee 3 each, Boston 2, Philadelphia, Taunton and Woburn 1 each. From erysipelas New York 4, Philadelphia 3. From small-pox New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 12, 1893, TO AUGUST 18, 1893.

By direction of the President, the retirement from active service, this date (August 12, 1893,) by operation of law, of Lieut.-Col. John H. Janeway, deputy surgeon-general, under the provisions of the act of Congress approved June 30, 1892, is announced.

Leave of absence for one month, to take effect when relieved by another medical officer, is granted First-Lieut. Harlan E. McVay, assistant surgeon, San Carlos, Arizona Territory, with permission to apply for an extension of fifteen days.

Leave of absence for twenty days, to take effect upon the conclusion of his examination for promotion, is granted First-Lieut. James D. Glennan, assistant surgeon, U. S. A.

Major Henry R. Tilton, surgeon, U. S. A., is granted two months' leave of absence, when relieved from duty at Fort Wayne, Michigan.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 19, 1893.

A. M. Moore, surgeon, and C. W. Rush, passed assistant surgeon, placed on retired list.

R. M. Kennedy, assistant surgeon, promoted to passed assistant surgeon.

J. H. Clark, medical director; C. H. White, medical inspector, and J. L. Neilson, surgeon, ordered as members, Medical Examining Board.

M. F. Gates, passed assistant surgeon, from Naval Hospital, Portsmouth, and recorder, Naval Medical Examining Board, September 1, next.

A. R. Wentworth, passed assistant surgeon, ordered to Naval Hospital, Portsmouth, N. H.

A. C. Gorgas, medical director; C. A. Siegfried and H. G. Beyer, surgeons, ordered as delegates to the Pan-American Medical Congress.

B. S. Mackie, and L. G. Henneberger, surgeons, to Naval Academy to examine applicants for admission to Naval Academy.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

In consequence of the sanitary condition of several of the European States, which prevents their medical men leaving home, and, following the advice of many of the most prominent scientists, both Italian and foreign, the Executive Committee of the above Congress has decided, by a large majority, to postpone the meeting till April, 1894. The exact date of the inauguration will soon be fixed.

APPOINTMENTS.

Charles H. Winn, M.D., of Roxbury, and Laurence Collier, M.D., of Boston, have been appointed medical examiners on the second Board of Pension Examiners for this district.

RECENT DEATHS.

Timothy Stone Pinneo, M.D., died at Norwalk, Conn., August 9th, aged ninety years. He was one of the oldest alumni of Yale. For a time he practised medicine in the South, but failing health obliged him to abandon this field. He was professor of belles lettres in Marietta College, Ohio, and the author of Pinneo's Grammars.

S. J. F. Miller, M.D., of Cincinnati, died August 9th, aged fifty-six years. He was at one time surgeon at the Soldiers' Home at Togus, Maine.

Jean M. Charcot, M.D., the distinguished French physician, died at Morvan, France, August 16th, aged sixty-eight years. Of wide clinical experience, he had devoted himself chiefly for the last thirty years to diseases of the nervous system. Of late years he has been especially interested in the scientific study of hypnotism. He was the founder, and till his death, the editor of the *Archives de Neurologie*. He took a large part in the direction of the *Revue de Medecine* and the *Archives de Pathologie Experimentale*. He was a member of the Institute of France, of the Royal Irish Academy, of the Royal Medical Chirurgical Society of London. His best known books are perhaps his "Leçons Cliniques sur les Maladies du Systeme Nerveux," and his "Leçons du Mardi a la Salpêtrière."

BOOKS AND PAMPHLETS RECEIVED.

Bellevue Hospital Medical College of the City of New York. Circular of Information, 1893–94.

Fifteenth Annual Announcement of the St. Louis College of Physicians and Surgeons, Session of 1893–94.

Transactions of the Medical Society of the State of New York for the Year 1893. Published by the Society. 1893.

Thirteenth Annual Announcement of the College of Medicine of the University of Denver, Session of 1893–94. Catalogue of Alumni and of the Matriculates and Graduates of the Session of 1892–93.

Station-list of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, July 1, 1893, or at date of last report received at this office. Washington. 1893.

Introduction to the Catalogue of the Collection of Calculi of the Bladder, upwards of One Thousand in Number, Removed by Operation. By Sir Henry Thompson, F.R.C.S., M.B., London. London: J. & A. Churchill. 1893.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XIV.

FROST-BITE AND BURNS.

We are all quite familiar with the phenomena and appearances of simple exposure to cold. The first effect produced upon the surface is to drive the blood away from it. The part becomes very white; and then, if the exposure to cold is only brief, reaction takes place promptly. The exposed surface becomes very red and congested; burns; glows; tingles; if exposed a little longer, is the seat of intense pain from the returning circulation.

These phenomena, on a small scale, on the surface of the body are due to shrinking of the vessels from the stimulus of the cold. The capillary vessels shrink. The blood recedes. The surface is cooled down. It grows pale. When the cold is removed, the vessels dilate again. The blood returns. The pendulum swings a little further back than the normal limit. Congestion takes place. The skin becomes red and hot; and this sudden afflux of blood is accompanied by pain.

If a large portion of the body is exposed to intense cold for some time, then it follows that a very large portion of the superficial blood must be driven in on the internal organs; and excessive congestion of all the large vessels, and the circulation in the viscera, takes place. This before long affects the brain so that death from cold takes place in a state of coma; stupor being produced by great congestion of the brain; and, if pushed far enough, by serous effusion. We are all familiar with the stories of those who, long exposed to cold, soon give up and desire to rest. They cease to suffer, after a little while, and sink to sleep. It is impossible to resist the inclination to slumber, they lie down and sleep, and die in a state of coma. That is the general effect on the internal organs when the whole surface is exposed.

Now if, on the other hand, the person has only one member exposed to cold, as a foot or a hand, and the cold is not intense enough and long enough to chill the whole body, then that portion which is directly exposed becomes as it is called "frozen." In that case the driving away of the blood from the surface continues so long that it does not return promptly; and alteration also is said to take place in the blood corpuscles themselves, so that they disintegrate. In this case the limb is incapable of repair; and although the part may be again exposed to warmth, and every effort made to produce a return of circulation, yet it sloughs; mortifies; spontaneous amputation takes place; and nature makes a cure by granulation, after the process of ulceration.

In imperfect freezings, where a part is chilled, it is capable of recovery. Where it is chilled so far that it is partially frozen, it is capable of recovery. The circulation returns, and with such violence that the danger subsequently is not in a want of return of the circulation, but in its too rapid return. The part becomes congested too rapidly by the returning blood; hence the familiar rule, after a part has been exposed to cold a long time, that it is not safe to warm it too rapidly; and, as it underwent its starvation of blood, so to speak, by the influence of cold slowly, so you must allow the current to come back slowly, if you want to avoid the next consequence, which is sure to ensue, if it comes back rapidly; and that consequence is intense congestion and inflammation of the part. The danger then of a universal freezing is death from coma and stupor. The danger from a very deep freezing is that the blood will never get back. The corpuscles are altered, and the part dies. The danger of a moderate freezing is that there may be a too rapid reaction and return of the blood. This acts in this way: The part is partially frozen; it is chilled and the blood driven away. The patient goes to the fire or exposes himself to heat. Intense pain and redness is produced; œdema; effusion of blood; loosening off of the cuticle; true inflammatory processes, which end in mortification, suppuration, ulceration, a line of demarcation, and slow repair afterwards.

These modes of injury indicate to us, of course, the modes of treatment; that, if the part is exposed to cold long, the most prudent course is to bring it back to warmth slowly. Apply ice-water, apply snow, and keep it away from heat. Subsequently, when it begins to recover, put on evaporating lotions containing substances like ether, or alcohol, or vinegar, and hold the reaction back. If it can be forced back and allowed to come on in an hour or two, instead of instantly, then the part frequently recovers with a partial inflammation. A partial inflammation causes death of the skin usually; and that gives rise to a very troublesome series of phenomena, but these are not dangerous. Moderate frost-bite if it has been successfully treated, always ends in some death of the skin. This is shown by blistering off of the surface, by the occurrence of subacute eczema, which very frequently follows. That is especially true of moderately frozen ears; in which the ear afterwards becomes the seat of eczematous inflammation for several weeks before it finally recovers.

The same is true of the nose and face and other exposed parts. So on the hands the skin of the fingers may peel off, and the nails may be loosened and some of them drop off, without absolutely freezing through the finger.

Exposure to cold; reaction to be delayed; that is the rule of treatment. Exposed to severe cold with tendency to torpor, the safety of the individual consists in being roused and shaken and driven about and forced to exert himself, to avoid the peril of death.

The spontaneous amputations and sloughings which come on after frost-bites affect most commonly the parts most distant from the centre of the body; the fingers and toes. We see it occasionally occur in this climate on land; and quite frequently in sailors who get the hands and feet frost-bitten by the combined action of the salt water and cold and exposure. These cases are frequently brought to us for treatment in the state of moist gangrene; rapid inflammation followed by gangrene. It is always of the moist variety. It is offensive, soft, sloughing, black, with a distinct line of demarcation forming. It is injudicious to interfere until the line of demarcation has fully formed. It is sometimes questionable whether it is worth while to interfere at all until spontaneous amputation has been pretty well performed; then we can judge whether we can get along with the protruding stump, or whether it is necessary to make a primary amputation back of the injury, and get sound flaps. Whether we do this, depends a good deal on the extent of the frostbite and the location of the part. For instance, it is extremely important to preserve a thumb as long as possible; and, if we can get off by shortening a little piece of bone and have it recover by granulation, it is better than to amputate high up.

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[1] [illegible]

So that in some of these cases it is wiser to wait until spontaneous amputation has taken place down to the bone, then to press back the granulations, scrape them back with the periosteum scraper, saw off the bones high up in the bleeding tissues, allow the granulations to come back over them, and allow the natural processes to go on. In that way we sometimes save important parts.

BURNS AND SCALDS.

Perhaps it has not occurred to you that these are the most frequently fatal and numerous accidents of civil life; and also this other point, which is worth remembering, that more than three-fourths of all the burns and scalds occur in young children. It is natural that it should be so. They are the most careless and most exposed. They go the most about stoves and lamps with their short and light clothing. They are unable to protect themselves after they are burnt. They are much more likely to have a serious burn than an adult because the first impulse of the child on being afire is to throw open the mouth and shriek, and inhale the flame or gas; which they frequently do with fatal result. The shock, also, to these young subjects when burnt is more severe and more fatal than it is with grown persons.

Scalds are not nearly so severe as burns. Burns are produced by fire; scalds by heated fluids, or steam. The species of burns produced, however, by the melting of substances which are denser than water, as for instance, molten lead or molten iron, anything of that kind, are more penetrating and more deep than the burns produced by simple fire, whether of wood or coal. The burns produced by heated metals are the deepest and most severe; the burns produced by fire are the next; the true scalds produced by fluids and gases are much less so. It is rare that a scald, so-called, goes far into the true skin and deeper tissues; but scalds mostly belong to the set of burns which are, what is termed, of the first class. The French authors have divided burns into six classes; but that is quite a needless minuteness of subdivision. Dividing them into three classes is quite sufficient; and practically only two of these are what we have much to do with.

The first is that which destroys the epidermis and does not penetrate the true skin.

The second destroys the epidermis and goes through the true skin, to a greater or less depth, into the cellular tissue or muscles.

The third class are those which go through the muscles, and go down and perhaps even char the bone.

A person, for example, who is epileptic or drunk, and who falls into the fire, or onto a hot stove, may lie unconscious, and have the limb deeply charred, or the third form of burn. The electric-current and the electric-wire burns are always of the third class, if it is in contact long enough with the tissues. The linemen who repair the wires and get burnt are occasionally brought to the hospital; are occasionally burned in the hand from catching hold of the wires; and the wire burns down through the mass of the adductor muscles and burns the bones themselves. That is quite a common accident from the electric current. A similar sort of burn is produced, by a different cause, among the workers in iron; in blasting furnaces, especially in the handling of long rails, that are drawn out of the furnaces in a bright red state, previous to being hammered into shape.

These burns almost invariably extend down to the bone; and so do the burns from the electric current. On the other hand, the patient who is scalded by hot water or steam has the epidermis peeled off, but the true skin is not affected.

The first class of burns does not scar; the second class of burns does; the third produces deep mutilations.

There are three or four things which seem to influence very much the prognosis with regard to a moderately severe burn. The first is the age of the patient. The next is the location of the burn, and the next is the extent of the burn, the extent more than the depth, and for this reason: the shock inflicted upon the system by a scald or a burn, is due to the rapid burning off of the sensitive nerves which supply the skin. The skin being the organ of touch, is enormously endowed with nerves. The filaments terminate there; and they are the organs of a very acute sensibility. A burn chars off the surface; inflicts shock and intense pain; and destroys their function. Now the more skin that is burned the greater the shock. The shock is greater over the larger extent of skin, in a burn of that kind, then in the deep burn which goes far into the tissues toward the bone. This is familiar in regard to the pain of surgical operations. The patient suffers intensely while the skin is being cut; much less when the muscles or deeper tissues are being divided. The shock of a burn depends upon the amount of skin involved; and therefore it is that the extent of a burn is of more consequence in the prognosis of the patient than the depth of it.

The location also is important. The most dangerous place to be burned is the front wall of the abdomen; the next, about the chest, and third, about the scalp. The limbs, much less danger.

The age of the patient you may reasonably suppose would make a good deal of difference in the prognosis, as it would in any class of injuries. Repair is more difficult in the old than in the young, as would naturally be supposed to be the case.

The effect of burning off the skin, or flaying the patient, so to speak, over a considerable surface, say a foot square or more, the effect of burning off so large a surface is certainly to inflict a most terrible shock to the nervous system from the pain produced by the sensitive nervous filaments, hundreds of which are destroyed, and also to produce very serious consequences on the internal organs of the body by the loss of the skin; the interruption of the functions of the skin as an excreting organ. A large burn produces in the internal organs precisely analogous changes to those produced by that acute inflammation of the skin with discoloration which we call scarlet fever. The subsequent consequences are very similar. In consequence of the loss of function of the skin, the power of perspiration and excretion is lost. The excreting organs in the interior of the body have then to do all this additional work. The consequence is congestion of the kidneys to a very marked degree; congestion of the mucous membrane of the alimentary canal also in large burns; and in severe burns there will be very likely albuminuria, and ulcerations in the mucous membrane of the bowels. It, of course, would also be probable, and is the case, that in severe burns about the face and scalp the delicate structures inside the skull are liable to be congested, and meningitis, or serous effusion is liable to follow within the head itself. In addition to all this, if a burn happens to occur on the front of the abdomen where the walls are very thin, the immediate consequence is liable to be the occurrence of a mild degree of peritonitis produced by the irritation of the burn, with serous effusion or ascites inside the abdominal cavity; or, also, as is occasionally seen in large burns about the thorax, the pleural cavity becomes filled with fluid, and there is pleurisy under the seat of the burn. These facts must make it plain why it is that the location of the burn is of so much importance, and the extent of the burn is of so much importance. I do not care to add the depth of the burn as regards the prognosis and the symptoms. We agree about the depth in this way, that it is going to produce a serious and hard scar; but it is not so dangerous to life if a burn goes in several inches into the flesh, as if a superficial burn spreads over several feet of surface on the abdomen, or thorax, or upon the thigh.

There are three periods of danger in a burn. The first is immediate and is due to the shock, which occasionally produces fatal collapse. The next is due to the internal congestions and inflammations with fever, which are liable to follow immediately from the destruction of the skin; and the third period of danger is, if these have been passed through, the long-continued suppuration which follows the repair of the burnt surface; throwing the patient very much into the condition of hectic we see so often in the wasting suppuration of the joints and of the spine. Shock, then, first; then a period of inflammation; and then the period of exhausting suppuration.

The most marked and curious pathological result on the internal organs from the burn is the effect on certain portions of the mucous membrane of the alimentary canal; and, for some unknown reason, these troubles seem to expend themselves upon a certain tract, and that tract is almost invariably the duodenum, just below the pylorus, where circular, punched-out, depressed ulcerations, with hæmorrhage, are common. It is a thing to be looked out for. The statistics from autopsies show that ten to twelve per cent. have these ulcers; and when they occur they are the cause, occasionally, of a fatal termination of the case. The symptoms are not very marked. The diagnostic symptoms would be diarrhœa and bloody stools, and, perhaps also, vomiting, though not always; great pain or tenderness over the duodenal region are said not to occur to any very great extent. They are not marked symptoms. The nausea, diarrhœa, bloody stools are the signs of duodenal ulcer. They indicate to us, of course, that our treatment should be directed to do what we can to allay the excitability of the mucous membrane and to allow it to heal. We should try then, by simple treatment, to allay irritation by opium; to check diarrhœa by the same means; to give only those kinds of food which would leave the least possible sediment to pass over the irritated bowel; to choose that kind of food that would be digested by the stomach alone rather than in the duodenum; and by such treatment as this, endeavor to promote the healing of the ulcer. Perhaps, also, we may be able to prolong the patient's life, and give them time to heal, by rectal nutrition; by enemata and stimulants administered by the rectum.

Acute congestion of the kidneys followed by albuminuria will have to be treated as it would in other cases of commencing Bright's disease, or in other cases of congestion of the kidneys, by endeavoring to see as far as possible that the function of the skin, where it has not been destroyed, be kept up by promoting sweating; by warmth applied to the surface; and by giving diluent drinks; possibly, in bad cases, applying cups over the kidneys.

To recapitulate, we say when a patient is burned over a large surface he is in much greater danger than if burned deeply over a small surface. The three periods of danger are: first, immediately from shock and collapse; next, from inflammation and congestions internally; and finally, from suppuration.

What are the phenomena and appearances of a burn when first received? The pain, we all know, is intense, terrible, demoralizing. Directly after this follows a period of partial collapse; that is, if the burn is severe, the temperature of the body falls and the patient complains of cold; is chilly, shivers. After this has gone by the pain still continues; and a period of acute heat and inflammation gradually comes on, with restlessness and fever, and perhaps some signs of trouble inside the cavities of the body.

The shortest way to stop the pain of a moderate burn upon the surface is to get it covered in from the external air as speedily as possible, and restored to the normal temperature of the body, in other words, warmth and occlusion from the air are the means of checking the pain, and checking the shock. You will see why this must be so. The skin is burnt off. These terribly sensitive nerves are all exposed to a different temperature and they are in great pain from this exposure. There is no cure for it but to make some sort of an artificial skin, which shall cover them in from the air, and restore the temperature and keep them still. That is one treatment which is perhaps the earliest and most important of all. Nothing else does any good until this is done. But other methods of treatment also are important. It is important to give stimulants, and to give opium in the first stages of this pain and shock. Opium should be given gradually and cautiously, until the patient is quiet and easy; and stimulants freely in the period of collapse. Then the patient should be kept warm, and the burnt surface covered in from the air. This expresses the very simple rules of the earlier treatment of burns. In carrying them out some little judgment is necessary. Supposing, for instance, the patient is a child, who has fallen partially, that is the legs or arms or some part of the body, into boiling water. The clothing is on. The child is scalded through and through under the clothes; and the cuticle is all loosened and ready to peel off. If we can preserve that cuticle without peeling off, that is the best covering for the burn itself; and if that is stripped off, it is a great loss to the patient, increasing the suffering and preventing repair. In taking off the clothing we are apt to destroy all that cuticle; and hence comes the important rule that no clothing should be drawn off from a burned patient; but everything should be sacrificed without consideration as to value; slit down with sharp scissors, and laid off so that the cuticle may be left upon the part. That is a very important point.

Next to that, the burn being seen, what shall be applied? Anything that will cover it in from the air. According to the degree of burn various substances may be used. If we accidentally get the hand for a moment upon a hot stove and withdraw it and find it reddened and vesicated over a small surface without the epidermis being actually denuded, that form of burn will be relieved, as regards pain, by sprinkling it over with common table salt. That is the common expedient of cooks. They are being burned here and there all the time. They wet the part and cover it instantly with salt, and the pain is relieved. A similar treatment, a very good one, is to tie the part up at once in dry cotton batting; and cover it in from the air in that way. That also relieves the pain to a very great degree.

For a person with burns so severe that the skin is peeled up, and a bubble of fluid is formed under it, the edge is denuded and serum is flowing out, in that case, the salt is not applicable; neither is the cotton batting. The best treatment for that is to dust the part over with flour, and allow a species of artificial scab to form over the part, which is then loosely bandaged. Any dry or innocuous powder, like flour, or powdered starch, or rice powder, is perfectly good to cover temporarily a burn. It shuts it in from the air, and makes a very good temporary dressing.

Again, another class of substances which exclude the air almost better than anything else are those which contain grease, or fat; any form which is free from salt, and which is not rancid will do for this purpose. The simplest and most applicable, usually, is olive oil. Castor oil is equally good. Castor oil is an irritant to the mucous membrane of the bowels, but not an irritant to a granulating surface. It is innocuous, smooth, thick, holds its place well. The fat of mutton is good. So are the simpler salves, as rosewater ointment, or benzoate of zinc ointment. These common remedies are generally used first; and nothing affords the relief that the rapid pouring on of some soft, soothing form of oil or grease does upon the surface. The pain is allayed very soon, and the part is protected from changes of temperature and from the irritation of the air. One of the common remedies used, which is very good and used largely, is what is called carron oil, made of boiled linseed oil and lime water. This makes a nice covering; soothing and cooling for a burn. The only objection is the odor; which in burns about the face is very disagreeable from the smell of the linseed oil. This can be overcome, to a certain degree, by the use of some simple perfume. In all burns about the parts distant from the nose it is as good as anything you can possibly put on.

An artificial cuticle made in any way is good for large and deep burns. Sometimes it is made by dissolving gum arabic in water with molasses; sometimes from various forms of gluten; anything which will form a scab on the surface in drying. It must be unirritating, and it must dry in the form of a scab. Now, this is an excellent application, makes the patient perfectly comfortable, and supplies the place of the lost skin. Unfortunately it is apt not to be permanent; and has occasionally to be renewed. The reason that it is not permanent is twofold: in the first place from the slight movements of the patient; and in the next place, every burn in this class of burns pours out serum or pus, and these lift up and burrow through the artificial cuticle, and it requires either to be taken off, or patched, occasionally.

So much for the earlier treatment of these burns. As for the later treatment, then we come to the period of suppuration, which is a peculiar and very tiresome one. The ulcerations of burns are peculiar in this way that the granulations are very large and florid and sensitive. It seems as if nature was making an extra effort to repair the burn, and instead of granulating quietly, as the ordinary ulcer on the leg will do, when not inflamed, this turns out masses of papillæ-like growths, which are made up of little masses of cells with a vessel and nerve in them; active granulations which occasionally become watery and œdematous and swollen, and bleed easily at the slightest touch, and are very sensitive. They are what we call in the ordinary ulcer exuberant granulations, or "proud flesh." This is the common form of healing of a burn; and it gives a great deal of trouble in taking care of it. It overgrows, so to speak, in repair. It rises beyond the level of the original parts. It is extremely sensitive, and it secretes a great deal of pus.

The oily applications, or the artificial cuticle, are generally the best things for this sort of case also, to allay the irritation. We should not, I think, look upon the pus which is developed upon these surfaces as an unmixed evil. It is a good covering; a poultice to the part; shields it from the air, and enables healing to take place beneath. You no doubt are familiar with the fact that healing by granulation goes on rapidly under the suppurating fluid, frequently; and although the suppuration is excessive and is to be cleansed well, it is a question whether cleansing it too often does not interfere with the process of healing. At this later stage, when suppuration is going on so rapidly; it is difficult to do much with the artificial cuticles; and we have to trust to what are called open dressings, and to change them. To change them often is productive to the patient of terrible shock and terrible suffering; and this is especially the case with children, who, of course, are unwilling to reason, cannot reason on the treatment which is being pursued, but dread the dressing as they do almost a sentence to be flogged; and scream and cry and exhaust themselves in anticipation of it, whenever it is about to take place; therefore it has been found, that frequently, in these burns it is not best to dress them too often; and instead of being kept in a state of most scrupulous cleanliness, they had better be dressed once in forty-eight hours, rather than in twenty-four, since the suffering is less, the shock is less, and the patient gets well quicker.

Nowadays repeated attempts, and sometimes successful ones, have been made to apply antiseptic methods to the subsequent treatment of burns; and so far as they can be used they are extremely useful, but the difficulty is in dressing often; in not allaying pain; and in destroying too much, sometimes, the covering of suppuration. The various gauzes are not very well adapted to apply to the granulating surfaces of a burn, because the fine web of the gauze catches on the smaller granulations and is washed off by suppuration; or, if it sticks, too great pain occurs in detaching it. On the whole, probably, these cases get along about as well with the treatment by the oily applications; but when we come to a much later date, when the acuteness of the burn has largely subsided, and when we have left a chronic indolent ulcer of large extent, no very sensitive, as it is not in these later stages, which cannot heal, then the method of skin grafting, and especially the more modern method known as Thiersch's, by laying on thin slices of cuticle and protecting the whole by a water-proof covering of thin rubber, is extremely useful and extremely comfortable; and this treatment may be used in the latter stages of burns with great success.

When called to a burn, we are to allay pain, and give stimulants, at once. Be excessively careful how the clothing is got off. If a child is burned badly, put it to bed under a cradle; and apply the dressing you need. Apply warmth at once. Keep up the bodily temperature; for, strange as it may seem, while the first suffering is from the intense heat of the burn, the subsequent suffering is from collapse and coldness; and you want to restore the circulation and the natural warmth of the body. Give opium and stimulants and warmth. Get the clothing off carefully, and dress the burn temporarily, at any rate, with the first bland agent which is at hand, which will cover it in from the air. Subsequent dressings are to be made infrequently. Watch for complications of the brain, or chest, or abdomen; and treat them as well as you can; and, in the later stages, when the exhausting period of suppuration comes on, the patient must be treated precisely as in other cases of hectic; and tonics, stimulants, etc., used, to try to make up for the great waste of this suppurative process.

Unfortunately this is not all that is liable to follow. Unfortunately this exuberant granulation of the burn, this peculiar form of ulceration and reluctant healing, is followed by an unusual deposition in the scar of elastic or fibrous tissue, and by intense contractions; and that is the thing you must guard against all the time. The fingers, the elbow-joint, the knees, the neck, all are the seat of disastrous, contracting cicatrices. The same condition also affects burns about the orifices of the body; the mouth, or nose, or vagina; the mouth and the nose especially, which are frequently burned, subsequently heal in such a way that the mouth may be drawn down into a puckering ring where it is impossible to use the lips well, or the nose contract so that the patient cannot breathe through it with comfort. Also we must be on our guard lest contiguous surfaces contract adhesions and grow together. This is especially true of the fingers; which, if they happen to be badly scalded and lose their cuticle, the whole cuticle coming off like a glove, subsequently will heal with adhesions across, and tie the fingers together in a web, if we are not extremely careful. This is doubly true of a little child, where they are intolerant of treatment, and cannot understand what we are trying to do. It is of vast importance, in treating burns of the hands and of parts contiguous, that they should be kept strenuously open to prevent subsequent contractions and adhesions between the fingers. To prevent the contraction of parts, pulling up of the knee, etc., we have to have recourse to mechanical means, and apply splints to keep the parts well straightened, while healing is going on. On the hand, for instance, a dorsal splint and the fingers strapped back as firmly as possible, if there is danger of contraction; or an outside splint may be made of tin, to keep the arm straightened at the elbow.

If the skin is badly burned in the neck, the consequence is, first, pulling on the chin; then on the angles of the mouth; then on the eyes; so that, in some extreme cases, the patient has the chin drawn down nearly to the sternum; cannot close the mouth; cannot close the eyes; and is, of course, a horrible object, and very miserable for the rest of his life.

Here I would like to call your attention to a treatment, which has been successfully used in Vienna, and some other places, in cases of bad burns in the state of cicatrization, by hot water; keeping the part, if it is a limb, constantly immersed in hot water, kept at the temperature of the body. Baths have been contrived for this, with a little [illegible] lie, and the part be nicely submerged; or else a little tank has been constructed in which the arm can lie, and the temperature be kept steady; and there is a little feeder of warm water [illegible] tion. No dressing is needed on the burn whatever, except the water. The burn heals in the water nicely; and it is claimed that it heals with a soft and supple scar. This treatment certainly is worth following out.

Provided we are left, after all our efforts, with distortions and [illegible] We have spoken of the means of skin grafting to enable a large ulcerated surface to heal. I think the method of Thiersch is the best. Now you must bear in mind that skin grafting by taking minute points as large as a grain of wheat from the epidermis has been used fifteen or twenty years, and is successful, but slow. Thiersch's method is more rapid. The cicatrices, however, after they have contracted, have to be treated in another way; and that is by section, and transplantation of flaps of skin, if possible, into the diseased surface. This sometimes can be done with great advantage in the palm; especially in the elbow; care being taken to cut out all the cicatrix, and match the new flap to skin which is sound. It is extremely difficult to make cicatricial tissue unite to sound skin without suppuration, and without giving way, and without a new ulceration; so that, if possible, a part must be selected where the whole scar is cut out, and a nice bed of sound skin left all around; and a large flap of sound skin taken and turned in, with a nutritive pedicle left. I would emphasize this point, that you must cut away all of the scar; and, also, that when you want to make a flap to turn in, you must make it a great deal larger than to fit the bare spot, for it shrinks to one-half the size.

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Original Articles.

A CASE OF CALCULOUS PYELITIS WITH COMPLETE SUPPRESSION OF URINE FOR FIVE DAYS. RELIEVED BY OPERATION.

[illegible]

In cases of calculous pyelitis we may have suppression of urine brought about in several ways.

It may be induced by the presence and irritation of the calculi in the pelves of the kidneys, without any stoppage of the ureters. Kidneys which contain stones often undergo inflammatory changes which gradually disable them, and thus a diminution and final cessation of function may be brought about. Even when the pathological changes have not progressed very far, such kidneys may not be able to bear any extra work that is put upon them. In one calculous patient, I [illegible] have seen immediate suppression follow an operation for appendicitis, with moderate peritonitis. The kidneys showed interstitial changes which were not considerable, and yet their power for work had been so diminished that they were overcome by the ether, and by the increased elimination required by the absorption of inflammatory products from the wound and from the peritoneum. Although the calices were occupied by many stones in this case, there was no obstruction to the flow of the urine.

The way, however, in which calculi more commonly cause suppression, is by obstructing, or occluding the ureters. The condition under which this occurs, and the mechanism by which the suppression is induced may vary considerably, as follows:

(1) Both ureters may be simultaneously obstructed.

(2) One kidney having been previously destroyed or disabled, the ureter leading from the remaining kidney may be stopped.

(3) One ureter only being occluded, the irritation of the stone may by some inhibitory effect lead to a cessation of function in both kidneys.

There may be some doubt whether the case that I am about to report belongs in the first or second category. From the observations I was able to make, it seemed probable that the right kidney was more seriously affected than the left, that its ureter had been blocked for a longer time, and that finally it was the obstruction of the left ureter that caused the total suppression.

E. A. P., a strong man of sixty, was seen by me in consultation with Dr. G. K. Sabine of Brookline, Mass., on December 12, 1892.

His previous ailments had not made a great impression on him, and it was therefore difficult to be sure of his accuracy in his observation of his symptoms. His history was as follows:

He had always been subject to rheumatism. Seven years ago he had an attack of renal colic in the left kidney and passed two stones. He then was well until two years ago, when he had an attack of pain in the right side and passed a stone that was larger than the previous ones. The pain in this attack was thought to be due to rheumatism, and was not so severe as is usual in renal colic, so that its origin was not suspected until the stone was passed.

He was then free from trouble until November, 1892. Early in that month he had some twinges of pain in the right side, which were thought to be due to rheumatism. They passed off. Then a similar pain came in the left side on the 19th of November. He sent for Dr. Sabine on the following day. The pain in this attack was not severe, but was recognized as similar to that which he had had two years before, when he passed a stone. He gradually got better, and on December 5th he went to his business in town, but was seized while there with such an acute pain in the back that he went directly home again. This attack was so severe as to throw him into a profuse perspiration, and the pain was felt through the abdomen as well as in the back; and was distinctly referred to the left side.

On December 6th it was noticed that he was not passing any urine. The anuria continued through the 7th, 8th and 9th. On the latter day a catheter was passed, but only a drachm of turbid urine was obtained. From that time there was no water, up to the time that I saw him on the evening of December 12th.

At my examination he looked quiet and easy, not at all like a sick man; he had no nausea, no headache, no drowsiness, — in fact, he said he felt perfectly well. I made an examination, but could detect nothing, either in the abdominal or lumbar region. There was no tenderness anywhere, even to forcible pressure. I advised that he should take considerable water, should have a mustard poultice over the kidneys, and that sugar of milk should be administered freely through the night.

I saw him again the following day. He had passed no urine. Dr. Sabine thought he was a little more dull. His tongue was very dry, but he had no pain, except that occasioned by a slight flatulence. His pulse was 76 and of fair strength. He said that he had some relish for food, and no nausea. I again examined his abdomen, and thought there was a little more resistance in the right renal region than in the left. He also at one time thought that he felt a tenderness there during my examination. The rectal examination showed a prostate of moderate size, but nothing above the prostate, either of tenderness or hardness, in the region of the ureter.

The evidence seemed to show that the function of the kidneys had been interfered with by some mechanical obstruction, probably a stone, and an operation was advised for its removal.

In view of the total suppression of urine, accompanying the attack of pain in the left side, it was thought probable that the right kidney had previously been rendered useless, either by destruction of its secreting portion, or by blocking of its ureter, and that now a calculus had shut off the secretion of the remaining kidney. There was no evidence to indicate the seat of the calculus, and it was designed to open the abdomen by a median incision, to examine both kidneys and their ureters, and then to proceed, in the best way possible, to the correction of whatever condition was found. This plan was agreed to, and the patient having been removed to a private hospital, the operation was performed on the morning of December 14th, between seven and eight days after the establishment of complete anuria.

On the morning of the operation he had begun to show evidence of constitutional disturbance. The pulse and temperature had risen decidedly, and there was some commencing mental hebetude.

The operation was done under ether. The hand was introduced into the abdomen through a median incision between the umbilicus and pubes. The right kidney was felt to be enlarged to perhaps three times the normal size; its surface was irregular and divided into large lobes. Careful palpation of the ureter was difficult, on account of the abundance of fat in the post-peritoneal tissues, but no hardness suggesting a stone could be felt anywhere in that pelvis or ureter. The left kidney was of normal size, and its pelvis was not distended with fluid. The ureter on this side was followed down with great care, from the kidney to the bladder, but nothing like a stone could be detected. The bladder was contracted in the pelvis. The condition of things thus far confirmed the previous opinion, that the right kidney was previously disabled, and it also strengthened the belief that the stone which caused the final suppression was blocking the left kidney.

With the object of more carefully palpating this organ, which was deeply buried in fat, I made an oblique incision in the left loin and uncovered that kidney. With one hand in the abdomen and the other in the wound in the loin, very careful search of the pelvis of the kidney and of the upper part of the ureter was possible, but the result was negative.

The operation was now abandoned, as there was no light by which further action could be guided, and the abdomen was closed; the wound in the loin being drained and partly closed. The opinion was expressed to the friends that possibly our thorough manipulation would be found to have dislodged the obstructing body, but that failing in this we had accomplished nothing.

The patient recovered from the ether well, and about three hours later, when I saw him, there was a slight escape of urine through the urethra, and on passing the catheter, thirty-seven ounces of light-colored urine were drawn. This flow continued, so that partly by the natural efforts and partly by catheter, two gallons of urine were obtained in the first twenty-four hours. In the second twenty-four hours, the amount fell to about five quarts, and after that there was a steady, gradual diminution, until the daily amount had reached the neighborhood of seventy ounces, at which it held.

Convalescence was satisfactory, and about a fortnight after the operation I washed out the bladder with a litholapaxy pump, obtaining a few grains of calcareous matter, thus completing the evidence that the ureter had been stopped by a calculus, which had been displaced by my manipulations.

In this case the condition of the left kidney is to me of especial interest. The fact that the pelvis was not distended with urine seems to show that the function of this organ was stopped at once by an inhibitory action due to the irritation of the calculus in that ureter, and was not due wholly to the obstruction to the flow of urine and to the back pressure exercised by this obstruction. This cessation of the secretion of urine in this kidney would explain the short duration of the pain when this ureter was blocked. Had the urine continued to be excreted, the internal pressure in the kidney would probably have caused a longer duration of pain, and it would have been much more severe in character.

A laparotomy for the determination of the site of a calculus in the ureter is no new thing, and its importance has been alluded to by me in an article upon "The Surgery of the Ureter," read before this Association, and published in the *American Journal of the Medical Sciences*, for January, 1892. In cases previously reported, this exploration succeeded in locating the position of the stone and in making its removal possible.

The case which I have reported illustrates another way in which this operation may be of use, by enabling us to assist the passage of the stone along the ureter, and thus to relieve the dangerous suppression caused by its presence there. The calcareous matter pumped from the bladder in my case, was so small in amount that, put together in the form of a consistent stone, it would not make a mass which one would expect to recognize by palpation through the walls of a ureter surrounded by thick layers of fat, as they were in this instance. The accidental efficacy of the kneading which was given to the kidney and ureter during my thorough examination of them, would suggest the importance of this massage being systematically carried out in a similar case, where a calculus could not be discovered.

Shortly after the occurrence of my case, I found in the *Annales des Maladies des Organes Genito-Urinaires* for January, 1892, the report of a case by M. Duffau-Lagarosse, which in many respects would seem to be very similar to the case which I have reported.

The patient, a man of fifty-nine, had not urinated for eight days. Three weeks before he had been seized, without appreciable cause, with a severe pain in the right lumbar region. This was accompanied by vomiting and scanty and bloody urine. After this there were fifteen days of comfort, and then the complete anuria appeared.

A calculus being suspected, an incision was made into the right kidney through the loin. Nothing was found, and the patient died the following day. At the autopsy the left kidney was found to be completely destroyed, while the right ureter was stopped by a calculus of the size of a grain of rice, which was lodged in the lower part of the canal.

The reporter draws two conclusions, first, that anuria induced by reflex action is a rarity; and, second, that the diagnosis of the seat of the calculus is very difficult, and indeed impossible.

In this case the small size of the calculus and its lodgement in the lower part of the canal, would probably have made its discovery difficult or impossible. Had the kidney continued to secrete urine behind so small a stone, its passage onward into the bladder would probably have been assured. In the absence of this pressure from behind, it would seem as if this were distinctly a case in which a median laparotomy and massage of the ureter from above downward might have accomplished the escape of the calculus and the recovery of the patient.

I cite this case simply to show that this condition is one which we must be on the lookout for.

The subsequent history of the case I have reported, is interesting in some particulars.

Not long after the patient had gone from the hospital, while he was moving about the house freely, he had another attack of discomfort in the left side of the abdomen, accompanied by a chill and high temperature. I saw him after this had persisted for a good many hours, and found him passing an abundant quantity of water, but still suffering from discomfort through the lower part of the abdomen on the left. Careful examination detected nothing abnormal in that region.

Remembering the experience of the previous attack, I made considerable massage through the abdominal wall, down along the course of the ureter and as deeply into the pelvis as I could reach. When I saw him a day or two later, he told me that from the time of my examination he was comparatively comfortable, and had no more of that seriously uncomfortable pain from that time. A week or two later a stone was passed that was decidedly larger than the calculous bits that were obtained by pumping after the operation. I have not seen the patient since, but have heard that he has had still another attack of pain, with again the passage of a stone.

The conclusions which I should draw from the experience gained in this case, and by a study of the literature that I have made, are:

(1) That in a calculous patient, or in a patient with a distinct attack of renal colic, the suppression of urine should be regarded as directly due to the stone,

and that in the majority of cases, both kidneys will be found to be disabled; for the cessation of the function of a healthy kidney, due to the irritation of a stone in the opposite ureter, must be very rare.

(2) These cases should be treated by operation as soon as it is evident that the function of the kidney has come to a standstill, as there is little chance of the stone being pushed along the ureter when the kidney is no longer excreting urine behind it.

(3) In the absence of any evidence as to the location of the calculus, the first step in such an operation should be a median laparotomy, with the hope of discovering the whereabouts of the calculus, in order to proceed intelligently for its removal.

(4) If by this examination no calculus can be found, so that further operative procedure cannot be decided upon, a steady massage of the pelves of the kidneys, and of the ureters, from above downward, should be practised, in the hope of dislodging or breaking up a small calculus, if such exists.

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LONG-CONTINUED BLADDER DRAINAGE.[1]

BY PAUL THORNDIKE, M.D., BOSTON.

The employment of absolute rest has long been recognized as an essential in the treatment of most forms of inflammation which affect the genito-urinary organs and especially the bladder, it being a comparatively common procedure to drain the latter organ for a few days either through the urethra or perineum, in order to obtain for it as complete a rest as possible under certain conditions. The long continuance of such drainage is less often carried out.

The writer offers these remarks on a few cases of long-continued drainage in the hope that they may serve as a basis for such a discussion as will demonstrate the views which different gentlemen present may hold on this subject.

There are unquestionably cases of prostatic and vesical disease of obstructive origin where the condition of the bladder demands drainage as a means of relief. In this way is provided rest from the bladder's irritable contractions and also from the pain and discomfort which catheterization frequently repeated for long periods of time, almost inevitably induces. Such cases are common enough, and the relief obtained by proper drainage is prompt and sufficient. Drainage may be afforded through a catheter tied into the bladder and removed only to be cleaned, or through a perineal wound, with or without a drainage-tube. In many cases the catheter drainage suffices, as was true in a case to which I will ask your attention in a moment; and in others the perineal outlet is preferable, because the operation is rendered necessary for diagnostic or therapeutic purposes aside from the question of drainage, or because the mental condition of the patient is such as to render it very difficult to keep a catheter of any sort in his urethra. It is the writer's belief that perineal drainage is a more effective way of keeping the bladder empty than drainage through the urethra can be, and should be the method chosen if the conditions are such as to warrant its use. That these methods of drainage may often be continued for a long time with the greatest advantage to the patient is unquestionably true, and that a permanent drainage of the bladder adds many years of comparative comfort to many lives is doubtless also true. The following case well illustrates the efficiency of long-continued drainage through a catheter in the urethra:

C. C., a man of sixty-six years, came under the care of Dr. Watson and myself with an obstructive prostatic hypertrophy of four years' standing. Had had an overflow bladder for months. In spite of the utmost care [he was put to bed and his bladder emptied with a soft catheter, a week being employed in completely emptying the organ] he developed a subacute cystitis, with coated tongue, high temperature, restlessness, anxiety, marked lassitude, etc. Did not improve. Became worse, and at the end of a week or ten days was critically ill. Specific gravity of urine 1,009. Soft rubber catheter tied into bladder and left in for three weeks, during which time patient was kept in bed and the catheter was removed only for a few moments at a time to be cleaned. On the second day improvement began. Temperature became normal, and at the end of two and a half weeks the urine which had been full of pus became clear, with specific gravity 1,017; and in three weeks patient was up and began a regular catheter life. Since then he has remained well. It is the writer's firm belief that this patient would have died if the continuous drainage had not been instituted.

Let me make brief mention of two other cases of Dr. Watson's and my own, where the drainage was through the perineum, and was kept up for a much longer time.

G. T., age sixty-seven years, had had an obstructive prostatic hypertrophy for seven or eight years, and an overflow bladder for two months before beginning to use a catheter. Had an attack of retention which he relieved for himself by the passage of a catheter. This was followed by loss of voluntary urination and a subacute cystitis. Specific gravity 1,009; trace of albumen; no casts found. For four years he did well with regular catheterization. Then began to have pains along course of urethra and frequent and painful micturition, which became unbearable; and patient's physical condition became very bad. Also had recurrent attacks of epididymitis. Operation, November, 1891. Perineal section for purposes of exploring and draining bladder, which was found coated with phosphatic deposit. This was curetted thoroughly and soft catheter tied in. For two and a half months it was left in continuously, being removed only for cleaning. Then it was provided with a stopcock, and has been worn constantly for the nineteen months since the operation. Two months after the operation the urine had cleared up; specific gravity was 1,015; and patient's physical condition was completely transformed. He now wears the tube without inconvenience, holds his urine for four hours comfortably, and says he feels ten years younger, and can work as well as ever.

In this case absolute relief of most distressing symptoms, including recurrent attacks of epididymitis, was attained. These symptoms had arisen during a well-conducted and regular use of the catheter. In this case a suprapubic prostatectomy would probably have proved fatal as the comparatively trivial operation which was performed was the cause of great shock.

A similar case was R., age sixty years, who had had prostatic symptoms for five years, and for three years had been obliged to use a catheter regularly. Soon after beginning its use he started up a urethritis, which persisted up to time of operation. Then came a cystitis which gradually increased in severity, and was much aggravated by some anterior strictures which appeared (undoubtedly a result of the catheterization) and contracted down to 16 French. At the operation the strictures were cut internally, a perineal section done, and catheter tied in. Moderate bilateral and middle-lobed prostatic hypertrophy was found. Patient did well, and at once began to pick up. Continuous drainage was maintained for two months; and then, as in the other case, the urine was gradually allowed to collect in bladder until four-hours intervals were established. Symptoms at once ceased; urine cleared up; and now (eight months after operation) patient is perfectly comfortable, is wearing the perineal tube, and refuses to go back to catheterization or to have any radical operation done. He is about, in good health, and able to work comfortably.

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[1] Read at the Annual Meeting of the American Association of Genito-Urinary Surgeons at Harrogate, Tenn., June 14, 1893.

The application of this idea of bladder drainage has been extended to include certain cases of suppurative pyelitis by some surgeons, notably Mr. Reginald Harrison, of London, who once said in a lecture:

"There are several advantages which might be urged in connection with what I would speak of as the tentative employment of perineal drainage in cases of kidney suppuration in the male, where from the symptoms and state of the urine, it was probable (*a*) that suppuration was going on in one or both kidneys, and (*b*) that the seat of suppuration evidently had a free access to the ureter: (1) Because perineal urethrotomy might be made to afford a means of continuous drainage, with or without a drainage-tube, at little or no risk; (2) because there is no fear of attacking the wrong kidney; (3) because it does not preclude the employment of further and more direct measures such as nephrotomy or nephrectomy, should these prove desirable."

He then goes on to report several cases, in one of which the drainage was kept up for six weeks or more, and made a good (and Mr. Harrison thinks a permanent) recovery. He concludes his remarks by saying that cases which are not likely to be remedied by such a proceeding are those of calculous pyelitis and extraneous abscesses opening into the kidney or ureter and discharging their contents into the bladder. In one case which he treated in this way the pus proved to come from a psoas abscess which had opened into the kidney. In this instance the patient received great comfort from the drainage, although, of course, no permanent good came of it. The urine remained acid in spite of the large amounts of pus which it contained, and the patient was spared much pain in voiding it.

The only case of the sort which comes within the writer's experience was one on the service of Dr. F. S. Watson, at the Boston City Hospital. The patient had perineal drainage for three months for what was thought to be a cystitis of six months' duration. The case proved to be one of calculous pyelitis, and is now rapidly convalescing from a successful nephro-lithotomy. Even in this case three months' perineal drainage gave great relief to the symptoms of pain, irritability, etc., which were not entirely reflex.

Leaving out of consideration cases of calculous pyelitis as manifestly unfit for such a method of treatment, there remain to us cases of renal suppuration of tubercular origin, and these probably form a large percentage of all cases of renal suppuration; those from extension upward of a purulent process; and those of suppurative pyelitis from other causes than those mentioned, chief among which, perhaps, are the cases due to crystalline elements in the urine.

The advisability of operating upon the tubercular cases is very doubtful, still the field is large enough to make a consideration of this method of treatment a very interesting one. In order to be at all in sympathy with it, one must agree with Mr. Harrison that such perineal drainage is more efficacious than catheter drainage through the urethra, and that the operation for such perineal drainage is simple, easily performed, and not attended with serious after-effects.

Mr. Harrison has also cured some very stubborn cases of chronic urethral discharge, which had baffled all previous attempts, by performing a perineal section, and thereby at once keeping the urethra very clean and very quiet.

Mr. Hall, in the London *Lancet* for February 19, 1870 (Vol. I, page 262), reports some cases in which he cured long-standing perineal fistulæ in this way.

It would seem that certain cases of spinal disease complicated with a chronic cystitis, as so many of them are, might also be made far more comfortable by a permanent drainage through the perineum.

In conclusion, the writer wishes to make no claim for this procedure as in any way a well-defined routine measure of treatment. It is undoubtedly a method of value in some cases; and he would suggest that among such cases may very properly be:

(1) Some cases of vesical and prostatic disease where the operation is done to palliate symptoms, when a radical operation is inadvisable or impossible.

(2) Some cases of suppurating pyelitis, not of calculous origin. Most tubercular cases are also probably outside the field of this treatment. Here the drainage would be tried as a palliative measure before resorting to severer ones, such as a nephrotomy.

(3) Some cases of obstinate urinary fistulæ.

(4) An occasional chronic urethritis.

(5) Cases of chronic cystitis, due to disease of the spinal cord.

The writer has not spoken of suprapubic drainage of the bladder in cases such as are instanced in this paper, because he has had no personal experience with that form of drainage in such cases.

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SUBPHRENIC ABSCESS, WITH SPECIAL REFERENCE TO THOSE CASES WHICH SIMULATE PYO-PNEUMOTHORAX.[1]

[illegible]

[illegible]

SUBPHRENIC ABSCESS FROM PERFORATION OF THE VERMIFORM APPENDIX.

That perforation of the vermiform appendix may give rise to abscess which extends to the arch of the diaphragm was observed by Duchek,[16] Bamberger,[17] Bernheim,[18] and other more recent writers, who have called attention to the interesting auscultatory features which air-containing abscesses in this region may present. Cossy[19] applies the term "false pneumothorax" (faux pneumothorax) to these misleading signs, and relates two cases of perforated appendix which presented this condition. In one case, on section, the anterior surface of the pericardium, when percussed, resounded like a drum, suggesting pneumo-pericardium, but this sound was found to be transmitted from the air-containing abscess beneath.

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[1] [illegible]

[illegible]

Similar cases of subphrenic abscesses of the right side with amphoric signs in the thorax are recorded by Jaffé[20] (Hamburg) and Herrlich,[21] who both operated unsuccessfully by thoracotomy. Large air-containing abscesses were found between the diaphragm and the right lobe of the liver and there was fistulous communication with the perforated appendix.

Starke[22] records a case of the same kind in which spontaneous cure followed the evacuation of the abscess through the bronchi.

Pätsch[23] effected a cure in the case of a boy, eighteen years old, who was seized four days before admission to the hospital with signs of peritonitis in the right iliac region. Two weeks later pain developed about the sixth and seventh ribs and there were signs of fluid encroaching upon the thoracic cavity without cough or expectoration. Exploration discovered foul pus, which soon after found exit through the bronchi. Incision above the seventh rib in the anterior axillary line resulted in early recovery.

Taylor[24] relates a case in which a large abscess was found between the liver and diaphragm caused by extension from a sloughing appendix.

Fitz[25] in his paper on "Perforating Inflammation of the Vermiform Appendix," read at the first meeting of this Association, says: "The extension of a secondary paratyphlitis may cause perforation of the diaphragm with a consecutive pleurisy or pericarditis." Such a case was then mentioned by Dr. W. W. Johnston, with the remark that such an untoward event would be rare at the present time, owing to early operative interference.

Leyden,[26] however, has lately recorded a case of "pyo-pneumothorax subphrenicus" in which an abscess containing more than two litres of pus had formed above the right lobe of the liver, having extended to this region through retro-cœcal suppuration, the result of perforative appendicitis. Intercostal drainage failed to cure, and after death it was found that the abscess had gone through the left wing of the diaphragm also. The hole in the appendix had closed.

PERISPLENIC ABSCESS.

Suppuration in the splenic region, except as the result of traumatism or pyæmia is rare. But Zuber,[27] in an article on perisplenic suppuration, reports cases of abscess in this region, the result of circumscribed peritonitis. They were bounded by the spleen, stomach, colon and diaphragm, and were said to have been caused by an "infectious splenitis" attributed to the poison of intermittent fever. Cases by Hilton Fagge, Grisolles, Villemin and others are quoted.

Wardell[28] refers also to the influence of malaria in causing latent splenic inflammation which may result in abscess below the diaphragm and secondary pleurisy or empyema. The same accidents may happen which result from abscesses in this region from other causes. The lung, stomach, or colon may be perforated.

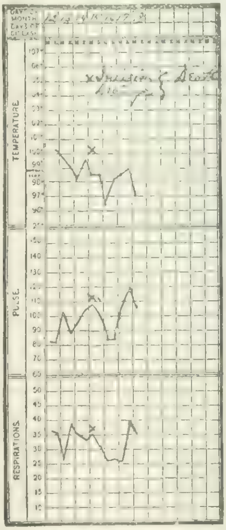
Jaffé[29] tapped a subphrenic abscess at the angle of the scapula and removed bloody, offensive pus. After death the spleen was found to have been ruptured by an injury.

Herrlich[30] reports a case in which the diaphragm was pushed up to the third rib by a large metastatic abscess in the splenic region. The signs of pleuritic effusion were present and pus was obtained by aspiration. The patient died before thoracotomy could be performed and the pleura was found to be free.

Councilman[31] reports the post-mortem examination of a case of perisplenic abscess with perforation into the splenic flexure of the colon, followed by thrombosis of the splenic vein and multiple abscesses of the liver, probably the result of an injury.

SUBPHRENIC ABSCESS FROM PERINEPHRITIC INFLAMMATION.

While lumbar tumor usually characterizes perinephritic abscesses, they may develop round the upper part of the kidney and are then contiguous to the diaphragm. By extension they may penetrate the lung or pleura. It was in this class of cases that the late Dr. Henry Ingersoll Bowditch, in a timely article on "Perinephritic Abscess,"[32] urged the danger of chest complications and the importance of early and radical operation. He reported several cases which had come under his care. Roberts,[33] in a paper on "Perinephritic Abscess," also calls attention to the importance of chest symptoms in such cases. But they form a class by themselves, as a rule, with special symptoms, and I will not allude to them further except by the report of a case which illustrates the above-mentioned dangers.



Case VI.

Case VI (Mason). *Perinephritic abscess involving the diaphragm and pleura.* — A man, aged thirty-three years, entered the hospital with the history of pain in the right hypochondrium for a year, but he had worked until the last week. He was emaciated and cachectic and had bulbous fingers. There were signs of fluid below the right scapula and tenderness over the lower intercostal spaces in the axillary line, with retraction of the same spaces in front, as if the lung were adherent. Liver and spleen enlarged and easily felt below the ribs. Urine, albuminous; large and small hyaline and granular casts. Ten ounces of foul-smelling pus were withdrawn by aspiration at the eighth space, posterior axillary line. The proximity to the diaphragm, the adherent lung, and the pain, gave rise to the opinion that there was a latent subphrenic abscess with secondary empyema. The enlarged liver and spleen and the urinary changes suggested amyloid degeneration. An incision was made in the ninth space behind, and the cavity was irrigated, but the patient soon died from septicæmic exhaustion. Cough, expectoration and râles, chills, sweating and vomiting had been noticeably absent. The temperature was subnormal.

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[19] Sur le Pneumothorax engendré par des Gaz provenant du Tube digestif. Archives gén de Méd., 1879, ii, 526.

[20] Deutsche med. Wochenschrift, April 16 and 23, 1881.

[21] Loc. cit., 1886, xii, s. 139.

[22] Charité Annalen, 1882, s. 629.

[23] Loc. cit., 1882, s. [illegible].

[24] Guy's Hospital Reports, vol. xix.

[25] Transactions of Association of American Physicians, vol. i, 1886.

[26] Berliner klinische Wochenschrift, November 14, 1892.

[27] C. Zuber: Des collection spurulentes péri-spléniques. Revue de Médecine, Paris, 1882, vol. ii, p. 928.

[28] Contributions to Pathology and the Practice of Medicine, by John Richard Wardell, M.D., Edin., p. 72.

[29] Ueber subphreniche Abscesse: Deutsche med. Wochenschrift, April 16 and 23, 1881.

[30] Deutsche med. Wochenschrift, 1886, s. 139.

[31] Johns Hopkins Hospital Bulletin, No. 10, January, 1891.

[32] Medical and Surgical Reports of the Boston City Hospital, vol. i, 1870.

[33] Perinephritic Abscess: American Journal of the Medical Sciences, April, 1883.

[illegible]

Autopsy: At autopsy the right pleural surfaces were adherent throughout, except at the lowest posterior part, where there was an abscess cavity. Below the diaphragm and surrounding the upper part of the kidney was another abscess, the diaphragm being necrotic. Amyloid spleen and kidneys. Tubercular deposits in lungs and liver.

GALL-STONES.

Gall-stones show little tendency to excite suppurative processes in their vicinity. Fenwick cites five cases in which they had caused abscesses which burst into the duodenum, but such instances are rare and their course is more acute than that of the abscesses caused by perforating ulcers.

SUBPHRENIC ABSCESS FROM CANCER.

Cancer is an infrequent source of sub diaphragmatic abscess, but such cases are referred to by Andral,[84] Habershon,[85] and Fenwick.[86] Neusser[87] relates the following: A woman, aged thirty-six, had a large cavity filled with pus and air between the liver and diaphragm on the right side, communicating with a deeply ulcerated cancer of the pylorus which had been diagnosticated during life. There was perforation of the diaphragm and gangrene of the lung.

LITERATURE.

When we turn to the literature of this subject we find that it is fragmentary, but it is no less interesting to watch the progress of auscultatory science and physical observation than the advance of surgical art in dealing with these difficult cases.

In 1829, Wright[88] records two cases of "pneumohepatic" abscess as occurring at the Baltimore Almshouse. In one there was recovery after the spontaneous discharge of air and pus between the eleventh and twelfth ribs near the spine. Pain, fulness and threatened suppuration at the epigastrium were noted, and were attributed to abscess of the left side of the liver, but the diagnosis was uncertain. In the other case there was a double abscess, containing air, in the lung and the liver, with communication through the diaphragm.

Graves and Stokes[89] record a similar case in which an abscess resting on the convex surface of the liver had involved the lower lobe of the right lung. Incision between the eighth and ninth ribs gave exit to a pint of sanious pus. Through the opening air escaped with force on coughing. The autopsy showed that the diaphragm had been perforated, but it was not clear whether the pulmonary abscess or the one below the diaphragm was primary.

The recognition of the relation between perforating gastric ulcer and the signs resembling pneumothorax has been attributed to Barlow and Wilks, who first reported such a case in 1845, under the title, "Perforation of the Stomach, with Obscure Thoracic Symptoms."[40]

Case. — A female, aged thirty-nine years, was admitted to Guy's Hospital, October 26, 1844. History of gastric ulcer for eighteen months. Two days before admission she had an attack of sudden dyspnœa and intense pain. The epigastrium was prominent, very resonant, and tender. There were signs of pleurisy at the left base, with also amphoric respiration, metallic tinkling, "Punch's voice," and succussion splash. Over the præcordium was a rubbing sound synchronous with the heart beats and heard when the patient held her breath. This was thought to indicate pericarditis. Death took place twenty days after entrance. "The stethoscopic signs, particularly the amphoric respiration, coupled with the severe symptoms, satisfactorily proved to many that the case was one of pneumothorax. Dr. Barlow was opposed to this opinion and persisted in referring the amphoric and metallic sounds to the stomach, and mentioned a case in which a perforation of the stomach had communicated with a large peritoneal abscess." This proved to be the case, and, although there was a pleural effusion, no communication existed between the chest and the abscess below the diaphragm. There was no pericarditis.

Case. — Williams,[41] in 1845, recorded the case of a man, forty years old, who, after dysentery, had an abscess between the right lobe of the liver and the diaphragm, which was later incised at the right hypochondrium. After death it was found that the metallic tinkling which had been observed had been produced by a communication between the abscess and the transverse colon.

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[84] [illegible]

[85] [illegible]

[86] [illegible]

[87] [illegible]

[88] [illegible]

[89] [illegible]

[40] [illegible]

[41] [illegible]

Wintrich[42] says that when he was clinical assistant at Wurzburg a mistaken diagnosis was made in the case of a woman in whom there was a large abscess cavity filled with gas, debris of food, and pus, connected with a perforating ulcer of the stomach. Pneumothorax was diagnosticated from the presence of metallic tinkling and percussion note, amphoric breathing, dyspnœa, cough and expectoration.

Habershon,[43] Bouchaud,[44] Hilton Fagge,[45] Taylor,[46] and others have recorded a variety of cases of this description. Fagge's sixteen cases of "Abscess of the Upper Abdomen" from various causes are especially interesting.

But the subject attracted little general attention until 1880, when Leyden[47] published his well-known article entitled "Pyo-pneumothorax Subphrenicus," a designation which is evidently open to objection, but which explains itself clinically. From Leyden's clinic, through Herrlich,[48] Pfuhl,[49] Scheurlen,[50] and other writers comes a large part of our information on this subject. Leyden's original article related to four cases of air-containing abscess below the diaphragm. After having, in the first case, diagnosticated pyo-pneumothorax in a twenty-three-year-old female, he found, to his surprise, post-mortem, that the signs were produced by an abscess above the liver, which communicated with a perforating ulcer of the duodenum. After this experience he correctly diagnosticated three similar cases, one duodenal and two gastric perforations. All proved fatal in spite of surgical treatment, carried out in one case by Langenbeck. In another case six exploratory aspirations failed to find the abscess, which, after death, was seen to originate in the vicinity of a closed gastric ulcer, which the author regarded as its undoubted cause.

Leyden's diagnostic points were in part:

(1) Previous abdominal symptoms, and absence of signs of thoracic disease in the early part of the illness.

(2) Little displacement of the heart or bulging of interspaces.

(3) Normal respiration under the clavicle, with abrupt transition lower down to the metallic and amphoric sounds which occur in pneumothorax.

But it is to be observed that the heart is often displaced by the coincident pleural effusion, as in Case V, and abrupt change in percussion tone is not always found. Moreover, the lung often adheres to the diaphragm and parietes, with partial loss of contractility, so that, although there may be a diminution in the breath sounds and vocal fremitus, they are not entirely abolished as in general pneumothorax. Cough and bronchial discharge aid us in diagnosticating a circumscribed pyo-pneumothorax.

From Leyden's clinic and other sources, chiefly German, Scheurlen[51] collected 34 cases, including two of his own, in one of which a cure resulted after resection of the ninth left rib in the anterior axillary line. The cause was perforating gastric ulcer. Half the cases were diagnosticated during life and 15 were operated on. Six recovered, but in one only was the cause a perforating ulcer. The earliest cure was recorded by Pätsch in the case of subphrenic abscess from appendicitis quoted above. The seat of the abscess was on the right side in 19 cases; on the left in 15. The causes were gastric ulcer, 11; duodenal ulcer, 4; perforation of vermiform appendix, 6; trauma, 3; hepatic or peri-hepatic abscess, 2; peri-splenic inflammation, 2; cancer of pylorus, 1; suppurating echinococcus cyst, 1; a swallowed hairpin, 1; and in 3 the cause was not determined. Pleural effusion existed in 16 cases; in 6 there was perforation of the lung through the diaphragm; in 2 pyo-pneumothorax, and in several others the deceptive signs which simulate that condition.

Scheurlen regards the absence of the usual causes of empyema, namely, tuberculosis, pneumonia, and the puerperal state (to which might be added the acute fevers), as important in aiding a diagnosis by exclusion. As valuable physical signs, he mentions the friction sound of dry pleurisy near the diaphragm, and the disappearance of the semilunar space in the left side, which occurs in pleurisy with very large effusion only. But without exploratory puncture, Scheurlen thinks that subphrenic abscess can be suspected only, not diagnosticated. He states that the pus is always ichorous, which is questionable. The withdrawal of pleuritic serum from one interspace, and of pus from a lower level is a valuable indication, which was also observed in our Case III.

A more recent communication from Leyden and Renvers[52] reports the cure of a perigastric abscess by puncture drainage. A large trocar was passed through the seventh space and the diaphragm. Through the canula, by means of a Nélaton catheter, the cavity was washed out without involving the pleura. Recovery ensued in one month.

(To be continued.)

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Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

PULSUS BIJEMINUS AND DEATH FROM DIGITALIS.[1]

Huchard found that digitalis in many persons leads to a perversion of the cardiac rhythm, which has received the name of pulsus bijeminus. Two revolutions of the heart follow each other rapidly: the first is usually the stronger and is easily felt in the pulse, while the second may be so weak as to be scarcely, if at all, indicated there. This peculiarity is also found in many arterial cardiac lesions from their tendency to produce cardiac dilatation; but it is often overlooked, either because it is transitory or because it is mistaken for an irregularity. Each pair of beats is separated by a more or less well-marked interval, which prolongs the duration of the systole and thus increases the amount of blood which flows into the ventricles and distends their weakened walls. Then two systoles follow each other quickly in order to thoroughly empty the over-full ventricle. As digitalis increases the period of diastole, it favors the production of this abnormal rhythm, and in these cases must therefore be withheld, as it may lead to rapid, or even sudden, death, with symptoms of cardiac dilatation and cyanosis.

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[42] [illegible] Virchow's Handbuch, B. v, Abth. ii, p. 358.

[43] Loc. cit. and Guy's Hospital Reports, 1885, iii, 1.

[44] Bulletin de la Société anat. de Paris, 18[illegible].

[45] Guy's Hospital Reports, 3d series, xix, p. 320.

[46] Loc. cit.

[47] Zeitschrift für klin. Med., 1880, Band ii, p. 320.

[48] Loc. cit.

[49] Berliner klin. Wochenschrift, 1887, No. 5.

[50] Charité Annalen, 1889, xiv.

[51] Loc. cit., 1889.

[1] Centrblt. f. d. ges. Ther., 1892, p. 575.

[52] Berliner klin. Wochenschrift, November 14, 1892.

THE GRAPHIC METHOD APPLIED TO THE DIAGNOSIS OF OBSCURE ANEURISMS.

Apropos of Dr. Richardson's proposition to employ intra-thoracic auscultation in the diagnosis of obscure conditions within the chest, Fenwick and Overend say that in 1890 they made a series of experiments in this direction. Beside practising auscultation by means of the œsophageal tube, they attached a Marey's tambour in the hope of obtaining graphic records of the movements communicated to various parts of the œsophagus, with especial reference to the diagnosis of obscure aneurisms. This was tried in several cases with considerable success; but in their final case, though every precaution had been taken, and the signs of aneurism were at the time obscure, the straining and retching caused by the tube brought on an immediate hæmorrhage, which frightened the patient and occasioned them the gravest misgivings. Although it is rational in device, easy of performance and undoubtedly serviceable in diagnosis, the extra risk of life, in their opinion, cannot compensate for its probable disadvantages, no matter how fine or flexible the tube may be. They therefore discourage its use.

MEDIASTINAL PLEURISY.[3]

Velimirowitsch bases his thesis on the study of five well-marked cases, all of which occurred in children, two coming under his own observation. He realizes the difficulty of drawing an adequate picture of the disease from the meagre material at his command, but makes the attempt owing to the lack of previous endeavors in this direction. A frequent cause of the affection is tuberculosis. It is more often situated on the left than on the right side of the thorax and is most common in children. The symptoms are often so similar to pericarditis that during life they are frequently mistaken, one for the other. An important point in diagnosis is the character of the onset, which is usually accompanied by severe pain between the nipple and sternum and a sense of great oppression. In effusions in the left side there may be bulging of the precordial region and obliteration of the intercostal depressions, with a tympanitic percussion note below the clavicle, dulness over the sternum and feeble vesicular breathing in the anterior portions of the lung. Displacement of the heart may also be looked for, the sounds being modified and feeble and distantly heard on the right side. In effusions on the right side, the symptoms are the same, but cardiac displacement does not occur. In some cases the liver is pushed downward. The prognosis is not good, but depends on the underlying disease. Treatment is practically confined to puncture.

MULTILOCULAR PLEURISY.[4]

Rudolph says that adhesions between the visceral and costal layers of the pleura are so commonly found resulting from many different causes, that it is probable that multilocular pleurisies are not such very rare occurrences. The cavities are usually two in number, but may be more; at times they communicate with each other, at others they are entirely separate. In the latter case the fluid in the different cavities may vary greatly in character, one, for example, containing serum, another pus. Though Jaccoud was able to recognize two forms of this condition, in one of which all the classical symptoms of effusion are present, except for a more or less crescentic-shaped zone extending from spine to sternum, where vocal fremitus and the respiratory murmur are still preserved, and another in which, with flatness on percussion and displacement of neighboring organs, vocal fremitus, marked bronchophony and bronchial breathing are all present. Rudolph, in four typical cases, had no suspicion of the real condition in one case till the autopsy, and in the other three, till after the first pocket had been tapped. If, after thoracentesis, when done in the back, the signs of pleural effusion still remain anteriorly, in the right side above the limit of hepatic dulness, or on the left, over the semilunar space, there can be little doubt of a second effusion. Another point in the diagnosis of this condition is the withdrawal of less fluid than the amount of the dulness, etc., would lead one to expect, while the persistence of fever after the evacuation of an empyema is a very suspicious symptom, provided other causes can be ruled out.

The prognosis depends on the character of the primary disease: cases in which the contents of the cavities are of different characters are almost always the result of serious lung diseases, tuberculosis, bronchiectasis or carcinoma.

ACCIDENTS OF NERVOUS ORIGIN CONSECUTIVE TO THORACENTESIS AND EMPYEMA.[5]

Jeanselme has collected forty-five cases of this sort, in which the nervous manifestations varied greatly; syncope, convulsions, hysterical and epileptic attacks, monoplegia and hemiplegia, delirium, strabismus, disturbance of vision as well as vaso-motor and trophic disturbances, being among the number. As premonitory symptoms he has found inequality of the pupils, the dilatation being present on the side corresponding to the empyema, hyperæsthesia of the pleural fistula and pleural hæmorrhage, but almost always the onset is sudden and stormy. They do not occur spontaneously in the course of the disease, but invariably after operative interference, rarely after a simple operation, most commonly after washing out a pyothorax, but the nature of the irrigating fluid is unimportant. It rarely occurs in cases of serous effusion, but three cases out of forty-three, in which the character of the fluid is mentioned, being of this kind. The prognosis is not good, as over half the cases proved fatal.

Individual cases may be traced to an embolic, cardiac, toxic, uræmic, epileptic, traumatic or hysterical origin, but underlying them all is a state of poor nutrition, cachexia or similar conditions in which nervous crises develop at the first opportunity, the central region which is responsible for these manifestations being probably the medulla. The treatment should be supporting and stimulating. As a prophylactic measure too much fluid (1,000 to 1,200 g.) should not be withdrawn and care should be taken in washing out the pleura and in the use of the irrigator.

[illegible]

[3] [illegible]

[4] [illegible]

[5] [illegible]

ON THE TREATMENT OF BRONCHIECTASIS.[6]

Stewart says that while the generally accepted theory is, that bronchial dilatations are produced by the contraction of fibrous tissue in the lungs, that process does not explain many, and indeed, the most typical, examples of the disease. For bronchiectasis is often present when there is no cirrhosis and in not a few cases the fibroid change follows upon it as a secondary consequence. Further observations have confirmed the views which he expressed twenty-six years ago that an atrophic process in the walls of the bronchial tubes affords the real explanation, and that, given such an atrophy, the pressure of the air in the respiratory tract leads to dilatation of the tubes, while the consequent accumulation and decomposition of the mucus produce further changes characteristic of the disease. He has therefore endeavored to adopt treatment which would meet these conditions. Very little, however, can be done to prevent the occurrence of atrophy, nor, except by keeping down cough so far as that was warrantable, to interfere with the pressure conditions which tend to dilate the weakened walls. The constant aim has been, therefore, to prevent the decomposition of the sputum and its consequences. Turpentine, creasote, carbolic acid, salol and other antiseptics by the stomach, as well as sprays and vapors of various kinds have all been sedulously tried, with on the whole a very limited and temporary advantage. In one case during the past winter he had used an intratracheal injection of menthol (10 parts), guiacol (2 parts), and olive oil (88 parts), a drachm being injected into the trachea twice daily. The injections were given regularly for about a month and then gradually less frequently, with the result that in a week the fetor of the breath and sputum had entirely gone. The temperature speedily fell to normal, the general symptoms disappeared, the weight increased, the appetite returned and the digestive process became established, while the pulmonary signs had been favorably modified. Had this treatment failed Stewart proposed to try operative interference and gives details of a case under his care several years ago in which such treatment was adopted with good result.

(To be continued.)

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Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Eighth Annual Meeting, at Washington, D. C., May 30, 31 and June 1, 1893.

(Continued from No. 8, p. 202.)

SECOND DAY. — MORNING SESSION.

DISCUSSION ON MYXŒDEMA.

A paper by Dr. F. P. Kinnicutt, of New York, was read by Dr. W. G. Thompson.

This was followed by a paper by Dr. James J. Putnam, of Boston, who reported two cases of myxœdema successfully treated by thyroid preparations of different kinds.

The first case was that of a lady in middle life who had had the disease for upwards of twelve years in a pronounced and typical form. The treatment by injection was begun in July, and the improvement began to show itself in two weeks. She is now practically well, though still anæmic and delicate; and from having previously been bald, she has a dense growth of hair. The history of the case furnished some facts with regard to the morbid symptoms occurring during the thyroid treatment, and these were considered also with reference to other cases. Their cause is not so much the thyroid extract itself as it is the rapidly changing condition of the heart and blood-vessels, and perhaps the rapid absorption of substances from the tissues.

The second case was that of a lady in whom myxœdema appeared about the time of the menopause; and it is especially interesting on account of a family tendency to the disease, the rapidity of the improvement, and the fact that, for several years before, the thyroid had been enlarged (as it is still) and tachycardia had been present.

A third case was important on account of a history of severe headaches associated with atrophy of both optic nerves. There was some doubt as to the diagnosis of this case, and the discussion of it brought up the question of the relation of myxœdema to acromegalia, two cases of which are now under the writer's observation. Both of them have been treated by thyroids, and appear to have improved.

The relation of myxœdema to Graves's disease was also discussed; and the view was maintained that we have not at present sufficient grounds for asserting any very close relationship between these affections. It is not probable that Graves's disease is due to enlargement of the thyroids in the same sense that myxœdema is due to an atrophy of that organ. Certain forms of obesity, perhaps, stand nearer to myxœdema, and the latter disease in the modified form is perhaps more common among elderly people than has been supposed.

The results of partial thyroidectomy, which appears to have been so successful in relieving the symptoms of Graves's disease, form an argument of value in favor of the thyroidal origin of that affection; but the question can by no means be decided positively on that side. The evidence that Graves's disease is essentially a cachexia due to disordered tissue nutrition, in the same sense as with myxœdema, is not strong, and the theory that the symptoms are due to excessive or vitiated thyroid secretion, though important, still lacks proof. The occasionally rapid onset of Graves's disease under excitement or nervous shock is not easily explained in that way, though not positive disproof of the theory. The truth probably is, that Graves's disease is closely related to the cardiac-regulatory and vaso-motor functions of the thyroid, and very little to its trophic functions. It is difficult to define the condition of the thyroid necessary to produce myxœdema, etc. Sometimes its functions seem to be only temporarily inhibited. It is probably not true, however, that a small part of the gland is functionally equivalent to the whole.

The recent observations respecting the pathological anatomy of the myxœdematous condition were cited, and the conflicting evidence regarding the supposed compensatory enlargement of the hypophysis cerebri after thyroidectomy, and regarding the function of the hypophysis. There is, perhaps, an analogy between the cachexia thyreopriva and eunuchism after castration.

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[6] British Medical Journal, June 3, 1893.

Another paper was read by Dr. M. Allen Starr, of New York.

Dr. Starr's paper consisted of a report of three cases successfully treated with the thyroid extract and the discussion of the mental condition present in all of his cases.

Case I. Female, forty-six years of age, from Newcastle-on-Tyne, England. Developed myxœdema in April, 1882. Various forms of treatment failed to give her any relief. First seen in Dr. Starr's clinic, College of Physicians and Surgeons, New York, February, 1892. Was put upon glycerine extract of thyroid gland in March, 1893. Was given six drops of the glycerine extract, three times a day, increasing the dose one drop daily. Improvement began within ten days, and has been progressive and continuous. This improvement has affected both body and mind, and in every respect the change for the better is marvellous. The œdema has practically vanished. Her mental condition has improved to even greater extent than her bodily state. She is able to walk several miles a day when formerly it exhausted her to walk 800 feet. She is free from pain and sleeps well. Her temperature has steadily risen under treatment from 97°, and is now constantly normal. The dose of extract was steadily increased until she was taking ten drops three times a day, at which point it caused a feeling of exhaustion. The pulse was found to be over 100 and the temperature 99.5°. The dose was reduced to eight drops, and subsequently maintained between eight and nine drops three times a day for the past month. This is the equivalent of a half a gland daily.

Case II. Female, twenty-two, single. The onset of the disease was so gradual that it is impossible to say when the present symptoms first developed; but it is certain that in 1889 her appearance was noticed to be peculiar, the face being swollen and waxy in its pallor. On January 6, 1893, put upon thyroid extract, five drops, three times a day, increased gradually up to nine drops three times a day. The improvement began three weeks after the beginning of the treatment. On May 1st, her condition had markedly changed. The œdema had disappeared from the face, the body and the extremities, the tongue and lips alone being then affected. The skin was soft, and no longer scaly and dry; had some color; well-nourished, good digestion; and mental condition apparently normal. Walks three miles daily, and is fairly well. Is now taking thirty drops daily of the thyroid extract, which is equivalent to half a gland.

Case III. Female, aged forty-six, married. Suffering from myxœdema since 1880. Put upon thyroid extract four months ago, ten drops three times a day. The reaction was so intense as to give rise to much alarm. After an intermission of a week, treatment was begun in five-drop doses twice daily, and then gradually increased to ten drops three times a day. This dose she can take without manifest discomfort. After four months' treatment her appearance is wholly different from that of the past six years. She no longer has the appearance of undue obesity. The skin, which was formerly dry, rough and scaly, is now soft and smooth; and she says that she is beginning to perspire naturally, a thing she has not done for ten years. There is a perceptible new growth of hair on the head and in the arm-pits. The supra-clavicular swellings, which were very noticeable, have gone away entirely. Her speech is different in character; her facial expression has markedly changed for the better; her appetite and digestion are good. Urine increased in amount. Her mental [illegible].

Dr. Starr, after a consideration of the mental symptoms observed in his patients, concludes that these mental symptoms must be due to certain physical changes in the brain, probably similar in nature to those visible in the body, especially when the relief of the mental symptoms by the treatment with the thyroid extract is taken into account.

Dr. W. G. Thompson, of New York, [illegible] the following history of a case of myxœdema:

The patient is a female, forty-four years of age. Symptoms of [illegible]. Admitted to Presbyterian Hospital, April 5, 1893. Had the characteristic symptoms of the disease. After four days under observation without treatment, she was given daily doses of five minims of glycerine extract of the sheep's thyroid, prepared by Dr. Geo. W. Crary. No reaction was at first observed, and the dose was increased by one minim with each dose until a week ago the patient was taking twenty minims three times a day. Patient now under treatment fifty days. Temperature has fluctuated three degrees, ranging between 97° and 100°, most of the time being subnormal. At first the daily fluctuations amounted to 2.5° or 3°, but of late they have been only 1°. The hair has continued to fall out, but the extensive lamellar desquamation has ceased; and the skin over the hands and arms has become more elastic, softer and much less dry. Ten days after the treatment was begun the swelling of the face, especially about the eyes, had decidedly diminished, and the lips and tongue became slightly thinner. The patient's mental condition improved considerably. The feeble circulation has not improved, but the patient sits up daily and moves about the wards. There has been a slight increase in the daily production of urea. The extract, as prepared by Dr. Crary, represents twenty-four grains of gland tissue to the drachm of glycerine. Strict surgical cleanliness is observed in all the steps of the process. Boric acid solution is the only antiseptic used, heat sterilization being employed. The glycerine is Schering's twice distilled, sterilized before being used. The glands are cut up separately, those diseased thrown out. After standing four days the extract is ready. After two months it seems to lose something essential.

Dr. F. C. Shattuck wished to mention, rather than report, three cases of myxœdema, two in private, one in consulting practice.

Upwards of a year ago a single lady of twenty-nine was brought to him with symptoms dating back a number of years, but more aggravated within a few months. Her appearance had so changed that people did not recognize her. Her mental condition was one of rather undue elation. Early in May, 1892, he injected weekly a glycerine extract of a sheep's thyroid in three doses. The injections were kept up for about three months. The skin improved very much; but from undue elation she passed into a condition of suicidal melancholia, which has continued more or less up to the present time. About two months ago she began to take Parke, Davis & Co's dessicated thyroid extract by the mouth, fifteen grains twice a day, and continued it for five weeks. It was then stopped on account of pains in the legs, and afterwards resumed. She is essentially no better, although she has been fairly subjected to the treatment.

The second case is that of a gentleman of sixty-nine, seen first two and one-half months ago, in an early stage of myxœdema. He was put upon dessicated thyroid, fifteen grains twice a day in capsules. Before many days he began to complain of pains in his legs, and then in his chest near the cardiac region. The dose was diminished to seven and one-half grains twice daily. The myxœdematous symptoms rapidly abated; but the treatment soon had to be stopped on account of the very severe nocturnal paroxysms of pain like that of angina, demanding morphia hypodermically, several nights as much as two grains in half-grain doses. This was accompanied by great tenderness just outside the left nipple, and inability to lie on the left side. As the pain came the pulse would rise to 120, the normal rate being about 70. After three weeks' intermission the extract was resumed in the dose of one grain every second day, and he is now getting one grain daily. His whole appearance has undergone a marked change, and he feels better than for two years. Both he and his wife now date his symptoms back farther than they did at first.

The third case, which was seen in consultation, is of many years' standing, although she was seen but very recently. Very marked improvement has taken place; and her friends note a great change in her appearance, which was highly suggestive of Bright's disease. She has had much palpitation since she took the extract, seven grains three times a week.

The especial points to which Dr. Shattuck called attention were the failure of the treatment thus far in a case which seems undoubtedly one of myxœdema and the toxic symptoms noted more or less in all three, namely, pain in the legs, palpitation and severe angina. We are dealing with a powerful agent, and should be very careful until we are more familiar with its doses than we are at present. Among the many points which experience will enlighten us upon is the relation of the dosage to the duration or intensity of the disease. The descriptions of myxœdema, as laid down in the books, apply to old and very marked cases. As we learn to recognize the early stages of the affection, we shall find that cases are pretty common.

Dr. Wm. H. Welch spoke of the results that Dr. Halsted had obtained from extirpation of the thyroid gland in the dog. A singular alteration in the structure of the gland, which had been referred to in the papers on myxœdema as an "hypertrophy" of the gland, had been found. The change is so complete an alteration of the structure of the gland that it is doubtful if any one would, in an advanced degree of the change, recognize sections of the organ under the microscope as thyroid gland at all. The appearance of follicles has disappeared, and the lumen of the follicle is filled up with papillary growths from the walls of the follicle. There is complete disappearance of the colloid substance from the lumen of the gland, and the low cubical epithelium has become high cylindrical epithelium, and more granular than normal. This change occurs as the result of interference of various kinds with the gland, such as a very severe operative interference in the neighborhood of the gland or a simple handling of the nerves or a ligating of the nerves in the neighborhood or disturbing the tissues around the gland. The same change occurred in the glands of dogs which had been operated upon at a distance from the neck, as for intestinal suture and experimental peritonitis. In a series of something over one hundred dogs examined at the pound in Baltimore, a small percentage had this enlargement and alteration in the structure of the gland. All this shows that the thyroid gland has important functions, but still obscure.

Dr. Halsted has discovered the possibility of removing a great many times the weight of the normal thyroid. He takes away one thyroid gland and part of the other, but not enough to kill the animal. The part which remains behind hypertrophies and after a certain time is bisected. The operation is repeated again and again and a great many times the normal weight is taken away and absolutely no symptoms appear. During all this time the remaining portion of the thyroid is altered in the manner before described. Anything that bears upon these changes in the thyroid may prove hereafter of importance in the understanding of the function of the gland.

Dr. J. J. Putnam, referring to the remarks of Dr. Welch, said that he had recently had a patient with exophthalmic goitre, operated upon by Dr. Warren, who removed about two-thirds of the gland. The part removed was examined by Dr. Councilman, and was similar in structure to the hypertrophied glands described by Dr. Welch. If only a very small portion of such a diseased gland is left, it seems to be sufficient to prevent the peculiar cachexia from coming on.

Parke, Davis & Co., and others who have been concerned in securing the thyroids from sheep, have found large numbers of them diseased. About one-third of those examined at the Brighton Abattoir were found diseased, and were rejected.

The changes in myxœdema are often in such form as to strongly suggest nephritis. In two instances known to Dr. Putnam the diagnosis of nephritis was made. It is a subject for investigation, whether some of the obese elderly people whom we see with more or less of this œdematous condition are not subjects of myxœdema, and could be improved by thyroid treatment.

Dr. M. Allen Starr, of New York, called attention to the necessity of varying the doses of the drug somewhat in accordance with the reaction of the patient. Different individuals are apparently differently susceptible to the thyroid extract. In one of his cases, owing to a misunderstanding between physician and nurse, the dose was run up to twenty-two drops of the glycerine extract three times a day, which is equivalent to two and one-fourth glands per day. This was not followed by any apparent ill effect. In Dr. Thompson's case no effect at all was seen until the dose was run up to eighteen drops of the extract three times a day. It is better to gradually increase the dose until pretty large doses are given. Recently, in the discussion in Edinburgh, on myxœdema, from out of a large number of cases reported (nearly seventy), there were but two cases of failure to relieve the patient by the use of thyroid extract.

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Recent Literature.

The Anatomy and Surgical Treatment of Hernia. By Henry O. Marcy, A.M., M.D., LL.D., etc. Published by D. Appleton and Company, New York. 421 pages, illustrated by 8 colored plates from Bougery, 66 full-page illustrations and 37 cuts.

This is an elaborate volume. Also one which on account of the skill and art of the publisher will always attract attention. It seems at first sight from its size, its attractive binding, its elegantly colored plates, its large pages filled with quotations, extracts, statistical tables and diagrams [illegible]. It has evidently been the aim of the author to contribute a work which shall be a "classic" in surgical literature. Its title describes accurately its contents. It tells of the anatomy and surgical treatment of hernia.

A close examination of the volume, however, results in a certain amount of disappointment. The expectation of the reader that he has found a complete treatise on hernia is not realized. There is much information relating to its descriptive and pathological anatomy. There is an exhaustive collection of bibliographical quotations relating to the history and development of its operative treatment, to the methods for its permanent relief and to statistical results, an elaborate chapter on the history and use of animal tendons in surgery, and finally, a detailed description of the operative method devised and practised by the writer of the work.

One finds a splendidly published volume containing a large amount of useful information; but also, unfortunately, such a mass of heterogeneous material and data compiled from discussions of surgical societies or personal correspondence that the reader is exhausted in his search for results or conclusions. There is a lack of appreciation of the relative importance of subjects. There is at times an account of abridged quotations and incorrect impression given of the true method or opinion of the original writer. There has been collected a huge mass of material both historical and recent. The task must have been a very laborious one. The compilation, the arrangement, the conclusions of this extended study and investigation, however, except so far as the writer's individual method and clinical experience is concerned, shows an inability to handle this mountain of data; or a lack of care in its preparation. These elements render the volume unsatisfactory for practical reference and arouse distrust as to the correctness of the quotations and statistics. The method of describing plates is tedious and requires an unnecessary expenditure of time.

The book is valuable in that it will furnish to a careful reader much valuable information relating to the descriptive and pathological anatomy of hernia. It will give him an interesting account of the ancient history of hernia. It will furnish a full bibliography of the literature describing its operative treatment. It gives an elaborate detailed description of the especial operation for the radical treatment of hernia devised and advocated by Dr. Marcy. The evidence now at hand as to the value of this operation comes chiefly from the publications of its originator. According to his reports it has given satisfactory results. In seventy-eight cases four recurrences. In two of the latter a second operation was ultimately successful.

The book is one which will never become popular as a volume for "practical" reference. It contains, however, much that is of interest, but in a form that requires some familiarity with its text to be available.

Lessons in Physical Diagnosis. By Alfred L. Loomis, M.D., LL.D. Tenth Edition, revised and enlarged. New York: William Wood & Co. 1893.

The ten editions of this excellent book well attest its continued popularity. Some parts of the present edition have been rewritten, and a new lesson on "Clinical Microscopy" has been added.

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THE MUTUAL INTEREST OF THE MEDICAL PROFESSION AND INSURANCE COMPANIES IN THE PROLONGATION OF LIFE.

The above is the title of a paper read before the American Medical Association in June of the present year by Prof. Chas. Denison, of Denver, Col. Since that date it has been somewhat widely circulated as a printed leaflet.

In brief the essay presents a dual proposition:

First, that the medical profession shall adopt a systematic and uniform method of recording the symptoms, physical signs and progress of diseases of the chest, both for the study of such disease and the coläboration of physicians in selecting a proper climate for the treatment. A special form for such record called a "Diagnosis Chart" and advice to supplement the same by spirometrical and manometrical observations, were presented with the essay, and two ingenious instruments for general and particularly for life-insurance examiners' use, devised by Dr. Denison, were described.

Second, that life-insurance companies being interestéd in the prolongation of life, as well as in the early and correct diagnosis of diseases of the chest, shall employ physicians especially qualified, to whom insured persons having such disease, shall be referred at the companies' expense, for examination and advice.

Further, that the companies upon report from these referees, shall look after the personal welfare of those requiring aid, and shall, if desired, loan them money to assist them in going to favorable climates.

The value of the first part of the dual proposition is evident, and especially so, since if generally adopted, physicians who examine for life insurance would be the better qualified for their duties.

Aside from the use of the spirometer and manometer, which, while impressive as office ornaments, are apt after years of service to stand disused and forgotten, what is the prospect of the adoption of the suggestion in connection with life insurance?

We must accept human nature as the past has shown it. The present only repeats the past; and the probability of bringing about the general use of charts and instruments of precision, is hardly less remote than in the years immediately following the discoveries of Lænnec. The great bulk of mankind do not care to be accurate, and the average medical practitioner is no exception.

That physicians who examine for life insurance — about eighty per cent. of whom live in thinly-settled districts, and who although the best attainable, are far from being highly educated — can be relied upon for a refined diagnosis in a case of a man not seriously ill, is at least problematical. Many of these men started out in life impressed with the importance of auscultation and percussion, but have gradually come to give less and less time to all but those acutely ill.

The experience of a medical director for more than twenty years shows that busy and skilful practitioners will not take the time to fill out a complicated chart, either for their patients or a company.

Those examiners interested equally by desire for the fee and a desire to please the agent (and these are unfortunately many), cannot be made to do it; and the country practitioner too often cannot do it correctly, if he would.

This statement is not meant as a reflection upon these physicians. They are able to detect disease. They are qualified to pronounce judgment upon a man's physical soundness; and their experience, backed by honesty and integrity of purpose, is a safeguard to the companies they represent. Yet they do not feel called upon to state in accurate terms the particular phase of disease they find; and if they were, would hesitate to record it for the possible criticism of jealous rivals.

The basis of life insurance is the known experience of mortality in the community at large; and the fair and honest opinion of a medical man conversant with the personal history of the men examined, re-enforced by the judgment of the medical directors of a company, would, of itself, be a selection which would keep that company's mortality within the tables, whether the examiner were an accurate diagnostician or not. Unfortunately, however, such fair and honest opinion is not always available. The personal interest of an applicant and the pecuniary interest of the solicitor, introduce such elements of danger that the most skilled physicians (being also the most independent) are the most desired as examiners.

The higher education of all physicians in the diagnosis of incipient disease is a matter of grave importance to life companies; but elaboration of detail and minuteness of record are fortunately not necessary concomitants. *Experientia docet;* and instead of elaboration, the larger life companies have gradually reduced the size of their applications, eliminated much that was once deemed essential, and simplified the questions to be answered.

The one object of inquiry, the pivotal point around which all examination centres, is not what special form of disease the applicant has, but has he any at all? In other words, Is he sound? If not, a wise company will take no chances. All doubts on the subject are, however, weighed and investigated by the medical directors, the integrity of the examiner being as important a factor as his ability, in the final decision.

That we may not be misunderstood we would sum up our observations on the first part of the proposition as follows:

(1) Life companies appreciate the importance of employing the most skilful physicians.

(2) The use of charts and instruments of precision is eminently desirable; and while experience in this direction hardly warrants the hope of their general adoption, the limited number who may adopt them will be considered by companies as preferable examiners.

(3) Nevertheless companies will still be obliged to employ many who are only relatively the best.

(4) The character of the business makes it necessary, and the broad, general principles of life insurance make it safe, to accept examinations by many whose experience and honesty of purpose are more pronounced than their skill in diagnosis of chest diseases.

The second part of the proposition, namely, that life companies can properly take measures to prolong the life of their insured who have developed disease of the lungs, presented as new, will undoubtedly have the charm of novelty to many, and is worthy of consideration.

We must not mistake the true purpose of life insurance. It is not, as many suppose, a business for the acquiring of money, in the sense applied to ordinary mercantile affairs. True life insurance is a business of wide philanthropy; and while there are stock companies who find it possible to combine business enterprise and profit with this philanthropy, most companies are mutual, and all excess above the expense of conducting the business and the reserve held for the policy-holder is returned to each member as a dividend. The insurance is properly not for the man insured, but for his family in case of his untimely death. True, various forms of policies are now issued, under demand for investment and the pressure of sharp competition, where the personal interest of the insured is contingent; but the great bulk of insurance is still what it was originally designed to be, a true philanthropy.

Any company so successfully managed that it can return large dividends is deservedly popular. It is returning money not consumed by great mortality nor bad investment.

Competition among companies is strained to the utmost. To attain pre-eminence no scheme is overlooked; no care, no study neglected; and it is probably true that no medical officer of any large company has failed to consider over and over again the probability of profit in prolonging the life of the insured. From the standpoint of economy, from that of extension of benefits and from that of mere advertisement, the subject has been discussed.

The matter of prolonging the life of consumptives has been especially considered, but deemed, in view of the inadequacy of all remedial measures, beyond the province of a life company.

Aside from the business complications and perplexities which will be dwelt upon later, the point strongly urged by Dr. Denison, that money could be advantageously loaned to aid the diseased in going to a proper climate, is already met by some companies, certainly by the Mutual Benefit of Newark, N. J., which will loan liberally upon policies that have acquired a reserve value, to any holder, whether sick or well, at the ordinary rate of interest.

Another point, not only of popular but also of professional error, which the growth of life insurance has corrected, relates to the rate of mortality from consumption.

When the experience of the first thirty years of the Mutual Life (quoted by Dr. Denison) was published, this disease was a source of grave apprehension, but it has long ceased to be so. The application of principles of hereditary susceptibility, the modern doctrine of contagion, the improvement in the general standard of physicians, and the extreme care exercised in the selection of examiners have reduced the mortality from consumption to such a degree, that it bears in the mortality record but a moderate ratio to other diseases. Apoplexy, paralysis, Bright's disease, heart disease, and even the preventable zymotic diseases, are regarded with at least equal anxiety.

After what has been said, it will readily be seen that if a company should undertake to care for its consumptive policy-holders, a flood of inquiries would be made as to why the man suffering from nervous prostration, from heart disease, from the sequelæ of typhoid fever, the results of la grippe, and even the sufferer from business embarrassment to the verge of suicide, should not receive like assistance. The universal complaint would be "unfair discrimination."

If in reply, it could be demonstrated that the other policy-holders were in reality the gainers by such discrimination, all would be well; and we may therefore ask, Would it pay either them or the company? In other words, Is the scheme practicable?

Assume for a moment that it is to be tried: There is first the selection of qualified men as referees, whose opinion is to be relied upon. Over the wide area of the United States alone this would be a task involving much valuable time, travel and expense. There must be enough to be available in every State, and they must be men whom other physicians could look upon as authority.

As they are to be paid by the company, they could not refuse to examine either those hopelessly ill, nor those who having catarrh or bronchitis or debility or dyspepsia, fear they are becoming consumptive. The latter would be numerous, for it is a fact of observation, that the man with an annoying bronchitis or a protracted catarrh thinks he has consumption, while the man actually in the incipient stage is quite sure he has not, and finds many a physician who will assure him that his is but a trifling ailment.

Out of 100,000 policy-holders there would be ten per cent. (10,000), or at a very low estimate five per cent. (5,000), who would seek such free examination from an expert; and at $10, there would be an outlay of $50,000 annually. The correspondence resulting, would require the employment of a competent supervisor and at least one clerk to look after beneficiaries, referees, claims, appeals, reports and advances of money, an outlay of from $6,000 to $10,000 more.

Here then is a total, at a low estimate, of $60,000 annually, not including the expense of travel to settle disputes, the notifying of 100,000 policy-holders, circulars to the newly insured, and the many minor sources of outlay attending a special philantrophy.

As an offset we will assume that the life of seventy-five per cent. of consumptive policy-holders would be prolonged three years — a percentage almost absurd, since not more than twenty per cent. are usually prolonged at all by climate, travel, or the advantages offered to those with money; but place the percentage high, seventy-five.

The percentage who would be finally cured would be too small to enter into the computation. Ten to twelve per cent. of the deaths in a well-managed company is now about the rate from consumption. With 100,000 policy-holders a long established company loses only 150 annually from this disease. These are chiefly in early or middle life. Seventy-five per cent. of this number is 112.

Take, then, the average amount of policies and a high average of premium, and only about sixty per cent. of the first year's outlay would be received by the company in the three years, and of this a very considerable amount would be returned as dividend. This, it must be remembered, is assuming such liberal estimate as experience by no means justifies; and disparity of return for outlay is yet very great.

Setting aside, then, the question whether it would pay (not profit but expenses), a very important question is, Has a company the moral right after insuring a man's life for the benefit of his wife and children, even if the policy is a self and not a wife's policy, to compromise with the insured for his own benefit beyond offering a fair portion of the reserve value as a loan? Is it wise with reference to self-policies, whether life or endowment, to introduce a purely speculative element?

Of course, a man holding a self-policy can usually obtain a surrender value in cash, and the moral feature of the transaction rests with himself; but a systematic attempt to force a surrender or to assume to discount payment upon the chance of fatal issue of disease, whether under the guise of philanthropy or for the profit of the company is quite another matter. Quite certainly it would not be profitable.

While the broadening of the field of life insurance for the general good in the direction discussed can hardly be deemed practicable, there is one direction in which it may be, that, so far as we are aware, has not been laid before the public; and this is in influencing sanitary legislation.

The advances of modern times made in barring out epidemics from our seaboard, in preventing the pollution of the water-supply of cities, in closing wells and dairies from which the germs of typhoid fever are disseminated, have undoubtedly spared thousands of lives.

We need not specify, perhaps, any particular instance, although it would be easy to do so, since no one now disputes the value of legalized sanitary supervision; but the opposition of politicians, and the obstacles constantly interposed to proper legislation by unscrupulous or ignorant partisans, still hamper and counteract the progress of sanitary science.

Life companies could well afford to have in every legislature one or more competent men alive to the importance of preserving life; and the saving of only one insured person annually from preventable disease would more than cover the cost, and prove of benefit to the whole community.

◆

RELATIONS OF DYSPEPSIA TO PULMONARY TUBERCULOSIS.

At the recent French Congress for the Study of Tuberculosis recently held in Paris, one of the subjects discussed was that of the relationship of dyspepsia to pulmonary tuberculosis.

Marfan has maintained in his thesis that the digestive disturbances of the phthisical bear the relation not of cause but of effect; in other words, they are but one of the manifestations of the tuberculosis. Often the dyspepsia masks the tuberculosis. Marfan believes the initial dyspepsia to be caused by a "humoral state."

According to Hayem, whose paper attracted much notice, the gastritis of the phthisical is a common gastritis due to the ordinary causes of stomach inflammations. It is generally accompanied with retardation in the evacuation of the stomach and consequently with dilatation. It sometimes precedes for several years the appearance of the tuberculosis, and is only exaggerated at the onset of the phthisis in patients who take excitant drugs or who adopt a regimen not adapted to the state of their stomachs.

The causes of the gastric affections of the phthisical are those of ordinary gastric affections, to wit, the abuse of tobacco and alcohol, errors in diet, etc. It is a mixed gastritis, parenchymatous and interstitial.

In one case, Hayem found, at the autopsy, a general amyloid condition of the entire mucosa; in another, a necrosis due to a thrombosis; exceptionally, he has met with a tuberculous ulcer.

A gastropathy of uncertain source begins early in life; it entails a state of general debility, and at a certain moment pulmonary tuberculosis bursts forth. The physician then institutes an active treatment based on super-alimentation and the abuse of medicaments.

Under the influence of this particular regimen continued for months, there supervene the symptoms of violent gastric catarrh, in other words, the "initial gastric syndrome" of Marfan. It is simply the exaggeration of a gastropathy which had existed for many years, sometimes fifteen or twenty years before the appearance of the pulmonary accidents. Under a suitable dietary regimen and the suppression of medicines these gastric symptoms vanish.

When the attending physician discards the administration of irritant medicines and prescribes nourishing, easily-digested food, he will even in febrile cases see the condition of the stomach improve.

The tuberculosis at the onset, then, does not make the state of the digestive organs evidently worse. On the contrary, there are few diseases which so rarely affect the stomach. One is often astonished at the digestive capacity of the phthisical, who will eat more nutritious food than a well man.

In concluding, Hayem said that with the exception of rare lesions, ulcerations, amyloid degenerations, etc., the gastritis of the phthisical is of the common kind.

It is sometimes latent, and is not diagnosticated before the appearance of the tuberculosis. It should, nevertheless, be a subject of preoccupation by the medical attendant, for this gastritis may end in grave gastropathies, and open the door to pulmonary tuberculosis. In hospital patients it would seem that chronic alcoholism is a frequent cause of gastritis.

One of the best means of warding off pulmonary tuberculosis in the predisposed consists in treating the gastropathy.

The proper medication addressed to the digestive tube may perhaps in some subjects arrest tuberculosis at the onset.

◆

MEDICAL NOTES.

A New Medical School in Boston. — The trustees of Tufts College have decided to establish a medical department. The new school will be located in Boston, and will be opened next October, to men and women on the same footing. Albert Nott, M.D. is the Dean, and Charles P. Thayer, M.D. the Secretary.

Western Reserve Medical School. — Professor Gad, of Berlin, has been appointed professor of physiology in the medical school of the Western Reserve University, Ohio. The required school term each year hereafter will be eight months.

The Johns Hopkins Medical School. — Johns Hopkins University will open its new medical department next October. The regular course in this school is to be four years, and women are to be admitted on the same footing as men, and on the same conditions; a collegiate degree or evidence of an equivalent education.

A Suicidal Epidemic. — An unusually large number of suicides has been reported this summer, both in this country and in Europe. London, Paris and Hungary are especially affected. Many of the cases have had no discoverable reasons for their occurrence. The usual conditions of long-continued, dark, wet weather said to cause an increase of suicides have certainly not been present this year.

A Gift from Professor Czerny. — Dr. Czerny has sent a contribution of twenty dollars to the Gross Monument Committee, as a mark of his "admiration for the man and the surgical work which he has done."

Death of a Medical House-Officer. — Another sad case of death during hospital duty is reported from London. Mr. Arthur Durham, a brilliant graduate of Christ's College, Cambridge, and of Guy's Hospital, died August 11th while on duty as medical house-officer at the London Fever Hospital, after an illness of only four days, from virulent diphtheria contracted from a patient.

Admission of Women to the British Medical Association. — In accordance with a resolution passed last year, the British Medical Association has amended its by-laws granting membership to women-physicians, or as they are called in England "*lady-medicals.*"

Medical Progress. — In a recent valedictory address at Glasgow University, Professor McKendrick summed up the results of the development of medical knowledge during the last thirty years, as follows: "Thousands of lives saved annually by preventive medicine; greater accuracy in diagnosis, and a sounder knowledge of the natural history of disease; more rational treatment; many diseases caused to pass through their stages more speedily, thus saving time; better means of relieving pain and suffering; and making disease, even when incurable, more tolerable, and at last smoothing the passage to the Elysian Fields."

◆

Miscellany.

A MEANS OF RELIEF IN HAY FEVER.

The capriciousness of hay fever and the occasional relief obtained from an entirely empirical method of treatment warrant the publication of any means which has proved successful, in the hope that it may be of use to some other person afflicted with this annoying and disabling disease.

Ferber, of Hamburg,[1] reports his own case which had been so severe as to necessitate his using a closed carriage all through the summer. His relief was brought about from accidentally noticing that in the winter a coryza was usually accompanied with hot ears which regained their normal temperature when the discharge from the nose was established. He determined to try a reversed order of effect on the hay fever in the summer, and began accordingly to rub his ears until they became red and hot.

It is now the third year that he has been able to lead an endurable existence during the hay fever season. "As soon as the least sensation of fulness in the nose appears, there is recognized a certain amount of pallor in the ears. A thorough rubbing of the ears, at times even to contusion, has always succeeded in freeing the nasal mucous membrane from its congestion. The rubbing, however, must be *thorough* and repeated as often as the least symptom of congestion returns to the nose. Since using this means I have been able to take long sandy walks, sit and even sleep with open windows or pass an evening in my garden without distress. Several patients have had the same relief from this treatment, always in proportion to the thoroughness of the rubbing, and I hope by this means some other physician may be able to give his patients the same great relief."

◆

THE ROTUNDA HOSPITAL REPORT.

Dr. Smyly's clinical report to the Irish Academy of Medicine of the cases occurring in the Lying-in Hospital of Dublin during the last three years, has some interesting figures. In 3,602 confinements there were but 37 deaths from all causes. Ten of these deaths occurred in the first 1,200 cases, and were due to some form of sepsis. In the last two years no death has occurred from blood-poisoning. There were 107 cases demanding the use of forceps, with a mortality of 29 in the children so extracted. Forty-eight cases of post-partum hæmorrhage occurred, 17 of placenta prævia, and 21 of prolapsed funis.

◆

THE SPACE RELATION OF NUMBERS.

Fixed psychological relations are always interesting subjects of study. The mental association of certain colors and sounds is not uncommon, and the conception of numbers as having a definite space relation is probably more frequent than has been supposed. A case of this primary space idea of numbers in a person taught arithmetic wholly *memoriter* is reported in a recent number of "*Science.*"

The numbers from 1 to 100 are conceived of by the author as holding, relatively, definite positions in space, from which they never vary. This numerical position has no relation with that of any other object or thing, nor with the position of the body or the points of the compass. "The numbers, which are conceived of merely as points or stations in space, appear to be arranged in a peculiar line or lines in a horizontal plane. Beginning with unity, the series runs in a straight line to 20, where it turns ninety degrees to the right, and so goes to 30. Using the points of the compass merely for the present description, and not from any connection with the number-scheme itself, — if the series 1–20 runs (say) northward, 20–30 runs always east, 20 being the apex of the right angle. From 30 to 40 the course is *reversed* and runs back westward; at 40 it again turns at a right angle and proceeds south, without interruption, to 90, where the line again turns east from 90 to 100. Above this point, the numbers have the same positions again. In the mental conception the line 30–40 does not coincide with the line 20–30, but seems parallel to it at some little distance; and a vague sense of space, gradually increasing until no distinct relation is consciously noted, prevents any approach or interference between the numbers above 40 and those below 20."

[1] [illegible]

A CASE OF BILATERAL BRACHIAL PARALYSIS.

A case of bilateral traumatic paralysis of the brachial plexuses recently occurred in Bernhardt's clinic in Berlin.

A woman twenty-nine years old, was operated on for a double salpingo-oöphorectomy. During the operation, which lasted for an hour, the arms were held rather forcibly up and back, and shortly after the operation it was found that the woman had a double Erb's paralysis affecting almost identically the same muscles on each side. The infra- and supra-spinatus, the deltoid biceps, brachialis, and both supinators were completely paralyzed; the triceps and pectoralis major were partially so. Sensory disturbances in the skin existed over the areas supplied by the axillary, musculo-cutaneous and some of the branches of the median nerves.

The paralysis was evidently due to the crossing of the clavicles upon the transverse processes of the sixth and seventh cervical vertebræ, thus compressing the plexuses between two bony parts.

A favorable prognosis was given, and improvement followed persistent electrical treatment by galvanization through the supra-clavicular fossa, and gentle faradization of the muscles.

◆

CARCINOMA OF THE ŒSOPHAGUS.

The number of cases of primary cancer of the œsophagus so far reported is small — under two hundred.

The following case of Axtell's[1] is interesting in that the growth was primary; did not cause secondary infection, and was limited to the œsophagus. The patient was sixty years old and had had good health up to his present illness. There was no history of carcinoma or tuberculosis in the family. In November, 1891, while eating he experienced a peculiar sense of constriction in the epigastrium, which continued thereafter. He was able to take solid food without inconvenience until February, 1892, when he found that he could no longer swallow solid food, even if masticated very finely. If the food were swallowed it would be ejected in two or three minutes, apparently not passing beyond the level of the larynx. From that time he could take only liquid food and in September only in very small amounts.

He then began using the stomach-tube once a day and was able to take a little more nourishment. On passing the tube he could feel it turn on itself. He complained of a pronounced sense of weight, as though something were growing in the larynx. He had no cough, but at times a large amount of mucus would find its way into the throat and cause some inconvenience. An ivory bougie introduced into the œsophagus was stopped at a distance of twelve inches. He died of asthenia thirteen months from the first symptom noticed.

At the autopsy, an annular tumor-mass was found in the walls of the œsophagus one and one-half inches above the cardiac orifice of the stomach at no point more than two inches in vertical diameter. It was hard and nodular and almost completely closed the gullet. A fine probe could be pushed through the small opening without resistance. The mucous membrane over the growth was in a state of ulceration. The tumor-mass was completely isolated. No secondary growths were found anywhere, and the bronchial glands were not enlarged. Sections of the tumor-mass showed a typical scirrhous carcinoma, with small spheroidal cells in the alveoli.

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[1] Medical News, August 12, 1893.

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GANGLION.

The frequency with which ganglion occurs, the disabling annoyance it causes, and the tendency it has to return after the usual treatment by rupture are well known and need no comment. There has been, however, much looseness in the use of the term, and many cases of teno-synovitis have been classed and treated as ganglion. This is unfortunate in two ways. The treatment of a synovitis should be by rest, a ganglion by quite other means; and to confuse the two is to maltreat the patient and spoil statistics of either cases.

Jordan[1] has made a detailed report of twenty-five cases of ganglion recently under his care. He includes in his list only cases of true ganglion, that is, a small cyst connected with the sheath of a tendon and unconnected with any of the more superficial structures; the sac consisting of a fibrous capsule lined with synovial membrane. The cause of the affection he believes to be in almost every case a hernial protrusion of the synovial membrane through a slit in the sheath of the tendon with a subsequent compression of the neck and closure by plastic inflammation from the rest of the synovial cavity.

Of the various methods of treatment none have been so successful as could be desired. Rupture, electrolysis, puncture, excision — all have well-known objections, either an insufficient cure or undue exposure of the tendon sheath to inflammatory action, and obliteration. He has found the most successful results from the aspiration from the sac of ten to sixty minims of the fluid and the injection of the same amount of Morton's fluid without removing the needle. The sac was rubbed to ensure thorough contact, and the hand then put upon a splint and padded, for five days. The previous failures from injection he attributes to too weak a fluid to cause sufficient inflammation, or to so strong a solution that it becomes surrounded by a layer of coagulated lymph before it touches the walls of the sac itself.

Of his cases twenty-three occurred in women — of whom seventeen were washerwomen or house-servants who have hard manual work to perform, and a considerable amount of "wringing" to do — the very kind of work that would be likely to lead to a hernia of the synovial membrane. Twenty of the ganglia occurred on the tendon of the extensor communis digitorum, one each on the extensor carpi radialis longior, extensor communis digitorum, extensor secundi internodii pollicis, peroneus longus and flexor longus pollicis.

The duration of the affection had been from six weeks to six years. The average amount of fluid withdrawn was thirty-eight minims, and of the injection about twenty. Several of the cases had been ruptured or otherwise treated before. None suffered any discomfort and all were reported well, with no return after the end of twenty-one months.

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[1] The Lancet, July 29, 1893.

THERAPEUTIC NOTE.

Salophen in Acute Rheumatism.—Haldenberg[1] reports ten cases of acute rheumatism treated with salophen, and sums up his observations as follows: "A fifteen-grain dose every three or four hours for twenty-four hours is frequently sufficient. In no case was there observed any toxic effect or gastric or aural irritation. The average febrile period was but six days, and the average total stay in the hospital but ten days. The pain was quickly relieved and no cardiac complications followed." These conclusions are in all respects in accord with the observations of Caminer[2] and Froehlich[3] and the later reports of Osswald[4] and Koch,[5] all of whom found in the pleasanter taste of the drug an advantage over the salicylates. In cephalalgia, pleurodynia and some cases of trigeminal neuralgia marked relief was obtained from small doses. In the severer cases of acute rheumatism, however, the German observers looked upon salicylate of sodium as still the best remedy. Drasche and Hoischmann both report cases of the elimination of the drug by the skin in a crystalline form exactly like the crystals of the original powder. If this is true, it throws doubts upon the supposed splitting up of salophen into a salicylate and a phenol in the system. The remedy is best given in powders.

[1] [illegible] Record, [illegible] No. 5.
[2] [illegible] No. 10, 18[illegible]
[3] [illegible] W[illegible] No. [illegible]
[4] [illegible] W[illegible] No. [illegible], 189[illegible]
[5] [illegible] No. [illegible]

RECORD OF MORTALITY

For the Week ending Saturday, August 19, 189[illegible]

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	[illegible]	[illegible]	[illegible]	9.12	17.04	[illegible]	[illegible]
Chicago	1,438,000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Philadelphia	[illegible]	[illegible]	[illegible]	[illegible]	4.40	18.48	[illegible]	[illegible]
Brooklyn	[illegible]	424	[illegible]	[illegible]	[illegible]	[illegible]	1.44	[illegible]
[illegible]	[illegible]	—	—	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.02	20.14	2.88	[illegible]
Baltimore	[illegible]	—	—	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.82	17.46	[illegible]	[illegible]
Cincinnati	[illegible]	32	[illegible]	[illegible]	14.04	17.28	2.16	[illegible]
Cleveland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.20	8.00	[illegible]
Pittsburg	[illegible]	—	—	—	—	—	—	—
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	4.05	37.20	[illegible]	5.67
Nashville	[illegible]	[illegible]	[illegible]	[illegible]	5.88	2.94	[illegible]	[illegible]
Charleston	65,165	—	—	—	—	—	—	—
[illegible]	[illegible]	22	[illegible]	[illegible]	—	31.85	[illegible]	[illegible]
[illegible]	[illegible]	49	[illegible]	[illegible]	4.08	48.96	—	[illegible]
Fall River	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—
Lowell	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.00
Cambridge	77,100	22	[illegible]	[illegible]	[illegible]	27.30	—	[illegible]
[illegible]	62,656	22	[illegible]	[illegible]	—	27.30	—	—
Springfield	[illegible]	18	[illegible]	[illegible]	[illegible]	33.33	5.55	—
Lawrence	[illegible]	—	—	—	—	—	—	—
[illegible]	[illegible]	24	[illegible]	[illegible]	—	24.96	—	—
[illegible]	31,[illegible]	—	—	—	—	—	—	—
[illegible]	[illegible]	13	9	38.45	7.69	38.45	—	—
[illegible]	32,140	10	[illegible]	[illegible]	[illegible]	[illegible]	—	—
Haverhill	31,396	[illegible]	[illegible]	[illegible]	9.52	[illegible]	—	—
[illegible]	30,264	[illegible]	[illegible]	[illegible]	20.00	[illegible]	—	—
Malden	29,394	13	[illegible]	[illegible]	7.69	38.45	—	—
Newton	[illegible]	—	—	—	—	—	—	—
[illegible]	27,146	11	[illegible]	[illegible]	—	—	—	—
[illegible]	26,972	15	5	33.33	20.00	33.33	—	—
[illegible]	[illegible]	[illegible]	[illegible]	—	14.28	[illegible]	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25.00	50.00	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—
[illegible]	[illegible]	3	0	—	—	—	—	—
Newburyport	14,073	[illegible]	[illegible]	[illegible]	[illegible]	20.00	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—

[illegible] years of age 1,7[illegible] [illegible] infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, [illegible] fever 1,021, [illegible] 187, diphtheria [illegible] 28, cerebro-spinal [illegible] fever 13, measles 12, erysipelas 2.

From whooping-cough New York [illegible] and Brooklyn [illegible] each, Wa[illegible] [illegible] Milwaukee and Cambridge [illegible] 1 [illegible] meningitis Chicago 13, New York 5, Lowell 3, Washington 2, Philadelphia, Worcester, S[illegible] scarlet fever New York [illegible] Milwaukee [illegible] Brooklyn, Boston, Cleveland and Malden 2 each. From malarial fever New York [illegible], Brooklyn [illegible], Boston [illegible] 1 each. From measles New York 6, Brooklyn 3, Philadelphia 2, Milwaukee 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending August 5th, the death-rate was 21.9. Deaths reported 4,341; [illegible] diseases of the respiratory organs [illegible] whooping-cough 115, measles [illegible], diphtheria [illegible] fever 66, small-pox (London, West Ham and Bradford 3 each, Birmingham and Salford 1 each) 11.

The death-rates ranged from 14.8 in Croydon to 34.1 in Preston; Birmingham 22.2, Blackburn 29.9, Bradford 22.6, Gateshead 20.6, Leeds 22.2, Leicester 21.7, Liverpool 30.8, London 20.8, Manchester 23.8, Newcastle-on-Tyne 18.3, Nottingham 18.4, Oldham 19.8, Sheffield 24.7.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending August 12th, the death-rate was 20.9. Deaths reported 4,136; diarrhœa 604, measles 89, diphtheria 82, whooping-cough 76, fever 67, scarlet fever 47, small-pox (Salford 3, London and West Ham 2 each, Manchester and Bradford 1 each) 9.

The death-rates ranged from 12.9 in Croydon to 24.1 in Preston; Birmingham 20.3, Bradford 19.8, Hull 23.2, Leeds 22.5, Leicester 18.0, Liverpool 25.4, London 19.6, Manchester 23.9, Newcastle-on-Tyne 19.3, Nottingham 17.5, Sheffield 27.8, Sunderland 25.6, West Ham 16.1.

METEOROLOGICAL RECORD,

For the week ending August 19, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.		[illegible]
	Daily mean.	Daily mean.	Maximum.	Minimum.	[illegible]	[illegible]	Daily mean.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
S..13	30.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	57	N.W.	N.W.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M..14	30.00	[illegible]	[illegible]	[illegible]	[illegible]	41	43	N.W.	N.W.	[illegible]	[illegible]	[illegible]	[illegible]	
T..15	[illegible]	[illegible]	81	[illegible]	[illegible]	46	50	W.	N.W.	[illegible]	[illegible]	[illegible]	[illegible]	
W..16	29.96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.E.	[illegible]	[illegible]	[illegible]	[illegible]	
T..17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E.	[illegible]	[illegible]	[illegible]	[illegible]	0.09
F..18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	90	N.W.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.03
S..19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	81	[illegible]	N.	S.E.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]					68							[illegible]

[illegible]

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 19, 1893, TO AUGUST 25, 1893.

Board of officers [illegible] H. [illegible] Lieut.-Col. W[illegible] H. [illegible] Major [illegible] is, by direction of the Secretary of War, appointed to meet at the Army Medical Museum Building, Washington, D. C., Monday, September [illegible], 1893, [illegible] may be ordered before it, to determine their fitness for promotion.

By direction of the Secretary of War, a board of medical officers [illegible] surgeon-general; **Lieut.-Col. Wm. H. Forwood**, deputy surgeon-general; Major [illegible] **Walter Reed**, assistant surgeon, and **Captain James C. Merrill**, assistant surgeon, is constituted to meet at the Army Medical Museum Building in this city, on the 11th day of September, 1893, for the examination of candidates for admission to the Medical Corps of the Army. Par. 1, S. O. 193, Hdqrs. of the Army, A. G. O., Washington, August 23, 1893.

By direction of the Secretary of War, the following named medical officers are detailed to represent the Medical Department of the Army at the Pan-American Medical Congress to be held in Washington, D. C., September 5 to 8, 1893: **Colonel B. J. D. Irwin**, assistant surgeon-general; **Lieut.-Col. Dallas Bache**, deputy surgeon-general; **Major David L. Huntington**, surgeon; **Major Charles Smart**, surgeon.

Lieut.-Col. Wm. D. Wolverton, deputy surgeon-general, is relieved from duty at Watervliet Arsenal, N. Y., and assigned to duty as medical director, Department of the Columbia, to relieve **Lieut.-Col. C. C. Byrne**, deputy surgeon-general, U. S. A.

Lieut.-Col. C. C. Byrne, deputy surgeon-general, on being relieved from duty as medical director, Department of the Columbia, will report for duty as medical director, Department of Dakota, to relieve **Colonel Charles H. Alden**, assistant surgeon-general.

Colonel Charles H. Alden, assistant surgeon-general, on being relieved from duty as medical director, Department of Dakota, will proceed to this city and report to the surgeon-general, U. S. A., for duty in his office and as president of the Army Medical School, Washington, D. C.

Leave of absence for one month, with permission to apply for an extension of ten days, is hereby granted to **Captain J. L. Powell**, assistant surgeon, U. S. A.

Leave of absence for one month, to take effect upon the return of Assistant Surgeon **Glennan** from leave, is granted **Captain Wm. F. Carter**, assistant surgeon.

Major Justus M. Brown, surgeon, is relieved from duty at Fort Meade, South Dakota, and assigned to duty at Fort Wayne, Michigan.

Leave of absence for one month, to take effect about September 1, 1893, is granted **Captain Paul Shillock**, assistant surgeon (in the field), with permission to apply for an extension of fifteen days.

The commanding officer, U. S. Troops, in the field near Fruitland, N. M., is authorized to employ a citizen physician in cases of necessity during absence of **Captain Paul Shillock**, assistant surgeon.

Leave of absence for one month, to commence about September 1, 1893, is granted **Captain M. W. Wood**, assistant surgeon, U. S. A.

By direction of the Secretary of War, the following named officers will report in person to **Colonel C. H. Alden**, assistant surgeon-general, president of the examining board appointed to meet at the Army Medical Museum Building, September 4, 1893, for examination for promotion, all assistant surgeons: **Captain Curtis E. Price, Captain E. T. Comegys, Captain Walter Reed, Captain James C. Merrill.**

Leave of absence for one month is granted **Captain R. J. Gibson**, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 26, 1893.

D. Bloodgood, medical director, placed on Retired List, August 20, 1893.

Geo. F. Winslow, surgeon, from "Monterey" and to the "Philadelphia."

A. A. Hochling, medical director, President of Board to examine applicants for Naval Academy.

G. T. Smith, passed assistant surgeon, from "Baltimore" and to "Wabash."

R. M. Kennedy, passed assistant surgeon, from "Wabash" and to the "Baltimore."

L. H. Stone, assistant surgeon, from Naval Hospital, New York, and to the "Minnesota."

J. E. Page, assistant surgeon, from the "Minnesota" and sick leave for three months.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE EIGHT WEEKS ENDING AUGUST 5, 1893.

Fessenden, C. S. D., surgeon. To proceed to Mobile, Ala., for duty. June 16, 1893. To proceed to New Orleans, La., as inspector. August 1, 1893.

Murray, R. D., surgeon. Granted leave of absence for seven days. June 21, 1893.

Vansant, John, surgeon. To proceed to Wilmington, N. C., for duty. June 16, 1893.

Austin, H. W., surgeon. To inspect Delaware Breakwater Quarantine Station. July 22, 1893.

Gassaway, J. M. surgeon. To proceed to Detroit, Mich., and Chicago, Ill., as inspector. July 12, 1893.

Irwin Fairfax, surgeon. Detailed for duty in office of the United States Consul, London, Eng. July 2, 1893.

Carter, H. R., surgeon. To proceed to Brunswick, Ga., for temporary duty. June 28, 1893.

Peckham, C. T., passed assistant surgeon. Granted leave of absence for six days. June 22, 1893.

Brooks, S. D., passed assistant surgeon. Granted leave of absence for three days. June 22, 1893.

Carrington, P. M., passed assistant surgeon. Detailed for duty in office of United States Consul, Bremen, Germany. June 15, 1893.

Kinyoun, J. J., passed assistant surgeon. To rejoin station, Washington, D. C. July 10, 1893. To inspect Camp Low, New Jersey. July 29, 1893.

Goodwin, H. T., passed assistant surgeon. Granted leave of absence for three days. June 12, 1893. To proceed to Louisville, Ky., for duty. July 12, 1893.

Vaughan, G. T., passed assistant surgeon. To proceed to Chicago, Ill., for temporary duty. July 10, 1893.

Geddings, H. D., passed assistant surgeon. To proceed to Delaware Breakwater Quarantine for duty. June 30, 1893.

Perry, J. C., passed assistant surgeon. To proceed to Portland, Me., for temporary duty. July 8, 1893.

Stimpson, W. G., assistant surgeon. Detailed for duty in office United States Consul, Glasgow, Scotland. July 7, 1893.

Gardner, C. H., assistant surgeon. Granted leave of absence for fourteen days. July 19, 1893.

Strayer, Edgar, assistant surgeon. To proceed to Vineyard Haven, Mass., for temporary duty. July 8, 1893.

Oakley, J. H., assistant surgeon. To proceed to Wilmington, N. C., for temporary duty. June 24, 1893.

Norman Seaton, assistant surgeon. Granted leave of absence for three days. July 24, 1893.

Branham, J. W., assistant surgeon. To proceed to Brunswick, Ga., for temporary duty. July 25, 1893.

Sprague, E. K., assistant surgeon. Granted leave of absence for fifteen days. July 22, 1893.

Prochazka, Emil, assistant surgeon, Relieved from duty at Ellis Island, N. Y., and ordered to report to medical officer in command, New York, N. Y. July 29, 1893.

CORRECTION.

In the paper entitled "A Case of Acute Septicæmia," in the **Journal** of August 17th, on page 170, line 24 from the bottom of the first column, the words "with *the usual* amount of acute irritation," should read "with *an unusual* amount, etc."

RECENT DEATHS.

Dr. Antoine Blanche, the distinguished French alienist, died at Auteuil, August 15th.

Mr. Francis Carr Beard, died in London, August 11th, aged seventy-eight years. He was a physician well known in literary circles, having been the adviser and intimate friend of both Charles Dickens and Wilkie Collins.

J. W. Branham, M.D., assistant surgeon in the Marine-Hospital Service, died of yellow fever at Brunswick, Ga., August 20th, aged twenty-five years.

BOOKS AND PAMPHLETS RECEIVED.

Unilateral Hypertrophy of the Face. By D. W. Montgomery, M.D. Reprint. 1893.

Some Successful Results in the Treatment of Epilepsy. By David Inglis, M.D. Reprint. 1893.

Cæsarean Section: Historical, Statistical and Clinical. By Hamilton Fisk Biggar, A.M., M.D., LL.D. 1893.

Zymotic Diseases in Chicago. Sanitary Exhibit of the Illinois State Board of Health, World's Columbian Exposition. 1893.

The Epileptic Interval; Its Phenomena and Their Importance as a Guide to Treatment. By William Browning, Ph.B., M.D. Reprint. 1893.

A Case of Mediastino-Pericarditis in a Child; Secondary Empyema; Operation; Death. By William A. Edwards, M.D., San Diego, Cal. Reprint. 1893.

Six Months' Medical Evidence in the Coroner's Court of Montreal. By Wyatt Johnston, M.D., Montreal, and George Villeneuve, M.D., Montreal. Reprint. 1893.

Abnormal Man, Being Essays on Education and Crime and Related Subjects, with Digests of Literature and a Bibliography. By Arthur MacDonald, Specialist in the Bureau of Education. Washington: Government Printing Office. 1893.

Lectures.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XV.

INJURIES OF THE HEAD.

I am well aware that this lecture is nothing but an outline of a great subject; and it would be impossible to do it justice in an hour. Perhaps it would be impossible for me to do it justice at all; but what I want to do is to give you a plain description of essentials, so that you can work up the subject for yourselves.

No injury of the head can be considered trivial, because the most simple one may lead to fatal consequences. Why that is so is most simply explained by considering the close connection between the contents of the cranium and the outside. We have on the surface a very loose covering over the skull; quite thin skin; very little cellular tissue; a slipping fascia attached to the occipito-frontalis muscle, and a pericranium or periosteum, and then the bone. The bone is not solid. It has a tough outer table. It is permeated with vessels through the centre; and the inner table is brittle and glass-like. Then we come directly to the dura mater, which is attached to the inside of the skull, and really performs the function of an inner periosteum and nourishes the bone. You know with what difficulty it is stripped off from the inside of the skull. The dura mater, however, differs from the periosteum in the fact that it is a fibro-serous membrane; and, consequently, it is very prone to inflammatory changes. You know the delicacy of serous membranes; the rapidity of their circulation; how easily they become irritated and throw out an excessive amount of serum; how, as in the pleural, or peritoneal cavity, that serum changes to fibrin, lymph or into pus. The inner surface of the dura mater, which is serous, forms a cavity called the arachnoid, a serous pocket, which supports the brain, and runs in various directions; and at the inner side of that, we have a close, glistening, vascular layer called pia mater; and then we come to the brain itself. Therefore while the brain is pretty well protected from external blows from the hardness of its envelop, yet it is not as if it were provided with a shell which had no connection with the outside world. It is closely connected by vascular connections, and also by the two layers of its nutrient membrane, dura mater and pericranium.

The simplest form of injury received outside of the skull may lead to trouble inside. A person may receive a scalp wound which does not injure the bone, but it may suppurate inside the dura. The suppuration may easily penetrate and burrow beneath the fascia of the occipito-frontalis muscle. It denudes the bone of its periosteum; leads to necrosis of the bone, the outer layer. There may follow phlebitis and plugging of the little veins of the diplœ; transmission of the septic material through the diplœ and the inner table; and, often, affection of the dura mater and its serous lining; and that means meningitis and all its consequences. The same thing may follow from a blow upon the head which has not broken the scalp, but has slightly bruised the bone and periosteum, and which may lead to subsequent periostitis with suppuration; necrosis, and exactly the same consequences. We expect of course that when a person receives a blow upon the skull severe enough to fracture the bone, that this envelop having been cracked through, an entrance has been offered to any sort of septic material which may be the cause of disease; but this may also be the case after the slightest possible forms of injuries. I think I have said enough to show that a slight fall upon the head, a slight blow upon the head, may, in a sensitive subject transmit the effects of violence to the brain with great rapidity, and with septic consequences. In addition to this you must remember that inside of the skull is the brain, reposing, to be sure, on a water-bed, and prevented, as far as possible, from jars, by the interposition of water, and of tough membranes called the falx and tentorium, which line it off as it were; and separate one part from another; preventing the jar of one portion from being transmitted to another; so that it is protected as far as possible; yet in spite of all this, the delicate tissue is liable to be shaken up and jarred by any violent fall, or blow upon the skull itself.

The simplest form of injury that the brain substance can receive is temporary, and is called concussion; shaking up. Old authors made a great distinction between concussion and compression. They attempted to classify as concussion everything which did not result directly in pressure on the brain followed by coma, stupor and paralysis. But we now know that this distinction was too nicely drawn; and that between simple concussion and real compression there are three or four intermediate stages, that sometimes are very disastrous in their consequences; and which, frequently, can be distinguished from one another.

We confine now the term concussion to a condition like the following: the patient falls; is temporarily stunned; that is to say, the brain is so shaken up that for the moment it loses its functions. Temporary unconsciousness ensues; the patient becomes pale; the pulse flickers a few moments. Phenomena very like syncope ensue. In a few minutes he rouses; is dizzy; gets up; regains consciousness slowly; has a certain amount of nausea; and then, afterwards, for the rest of the day, or for a short time, has headache, and the trouble is over. That is the simplest form of concussion. It is followed by no appreciable lesion. It is as if we had dropped some delicate instrument, like a watch, upon the floor, and temporarily stopped the works. Picking it up, and giving it a little shake, sometimes the watch will start on as if nothing had happened. So with the brain; and if such a case should be examined at the time, undoubtedly we could find nothing in the brain itself, left behind as a trace of the injury. That is, there is no real lesion.

On the other hand, the patient may receive a like injury, but a little more severe, and instead of recovering consciousness at once, may continue insensible for some little time; and only regain consciousness, perhaps, after some hours, when he slowly returns to consciousness; is sleepy; stupid and pale, and bathed in perspiration; has nausea, perhaps, for another day, and then slowly and gradually comes out of this condition, without any appreciable lesion, and recovers perfectly. That is the second stage, so-called, of concussion. In that case concussion has been followed by a moderate amount of effusion of serum in the ventricles and in the arachnoid cavity, producing temporary compression, of short duration; it is speedily absorbed again, and the patient is restored to health.

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[1] [illegible]

Another degree still more severe is this: the patient goes through the same phenomena; they last much longer; instead of getting well in a day he gets well in a few weeks, or more. During this time he has positive symptoms of compression of some part of the brain, followed by slight local paralyses; and then, after a while, he recovers even from these. In that case the concussion has been followed by the rupture of some small vessels and by effusion of blood; which blood has coagulated; has compressed limited areas of the brain; has been slowly absorbed, and the patient has recovered.

And finally, there is a stage of concussion which is extremely common and whose symptoms are very peculiar, and which is called, sometimes, concussion with contusion of the brain. In other words, the brain is bruised. The patient receives a blow; goes through the usual phenomena of unconciousness for a short time; rouses from the supposed concussion. There is no paralysis left; but there is high temperature; there is a general irritable condition of the special senses: acute hearing; disagreeable sensibility to light; pupils usually contracted; and frequently one contracted a good deal more than the other; irregular pupils; restlessness; want of sleep; general nervous exitement without positive delirium; this condition coming on for a week, or more; then being followed by severe symptoms of fever; by a chill; by paralysis and by death. In these cases we have what is called concussion of the brain, with contusion or bruising.

First, the shaking up; then the shaking up that went so far that it lacerated some part of the brain. Now, where is that most likely to occur? Obviously if we look at the inside of the skull we must see that that is more likely to occur somewhere about the base of the skull; about these numerous irregularities of the fossæ of the base of the skull. Accordingly the contusions of the brain are generally found somewhere toward the base of the brain; and the symptoms produced, of course, vary according to the particular part of the nervous centre that is injured. These contusions often are of extremely limited extent; and a careful watch sometimes has to be made for them at the autopsy to find where the mischief has been. We do not find a large softened spot of brain; and do not find, perhaps, any large effusion of blood; but search shows, that in certain places, what are called miliary extravasations have taken place. I mean by miliary extravasations the same minute points that we mean when we speak of miliary tubercles in the lungs. Little clots; little softenings; little tumors; capillary bleedings which give rise subsequently to gradual arrest of the circulation of the part from pressure; and afterwards to softening of the substance of the brain; and to minute abscesses, followed by coma and death.

When a man is knocked over, gets up and goes about his business and feels no great disturbance except slight headache, he has been stunned, and has had a slight concussion of the brain. Anything beyond that is almost always accompanied by some permanent lesion; one that will last for hours, or days, or longer. In the simple cases, effusion of serum; in the more severe class of cases, effusion of blood; and in the severest class, bruising of the brain substance itself.

Now, on the other hand, when a person, for instance, receives a blow from a club in the hand of some other person upon the top of the head, and is knocked down in consequence, a scalp wound may be produced; in which case we wash away the blood and look at it, and find a large piece of the skull driven in; never driven in squarely; but compressing the brain substance itself. Such a piece of bone, if raised, is frequently found to have torn the dura mater; and it not infrequently happens, when we first see the patient, that we find portions of cerebral substance oozing from out of the chink where the bone has torn through the dura mater and lacerated the brain itself. Such a patient is felled unconscious, but he never rouses. As long as he is untreated, he never rouses. That is true compression of the brain. A blow which has knocked in the skull, lacerated the dura mater, crushed the brain substance and interfered permanently with the function of the brain by pressure is called compression. A case so marked as this gives very marked symptoms; and quite distinct from the symptoms of the various degrees of concussion that we have mentioned. Such a patient has dilated pupils, which are wide open and will not respond to light. He snores in respiration, just as a patient does under the profound anæsthesia of ether. He sweats profusely. His pulse is extremely slow and full and labored; sometimes sinking as low as fifty, forty-eight, forty-five or forty, or even thirty beats a minute. It is regular, and full and bounding; but extremely slow. He is practically dead to consciousness. He is unable to swallow; unable to rouse; does not use his limbs; is perfectly unconscious. This condition, if not interfered with, terminates in death, but not immediately. The patient lasts quite a while; generally into the second day; sometimes a few hours; but usually thirty-six to forty-eight hours, before he gradually sinks and dies, with an interrupted, sighing respiration, without the slightest return of consciousness. This is pure and distinct compression. Between such a state as this and the condition of a patient temporarily stunned, who is quickly roused; with flickering pulse; irregular pupils; nausea, etc.; the distinction is extremely marked. Simple concussion, the lighter degrees, are usually distinct from those of pure compression; and it is only when we come to cases of concussion of the third and fourth classes, where there has been a lacerated blood vessel, or bruised brain, that the symptoms begin to run together, and it is difficult to tell the symptoms of concussion with contusion from those of compression itself. I speak of this more particularly because in the older books on surgery a distinction was made between concussion and compression. Concussion was so-and-so; compression so-and-so, as if all cases of head injury which were at all severe could be classed at once as simple concussion, or profound compression; whereas they grade into each other; the condition of the pupils now has come to be less and less regarded as diagnostic of one from the other. The most important prognostic point about the condition of the pupils, which seems to have been brought out by late investigations, is whether or not they will respond to light. If they respond to light, a large percentage rouse and recover; if they do not respond to light, a very large majority never rouse from the condition of coma. The patient may be unconscious; and yet the pupil, if a bright light is thrown on, may act, or may not act; and that seems to give us a very important guide as to the future of the case.

When the concussion is accompanied by effusion of serum, it is poured out about the seat of the injury in the arachnoid cavity. This also distends the ventricles, adds largely to the amount of cerebro-spinal fluid, and makes a temporary serous apoplexy as it is called, temporary serous compression. This does not last long. It is soon absorbed and goes away. It would be hardly worth while to inquire where such an effusion of serum probably begins. It soon becomes diffused, and its symptoms, which are produced in a few minutes, seem to be about the same no matter where the first blow was received. It is absorbed again and its symptoms pass off. Not so with the effusion of blood. It makes an immense difference where the effusion of blood starts from. After a blow received upon the head which ruptures a vessel inside the skull, blood may be poured out in quite a variety of situations according to the vessel that was wounded. In the first place, it may be between the dura mater and the skull; in which case it is very distinctly localized; and cannot be poured out very rapidly. It has to dissect up the dura mater from the skull itself; slowly tearing away the membrane from the bone; and by the hydraulic pressure of the pumping vessel a clot is slowly formed between the skull and the dura mater; it coagulates, and separates the membranes from the skull.

On the other hand, the effusion of blood may take place inside the cavity of the arachnoid. The vessels may be ruptured there. In that case the hæmorrhage goes on rapidly. There is nothing to arrest it, nothing to localize it or determine where it shall go except the thousand accidents which may come from the position of the patient, the side on which his head lies. The effusion of blood in the arachnoid cavity rapidly diffuses itself in any direction according to the laws of gravity, and ceases to be localized very soon after the vessel is ruptured.

Not so from the laceration of deeper vessels about the base of the skull, which result from a tear of a nutritive vessel permeating the brain substance itself. These must be localized. They form local clots; their phenomena resemble those which follow an ordinary attack of apoplexy, where one of the nutritive vessels in the brain bursts and a clot is poured out; is localized; pushes aside brain tissue; cannot become very large, and the symptoms produced are due to the loss of function of that particular spot of the brain where it occurs, and the part of the brain which it happens to compress.

In old times, Mr. Pott, an eminent surgeon in London, wrote a book on trephining the skull for injuries of the skull and lacerations of vessels, in which he thought he could determine the place where the vessel was ruptured, trephine and remove the clot, and relieve the symptoms and cure the patient; and for a certain percentage of cases he did so; but it so happened that, in all probability, the larger proportion of Mr. Pott's cases were those of extra-dural hæmorrhage; that is, between the dura and the bone. The vessel most likely to be ruptured there is the middle meningeal artery, which passes up behind the inner side of the temporal bone, one and a fourth inches behind the outer angle of the orbit. A blow being received in that vicinity, if it ruptured a vessel inside the skull, is more likely to rupture the middle meningeal artery than any other. A blow on the squamous portion of the temporal bone is likely to crack through that bone and to rupture the middle meningeal artery. Probably a good many of Mr. Pott's cases were rupture of the middle meningeal artery. The effusion was localized; was directly beneath the site of the blow. The bruise on the scalp, or the cut on the scalp, led to the location of the clot inside the skull. On trephining he found the clot; removed it, and the patient was relieved.

On the other hand, we have no guide as to the location of effusions of blood in the arachnoid cavity. They are poured out, diffuse themselves, may go anywhere within the arachnoid cavity. The coagulations, however, which take place in the brain substance, from rupture of a vessel there, produce as distinct and permanent a class of paralyses as the various forms of apoplexy, and can be localized better.

Perhaps it is well, in this connection, to point out to you the very great distinction which exists in the rapidity of the symptoms that are produced between compression caused by a piece of bone driven down upon the brain, and compression caused by extravasation of blood between the dura mater and brain from a tear of the middle meningeal artery, or from some other vessel between the skull and the dura mater. Take the patient who is knocked down we will suppose with an axe; the skull driven in; he is instantly felled and unconscious; lies comatose — this is an example of compression. On the other hand, the patient who has received a blow rupturing one of the extradural vessels goes through the following series of phenomena. At first he is stunned; he rouses from that; after lying a few moments he is able to get up; feels dizzy and uncertain; but retains consciousness; and is frequently able to walk; grows better for some little time; and it is only after the lapse of a half-hour, or hour, that he begins to feel a sense of terrible weight and stupor in the head, and gradually becomes more and more dizzy, until finally he drops into a state of paralysis and unconsciousness and compression. This arises from the gradual effusion of blood which is poured out with great force between the dura mater and the skull; dissects the dura mater from the skull in proportion to its size; must compress the brain, because the skull cannot yield, and the dura mater and brain can.

Compression from hæmorrhage inside the skull is gradual; compression from the driving in of bone is immediate. Those are the general distinctions between the two.

All the phenomena of head injury, however, as regards the point where the blow was received, and the consequent injury, are very much modified and confused by another force which comes into play, and which is called contre coup; that is, transmitted force to the opposite side of the skull. Hence effusion of blood and the phenomena of paralysis may be all due to an injury at a point directly opposite the point at which the blow was received. This, of course, confuses very much the diagnosis and prognosis of brain injuries.

We hear a good deal of fractures of the base of the skull. They are various in character. There are certain parts at the base of the skull which are quite thin and which more readily break than others. Those are called fossæ. We have the anterior, middle and posterior cerebral fossæ. The anterior cerebral fossa is formed by the roofs of the orbits which are extremely thin; and it is bounded by the glenoid process of the sphenoid bone, which separates it from the next, the middle fossa, which is quite thin. This is bounded by the firm structure of the petrous portion of the temporal bone. Then we have the posterior fossa where the occipital bone is quite thin down by the foramen magnum, bounded by the temporal bone in front and the thick occiput behind; and it is thin also over the venous sinuses at the base of the brain.

Fracture of the base of the skull is difficult to diagnosticate, because we cannot see anything; can trace nothing; can feel nothing about the skull. The injury is where we cannot trace the fractured bone, or be guided by any of the ordinary signs; and can only infer and reason from symptoms, where, probably, a fracture of the base has taken place, if it has taken place at all. The patient may be in a state of compression, and yet there may be no evidence of depression of bone upon the surface of the skull. The question then arises whether this compression may be due wholly to laceration of brain and formation of clots, or whether it is accompanied also by fracture of the bone, out of sight, in the base of the skull. It is sometimes difficult to distinguish between the two. There are certain phenomena which show themselves outside which enable us to judge to a certain degree; and these phenomena are quite important. In fracture of the anterior fossa of the base of the skull, we have the roofs of the orbit cracked through more or less; have the cribriform plate very easily cracked through; and occasionally we have also an opening forward into the frontal sinus; but, at any rate, the cribriform plate, or the roof of the orbit, is almost sure to be broken through. Two series of phenomena follow: nose-bleed coming from the cribriform plate, from the rupture of veins there; and the other is what we call subconjunctival ecchymosis, ecchymosis not in the ordinary form of black eye which breaks the vessels of the lid or conjunctiva, but bleeding which takes place beneath the conjunctiva, and spreads itself over the sclerotic coat of the eye. This is due to the rupture of vessels deep in the orbit. In severe cases this blood may extend, if the crack through the orbit is extensive, may extend elsewhere, and gradually the patient will exhibit discolorations upon the face and neck, several days after the injury, the face becoming black-and-blue in extreme cases. Ordinarily, we have nose-bleed and ecchymosis in the orbit.

Now, on the other hand, if the middle fossa is broken through, the most likely place where blood will be poured out is into the throat and mouth. The top of the pharynx is attached at the junction of the spheno-occipital bone; and hence bleeding into the mouth and throat is not uncommon in consequence of fracture of the middle fossa of the base of the skull. Inasmuch as the petrous portion of the temporal bone is so near, frequently we have lacerations which extend through the middle chamber of the ear, and cause bleeding from the ear itself. Bleeding from the ear, and serous discharge from the ear, have long been considered among the most significant symptoms of fracture of the middle fossa of the base of the skull. They are not, however, diagnostic. The bleeding from the ear is quite common in severe injuries of the head, and does not necessarily mean any injury of the bone. Any small vessel may be ruptured and bleeding take place. Neither does the discharge of serum from the external ear, unless very profuse in quantity, necessarily mean fracture of the middle fossa about the base of the skull, and the leaking of cerebro-spinal fluid. When profuse and long-continued, then it can be nothing but cerebro-spinal fluid which runs out through the fracture of the middle fossa at the base of the skull and the laceration of the membranes; it is increased in quantity by the irritation of the injury, just as we see in other cases where an injury has been received, and it is poured out in large quantities. This, however, is extremely rare. When it is seen, it is a diagnostic symptom of fracture of the middle fossa of the base of the skull.

When, however, the serous fluid is only seen slightly, for a short time, doubtful, mixed with blood, it may mean nothing more than the liquid contents of the vestibule and labyrinth which have leaked out through the fissure of the drum, and possibly the partial fissure of the temporal bone, which may not extend inside of the skull to the cavity of the brain.

One other symptom, however, may arise in this connection, which is very characteristic, and that is facial paralysis. Facial paralysis, if it occurs in connection with these other symptoms, is almost diagnostic of fracture of the middle fossa of the base of the skull, because it shows that the petrous portion of the temporal bone has been broken through, that the facial nerve has been compressed in its bony canal, and facial paralysis is the direct consequence.

In the posterior fossa we also have laceration into the ear. We have also other symptoms; we may have bleeding into the pharynx, the same as in the middle fossa. We have one other symptom, quite diagnostic sometimes, and that is a break through the lateral sinus, and effusion of blood in and behind the mastoid process, and out in the neck; large ecchymoses gradually forming behind the ear, and running down the back of the neck. These are very marked; and indicate, almost invariably, rupture of the lateral sinus with leaking out of venous blood into the tissues behind the ear, behind the mastoid process, and down between the long muscles of the neck.

Nose-bleed, subconjunctival ecchymosis, bleeding in the pharynx, blood and serous discharge from the ears, facial paralysis, large ecchymoses behind the mastoid process — those are the common phenomena accompanying fracture of the base of the skull.

Fracture of the base of the skull can hardly occur without cerebral laceration and some effusion of blood within the skull itself; therefore the symptoms are almost always of the mixed variety. There may be complete unconsciousness. There may not be. It depends upon the amount of compression. If the patient lives, the case is a long one to recover. Some of them do recover. It sometimes is a long one, if it has a fatal result; and fracture of the base of the skull is occasionally followed by a prolongation of life for a week or ten days, during which the patient finally sinks, with symptoms of cerebral abscess and softening.

One great danger that arises in injuries of the head is from the occurrence of septic absorption from some of the wounded tissues. This, of course, is especially the case in wounds which communicate with the air, and in compound fractures. That danger, and the danger of injury of the brain and membranes by fragments of bone, is the next point we have to speak of.

Now the only way that we know of averting the dangers of sepsis and pressure is by surgical interference. Surgical interference in the skull means generally the use of the trephine, because otherwise we cannot get at the injured parts. It is true that occasionally a fracture of the skull occurs which is so comminuted that we have only to press away the periosteum and flesh, to pick out certain loose pieces of bone, and we need no further instrumental interference; but usually the bone is driven in under the sound portion, shelved in under the edge obliquely and fastened there, so that it is impossible to extract it. In order to extract it and relieve the pressure, we have to cut out a button of adjoining bone to get room to insert forceps to remove it.

As little of the sound bone is to be cut away as possible; but the centre of the trephine, of course, must be started on the sound bone, and a piece cut out which includes a little more than one-half the circumference on the sound bone, and the rest on the depressed fracture. That is the usual rule.

Such a thing being fully accomplished, and the piece taken out, then the parts are thoroughly cleansed, and dressed antiseptically, as in an ordinary wound. Sometimes a drainage-tube is put in.

But the most important question for us to consider, and one that is yet not fully settled, is, when it is best to interfere at all. In old times trephining was a very different thing from what it is now. It is not too much to say, I think, that the introduction of the aseptic method has diminished the danger, and the mortality from trephining very much. Before the antiseptic method the mortality from trephining was great; so much so that many were discouraged from interfering; and we abstained from using the trephine, if we could find a proper excuse to do so. Now, under the additional safety of the antiseptic method, the tendency has perhaps gone too far the other way; and the tendency of the times is to use operative interference in perhaps more cases than is really necessary.

For a clear understanding of the matter it will be best to proceed in this way: — What cases, in the first place, should be trephined under any method of practice; demand trephining? First, punctured, depressed fracture. Some little hard substance, like a bit of iron or sharp piece of steel or portion of a block from a ship, falls from a considerable height, strikes the patient squarely on top of the head, produces a minute punctured scalp wound, also a minute punctured wound of the skull, exactly as if a nail had been held against the skull and driven in with one blow of the hammer. At first the patient undergoes the usual phenomena of a temporary concussion; he falls and is unconscious, but soon comes out of that; and, subsequently, he frequently gets up, and often walks to the hospital; and comes in to have a simple scalp wound dressed, not feeling that he is deeply hurt, and not willing to believe it. The symptoms which are produced by this injury are not immediate; and unless we knew, by experience, what was going to follow in all these cases, after a few days, if let alone, we should not feel called upon to interfere with the patient at all. But the subsequent history is this: the outer table being broken through in a minute hole, the inner table is also depressed and shivered into fragments; and although the outer table may be in one piece, the inner table is almost always in several pieces; minute and detached and sharp fragments, which press in on the dura mater, and surely set up meningitis. They do not at first make sufficient compression to make the patient sick; but in a few days he begins to be sick; symptoms of meningitis come on; and then the little pieces, which are detached and unnourished, necrose, and continue the suppurative process, and set up septic phenomena in addition to the ordinary ones of inflammation of the meninges; and the result is almost inevitably fatal. Such patients have, at first, but few symptoms except the immediate effect of the concussion; have a little headache and dizziness and do not feel much sick. If not treated, in a few days this series of phenomena begins to come on: the patient begins to grow a little restless, uneasy, a little sensitive to light, a little acute about hearing sounds, begins to have persistent headache; his temperature rises, and presently are ushered in the symptoms of acute inflammation of the membranes. Here is a case where trephining is called for at any rate. The patient must be persuaded to submit to it; and a cure, at such an early stage and with so slight an injury of the parts, is pretty sure to be produced; but even if it were not sure to be produced, we should persuade the patient that he should be trephined, on account of the subsequent history, which is sure to be disastrous.

Now the ordinary case which calls for trephining, which I will describe next, cannot admit of any doubt to any one's mind. The patient has received a scalp wound; the same blow has broken the skull. The skull has been driven in, perhaps cracked in several directions. He lies in a state of coma, unconscious, with stertor and all the symptoms of compression. If you can, lift up the bone; if you cannot, you must trephine, and take off all the pressure from the brain. That case, of course, admits of not the slightest doubt at all.

Now comes another case which is not quite so plain. The patient comes in with no scalp wound, has a hæmatoma under the scalp. It is hard to tell whether or not he has a depression, but he has the symptoms of immediate compression. He was struck, fell unconscious, has never roused, remains in a state of coma, with stertor and slow pulse. Such immediate effects produced can hardly fail to be due to depression of bone, because there has not been time for effusion of blood to take place, and this latter brings on the phenomena of compression more gradually.

Given a patient who has received a blow upon the head and has symptoms of compression, it is imperative to interfere. If we find fracture, we should trephine. No one can hesitate with the bone depressed before their eyes and the scalp gaping open, to interfere and remove the piece. It is more difficult to decide and persuade ourselves to cut through the unbroken scalp; to subject the patient to some risk of a wound through the scalp, which he has not already suffered, to relieve symptoms which are somewhat obscure; but if he has distinct symptoms of compression, I think we should not hesitate to interfere to the extent of making thorough incisions, exploring, and acting according to what we find.

In old times one trephined for this. In modern times we should do the same.

Now come more doubtful cases. The most marked of these is where the patient receives a blow, remains conscious some time, becomes gradually unconscious, and we have every reason to believe is suffering from compression from blood inside the skull, a clot. The whole point turns upon whether that clot can be localized; and if it can be localized, whether it can be reached and removed by trephining the skull, and then turning out the clot. The location of the injury, if over a large vessel like the middle meningeal; the slow occurrence of the symptoms; the exactness with which the symptoms can be defined, must guide us a good deal in this respect; and, it is fair to say, that if we succeed in finding the location of the clot and removing it, and it is outside the membranes, we shall almost inevitably make a brilliant success. The symptoms will be relieved just as they would by taking away a piece of bone; and the patient will recover. If, on the other hand, the blood has been poured out into the arachnoid cavity, we may not find it, and may not succeed in curing the patient. Now it is in this class of cases, which, so to speak, are on the border line between interference and non-interference, that we may apply the principles of modern antiseptic surgery, which renders it so much more safe to trephine than it was formerly. There is no very serious mischief produced by trephining, unless we feel obliged to puncture the dura mater and explore inside the arachnoid cavity, or the brain; then we do subject the patient to a good deal of additional risk; and one must judge for himself, from the appearances of the part beneath, and the non-relief of the symptoms, whether it is wise to persevere. Loss of pulsation in the brain; bulging, etc., all those symptoms must decide us, whether it is best to cut down through the dura mater, and seek for the clot.

Much slower symptoms come on when abscess forms. The patient may have received a slight injury. The symptoms at first may be very obscure, indicating perhaps concussion with contusion; — irritable pulse, and rather sleepless nights; one pupil larger than the other, and a mild form of delirium coming on. This may go on some little time, when suddenly there occurs a chill; usually in the course of five to eight days, sometimes in the second week. After this, a profuse sweat and high temperature; and then commencing symptoms of stupor; growing duller; respirations growing slower; pulse growing slow; other symptoms of compression coming on; until finally, if the patient has no relief, he sinks into a state of profound coma, and dies at the end of a few days. These are the phenomena of suppuration occurring around an injured point in the brain; that is, the brain has been bruised; miliary extravasations have taken place; gradually these have undergone septic changes and have softened; the initial stage of suppuration is marked by the chill; abscess of the cerebrum forms, with all the symptoms of compression added to the symptoms of suppuration. Here is a case, then, where under the old method we should trephine with great hesitancy; under the modern method we are quite justified in trephining; in cutting through the dura mater, and in exploring, in the hope of finding pus and letting it out. If we fail, the patient certainly is not any worse than before. He was truly on the road to death under the symptoms he had before. If we succeed, and evacuate the pus, and drain and wash out the cavity, occasionally we get a cure.

These responsibilities are very serious, and we want to be quite clear that the diagnosis is fairly certain, that the patient is quite sure to die as he is going on, before we venture on so profound an injury to the brain, in the hope of finding a suppurating centre. Hence we see that certain cases are quite clear; while some are quite doubtful. We are encouraged to trephine much oftener than formerly on account of the immunity afforded by aseptic surgery.

There is a class of cases where in old times no one would have thought of interfering, and in modern times people do interfere, and which may be classified as cases where the operation may be justifiable, or may not be justifiable, according to the light of statistics. Such cases as these are essentially chronic cases; cannot be acute ones. Acute ones drive us to a decision, one way or the other, at once. The phenomena are so severe that they usually are pretty clear; but it is the chronic case that can be considered for days; and whose whole history is to be gone over for months; the family history to be considered; whether the patient has descended from epileptic parents; or whether he possibly has original, or inherited syphilis; all these things have to be weighed thoroughly, before we trephine these chronic cases. We trephine, nowadays, for epilepsy; for scar-tissue thought to be the seat of chronic headache and to produce epilepsy; for syphilitic thickening; for syphilitic gummatous tumor; for brain tumors of another class which are usually either soft glioma or sarcoma; and for tension, meaning by that something inside the head which is pressing the brain; irritating; and which may be relieved by cutting a hole in the skull; then cutting open the dura mater, and allowing the tension to be taken off; the serum to drain away; and more room to be given to the parts. For all these things, trephining is occasionally done. It is frequently done without any relief to the patient. It is fair to say, it is frequently done without any damage to the patient. It is extraordinary how under modern antiseptic methods, a good many of these doubtful cases are explored and then heal up; and, apparently, are neither better nor worse than before. Some of them occasionally get better.

There is a curious affection of the brain, after the membranes have been cut away, which used to be called hernia of the brain. The pulsation of the brain inside the head, apparently, the moment the tension of the enveloping sheath of the membrane is taken off, pushes the soft brain substance up into the opening; tends to protrude it more and more; and gives rise to a species of tumor, which used to be called hernia of the brain. It has been proved, I think, that the mass that grows out in these openings is not really so much brain tissue, as a sort of irregular fungus growth; a proliferation, which takes place on the surface of the brain. It is difficult to treat. It is frequently fatal. In the older times of surgery it was very commonly fatal, and was very much dreaded. Compression, if applied too forcibly to restrain its pushing out, may produce symptoms of coma and compression of the true brain beneath. Agents applied to it in the shape of styptics, or astringents, or escharotics have to be used, of course, with a great deal of caution, because that also may light up a meningitis; or destroy true brain-tissue and lead to cerebral abscess. Under the modern treatment hernia of the brain seems to get along much better than it used to; and it is quite encouraging that it does. Keeping it packed antiseptically with gauze; keeping up moderate pressure, seems to check the fungus proliferation and the formation of serum and pus, which formerly took place to a great degree; and some of these forms of hernia can be led to heal without serious symptoms.

To sum up briefly: We must never forget that any head injury may become serious; that even a slight concussion is not safe, until a fortnight has elapsed; that it is more dangerous in the child than in the adult; that the child who has received a concussion is certainly not to be considered safe, until two weeks have elapsed, although the first few days of headache may have passed off; that this is especially true, and to be regarded with great care and suspicion, if the child happens to inherit a tuberculous constitution, because tubercular meningitis is very easily provoked in such a child; that all head injuries, which are at all severe, are well treated by the old antiphlogistic method, aided by antisepsis (by this I mean reducing and quieting treatment, in various forms); that antiseptics have given us greatly increased advantages in treating scalp wounds, fractures of the skull, inflammations of the brain, extravasations into the brain, and tumors in the brain, from whatever cause; that there are certain very simple rules to be followed with regard to trephining — a few cases which are plain and apparent, such as direct, compressing fractures which are compound; fractures which are not compound, but still are compressing; and punctured fractures; that there is another class of cases where we trephine for clot, or abscess, where the diagnosis is a little more difficult, but still where there is a fair percentage of success; and, finally, there is a very large class of chronic cases, where we balance the probabilities, where we are encouraged occasionally to interfere by trephining, and encouraged especially by the fact that trephining is not the fatal operation that it used to be.

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THE MISUSE OF DRUGS IN MODERN PRACTICE.[1]

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Mr. President and Fellows of the Massachusetts Medical Society: — The first article in the Code of Ethics adopted by this Society declares that "a physician should lend his influence to encourage sound medical education, and to uphold in the community correct views of the powers and limitations of medical science and art."

This Society has always held that education is the only source of a sound practice of the medical art. While it has fairly stated the powers of the art, it has not failed to speak of its limitations in plain and honest words.

Much as the Society has done in the past, the work is not finished. The war against ignorance and superstition is a never-ending one. This community guards its property with jealous care. The lawyer cannot practise his profession until he has passed the examination of the court. The pilot, who brings the merchandise of our citizens safely into port, must have proved his ability before the proper tribunal. Even the drain-layer must have a license, and presumably have shown his fitness for his work.

Not so does it deal with those who profess to cure the diseases of its people. The educated physician and the quack stand on equal terms before the law. Other States have passed laws which have driven out ignorant pretenders to medical skill. We have opened our doors to them. They have become so many and so strong as to prevent the enactment of a law to compel every one who claims to be a practitioner of the art of healing disease to prove his knowledge of its fundamental principles. What a comment on the good sense of our community in the closing years of the nineteenth century. The man who lays a drain must have a license; the man who deals with the health and lives of its people needs none!

The only explanation of such a want of common sense in a community so intelligent as ours, is that incorrect views of the powers and limitations of the medical art still prevail. Disease is still looked upon as the result of some malign force. Drugs are still thought to be the most efficient agents to cure it. The advertising pages of the newspapers are filled with promises of cure for all the "thousand natural shocks that flesh is heir to." The mails are flooded with circulars, the streets littered with hand-bills, relating wonderful cures of diseases which have baffled the skill of regular physicians. Money is freely expended in this business by men who look for a return from their investments. That it is a profitable enterprise is shown by its growth. While it is not new, it was never so extensive or so elaborate in its methods as now. Our patients, when they carry our prescriptions to the apothecary, see large stocks of these proprietary and secret remedies on his shelves. The great stores, where almost everything is sold, advertise "cut prices" on these goods. Grocers, even, display them by the side of articles much more tempting to the taste. How largely they are used this audience well knows.

The grosser forms of quackery which claim supernatural powers, finding their victims among the superstitious, who are not always ignorant people, I need not describe. This Society is not responsible for them, nor for the folly of those who resort to them. But when we consider the widespread belief in the community, that drugs are always useful, and generally necessary in the treatment of disease, we may well ask if we are not, in some degree, responsible for it.

Each generation is prone to think itself wiser than those that have gone before it. We admit the mistaken practice of our forefathers. We congratulate ourselves that the day of blood-letting, of mercurials, of disturbing medicines in general, has gone by. We see that faith in drugs, still so prevalent, was the lesson taught by the profession in those earlier days. Do the modern methods of treating disease justify the public in maintaining this belief?

I ask you to listen to some considerations upon the misuse of drugs at the present time; the limitations to their usefulness; and the powers of the medical art which have been gained from other sources than drugs.

It is often said that we do not give as much medicine as our fathers did. If this is true, it is not due to a want of material. We are told that Hippocrates mentions only two-hundred and sixty-five drugs in his writings.[2] The Pharmacopœia of this Society, published in 1808, includes the materia medica and its preparations and compositions in one hundred and seventy duodecimo pages. If we compare this book with the last revision of the United States Pharmacopœia, or with the last edition of the United States Dispensatory, we may well doubt the truth of the statement.

It is true that the Dispensatory includes many obsolete and inert drugs, but the list of medicines in daily use is many times longer than that of our early Pharmacopœia. Nor is it yet completed. The mineral, vegetable, and even the animal kingdoms are almost daily giving us new remedies. The chemist, by skilful synthesis, makes new compounds out of old ones. The pharmaceutist combines and offers in attractive and convenient forms the many drugs which the modern system of treatment demands.

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[1] [illegible]

[2] [illegible]

Our drugs have gained in power as well as in number. A large part of the old Pharmacopœia of our Society consisted of drugs of little power for harm. To produce any effect, the doses were so large, and so repulsive to sight, smell and taste, that the fortunate power of the stomach to reverse its muscular action often saved the patient from harm. Now the chemist has separated the active principles of drugs, giving us agents of great power for harm, as well as for good, in doses so small as to be easily taken. The art of the pharmaceutist has made them inoffensive to the taste. Copying the wisdom of the serpent, we inject them under the skin, beyond the power of a perhaps outraged nature to reject them. The minuteness of the medicinal dose of some of these active principles would have been called almost infinitesimal by the physician of fifty years ago. There can be no question that both in the number and potency of our drugs, we are far in advance of our fathers. So far, we justify the views of the community as to the importance of drugs.

In Article V of our Code of Ethics we read: "But a physician should lend his influence to establish a distinct line between the regular practice of medicine and the practice of quackery, and should avoid any act which might tend to weaken such a distinction either in the professional or in the public mind."

Do we observe this rule, or do we tolerate or even sanction methods of using drugs which violate it?

Until within a few years, new drugs were brought to our notice through regular channels. We read of them in reputable journals. Men, whose names gave weight to their opinions, recorded their experience of them. They were discussed in medical societies, and their power for harm as well as for good was fully and fairly stated. Pharmaceutists of good repute prepared them, and briefly advertised their readiness to supply them. The advancement of medical science, the improvement of the medical art, were paramount considerations. The distinction between the ways of regular medicine and quackery was so sharply defined that no one could mistake them.

In these days, new customs have arisen. The pharmaceutist no longer contents himself with providing the profession with the drugs which its experience approves. He aims to direct the medical art. He proclaims the virtues of new drugs, ignoring their dangers. He vaunts the superior qualities of his own wares. Imitating the business methods of his quack rivals, he scatters his circulars broadcast among the profession, containing promises of cure and certificates of results which would do credit to the advertising agents of the rival Sarsaparillas. Let me read a specimen of the therapeutic literature which they so freely bestow upon us:

> "When Papoid is applied to the diphtheritic membrane, four distinct though allied effects are observed. That it seems to have a penetrating property which is exerted with such rapidity that when once really applied no amount of washing of the parts will remove it.
>
> "That in a few hours the membranes are dissolved or detached, and do not re-form, because
>
> "The bacteria of the disease are also destroyed.
>
> "The formation of the specific poison or 'toxalbumen' of diphtheria is arrested, and abnormal bodily temperature falls.
>
> "The removal of the morbid growths from the throat relieves at once the embarrassment of respiration, and in a large majority of cases a complete cure is effected."

Many other useful properties of this medicine are set forth. The inferiority of pepsin is asserted. Not to be outdone by the quack, the case of a "blind ischio-rectal fistula of twenty years' standing" is related:

> "This case had been operated upon repeatedly, and treated by some of the best men in the country. All treatment had failed. I had operated upon and treated the case for about a year, and had given it up as one beyond my ability to manage. What I am about to state may seem somewhat startling, but it is none the less true. After proper preparation of the fistulous tract, one injection of Papoid effected a cure."

Here the writer's conscience seems to have pricked him, for he adds, "At least it has been well for about two months."[3]

Having, by such means, brought us into a state of "expectant attention," he follows up his communications by a personal interview. His agents, men who have some knowledge of medicine if he can get them, enter our offices with the assurance of "drummers" in a country grocery. We are treated to long lectures on therapeutics if we will listen to them. Samples are spread upon our tables until our rooms look like the commercial travellers' apartment in a hotel. We are told of the good results their remedies will secure; that we cannot afford to be without them; that our neighbors have ordered a supply; and that, if we do not wish to be behind the times, we must also give them an order.

Leaving a sample for trial, a two-ounce bottle of cod-liver-oil emulsion, perhaps, they depart, to be followed in quick succession by their rivals, who extol the virtues of their own preparations, and point out the defects of those of their predecessors.

There is one striking feature both of their literature and their lectures. Their medicines are always successful. A few days ago, I called the attention of the agent of one of the oldest firms in the country to this fact. "We have no use for unsuccessful cases," was his frank reply.

Not satisfied with copying the methods of the quack, they imitate those of the educated physician. So-called medical journals, marked sample copies, come to us with the regularity of those we pay for. They contain a few articles of merit, copied from some regular journal, but consist almost entirely of advertisements and testimonials recommending the medicines of some manufacturing firm, "A splendid remedy," "A grand combination," "I would not be without it for any consideration," "Send me a dozen bottles." Who does not know this yellow-covered literature of modern medicine?

But these enterprising business men do not stop here. Their money buys the advertising pages of some of our best journals. Let me read some specimens of their art:

> "PONCA COMPOUND. Uterine alterative. Exercises a specific alterative action on the uterine tissues, a general tonic influence on the pelvic organs; has a tendency to absorb plastic deposits, to regulate the vascular supply, to relieve congestion, to tone up the nerve forces, to encourage peristalsis of the bowels, and to remove spasmodic conditions. 100 tablets mailed on receipt of $1.00."
>
> "FEBRICIDE, the only complete antipyretic of the materia medica. It sustains the patient, it reduces the temperature, it kills the fever. A restorative of the highest order. A powerful anodyne. Invaluable in malarial dis-

[3] Papoid Digestion, etc. Johnson & Johnson, manufacturing chemists, 92 William Street, New York.

cases. A positive remedy for rheumatism and neuralgia. A specific for [illegible] and pneumonia. The natural antipyretic."

"Dr. Borst's Pyrolignine, the new 'wood tar' product. Antipyretic, anodyne, nervine. Reduces temperature. Subdues pain. Restores nerve power. No secondary effects. A remedy of pronounced value in acute inflammatory fevers . . . and all affections in which fever, pain and restlessness, alone or combined, are to be governed."

"Liqueur de Laville. A prompt, tried and infallible specific for gout in all periods of the attack. Dose, one to three teaspoonfuls daily. Professor Brown-Séquard, at a meeting of the Paris Society of Biology, October 15, 1887, said: 'Laville's well-known remedy acts marvellously well in gout, in witness of which I cite the following circumstance which occurred under my own observation. Dr. Fleury, of the French Faculty, and also author of several works on hydrotherapy, had an attack of complete paralysis of the right side, with anæsthesia and aphasia. Precursory symptoms having appeared on the night before, he directed that in case he would be unable to read or write, a large dose of Liqueur de Laville should be given to him, provided I saw no objection to it. I assented. Two hours afterward, all symptoms of paralysis had disappeared."

Thinking it worth while to investigate this remarkable preparation, I wrote to the firm advertising it, for its formula. The answer was as follows: "We are sorry to say we cannot give you the formula of 'Laville's Liquor' exactly; have been informed that it contains colchicum and colocynth; from practical experience we know it to be a very useful remedy for Gout and Rheumatism."

"Wheeler's Tissue Phosphates. . . . As reliable in dyspepsia as Quinine in ague. . . . It renders success possible in treating chronic diseases of women and children, who take it with pleasure for prolonged periods, — a factor essential to maintain the goodwill of the patient. Being a tissue constructive, it is the best general utility compound for tonic restorative purposes we have; no mischievous effects resulting from exhibiting it in any possible morbid condition of the system."

"'To lessen the fever and strengthen the heart is the first duty.' — *Fothergill*. Febrina Tablets lessen the fever gradually with absolute safety. Cactina Pellets strengthen the heart safely with absolute certainty."

These quotations are not taken from the Sunday newspapers, as you might infer, for nothing in those papers exceeds them in impudent claims to marvellous powers. They are copied from the advertising pages of a single issue of the *Boston Medical and Surgical Journal*.[4]

Made bold by success in this field, one firm has thrown off the mask, and asserts its claim to lead in the art of medicine. In an advertisement in the same journal, we read:

> "In medical practice there are many 'hard questions' arising daily. The busy practitioner is settled in his own mind. Frequently, however, he has not analyzed the reasons leading to his conclusions. *Merck's Bulletin* does the thinking, the analyzing, the proving. It gives him a reason for the faith that is in him. It covers the entire field. . . ."[5]

It is not so strange as it appears that our community does not discriminate more carefully between the educated physician and the charlatan. Such material as I have brought to your notice may be, and doubtless is, used with good effect by the quack. Laid before a committee of our legislature, when a bill to regulate the practice of medicine is before it, I cannot wonder that the report is, "inexpedient to legislate." By tolerating such methods we endorse them, and thus violate both articles of our Code of Ethics, from which I have quoted.

As to the conduct of our medical journals we have the remedy in our own hands. I [illegible] the editors cannot control the advertising pages. It may be that the publishers would lose money, if such advertisements should be excluded. The subscribers can make an effective protest, if they choose to do so.

Let me not be understood as condemning all advertisements of drugs, or all communications of the pharmaceutist to the physician. There are some firms whose publications are always welcome, because they are not inspired solely by the desire for gain. But there can be no question as to the evil effects of such methods as I have named.

According to Hippocrates, the medical art began with the discovery that food which is good in health is hurtful in disease: "For the art of medicine would not have been invented at first, nor would it have been made a subject of investigation (for there would have been no need of it), if, when men are indisposed, the same food and articles of regimen which they eat and drink when in good health, were proper for them, and if no others were preferable to them."[6]

Observation and experience soon led to the use of drugs. But then, as in the day of Hippocrates, and at the present time, "experience is fallacious, and judgment difficult." The great master dispelled the clouds of ignorance and superstition which had so long hindered its progress, and placed the art of medicine on the secure foundation of accurate observation and sound deduction. He recognized the healing power of nature as the corner-stone of our art. He taught the self-limited nature of many diseases. The crude humor became concocted in due season, and at fixed periods was expelled by various channels. While drugs were of use at certain stages, the critical discharge could not be interfered with safely. To remove the cause of the ailment, to put the sick man under the most favoring conditions for recovery, were the essentials of his practice of the medical art. Drugs held a subordinate place. In his reports of cases, which would serve as models for the medical writer of to-day, hardly any mention is made of treatment. Had the successors of this great man followed in his footsteps, the art of medicine would be as near perfection as our knowledge would allow.

But the inductive method was too slow in its movements. Theory soon gave birth to systems of medicine, which, ignoring or undervaluing the power of nature to heal disease, asserted the curative action of drugs. One theory flourished, soon to be overthrown by another, differing from it only in the kind of drugs, or the mode of using them. At intervals a man appeared who tried to lead his fellows into the ways of rational medicine. Sydenham revived the inductive methods of Hippocrates, and impressed upon his age the doctrine of the vis medicatrix naturæ, and the duty of the physician to follow its teachings. Again, systems, the offspring of theory, pass in quick succession across the stage of history. One of these, fantastic in its conception, exceeding all others in its reliance upon drugs, survives and flourishes at the present day. Always having its strongest supporters among the educated classes, its success was, and is, a protest against the use of powerful drugs in effective doses, in the present state of medical science. However strongly its patrons may declare their belief in the efficacy of its infinitesimal doses, their common-sense teaches them that the tenth attenuation of nux is safer than the thirtieth of a grain of strychnia.

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[4] [illegible]

[5] [illegible]

[6] [illegible]

The discourse of Jacob Bigelow, read to this Society nearly sixty years ago, and the work of Sir John Forbes on "Nature and Art in Disease," marked a fresh revival of rational medicine. This Society took a prominent part in this movement. From this platform have come protests against the abuse of drugs which have an application to the present day.

For many years after this revival, the rational method of treating disease was the prevailing one in this community. As defined by Bigelow, whose discourse above mentioned did so much to establish it, it "recognizes nature as the great agent in the cure of diseases, and employs art as an auxiliary, to be resorted to when useful or necessary, and avoided when prejudicial."[7] Once more more our art was brought back to the path marked out by its founder.

(*To be continued.*)

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Original Articles.

FORCIBLE CORRECTION OF ANGULAR DEFORMITIES OF THE KNEE, WITH A REPORT OF CASES.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

In any inflammation about the knee-joint, in which there is muscular irritation, the leg flexes; and if this condition be kept up for any length of time, the head of the tibia is drawn backwards, so that the normal relations of the articular surfaces are lost. The knee is flexed and the tibia subluxated backwards.

The cause of this double deformity lies in the direct insertion of the posterior thigh muscles, and in the method of application of the power of the Quadriceps group.

At times rotation of the foot and leg outwards is seen in connection with these other deformities. This is probably due to the fact that the Biceps tendon is inserted far out upon the head of the fibula, and consequently has a longer lever upon which to act than the inner Ham-string group, which antagonizes the Biceps in rotating the leg.

The treatment of these deformities by means of force suddenly applied is not new; nevertheless, from a limited experience, I am confident that the method has received too little attention, and that patients are allowed to go without operation and to remain cripples, or else more serious operations are performed than is necessary. This lethargy undoubtedly is due partly to an incomplete understanding of the operation, but still more because of the faulty apparatus for such use which we have had at our command.

It is with the hope that by a free discussion here tonight we may arrive at a better understanding of the subject, that I present this paper, and offer the deductions which I have made.

Clinically, as these cases are seen, they group themselves pretty definitely into three classes:

(*a*) Those that are seen during the acute or subacute stages of the disease, in which the deformity is maintained entirely by muscular spasm.

(*b*) Those in which there is complete bony anchylosis, as the result of extensive osteo-arthritis.

(*c*) Those in which the malposition is maintained by adhesions in or about the joint, as the result of old arthritic or peri-arthritic disease.

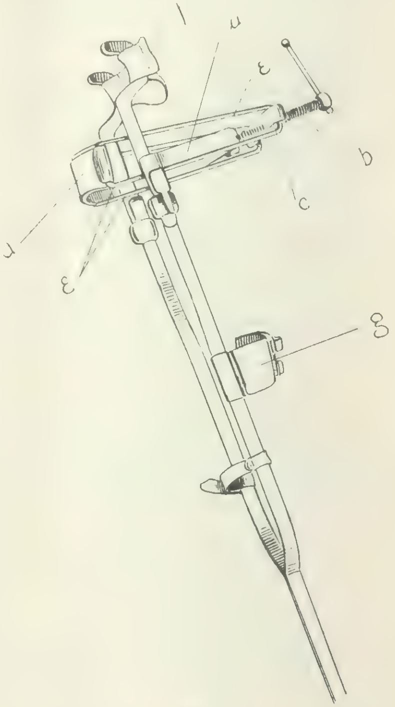

Fig. I.

The first two classes are dismissed entirely, as forcible straightening should not be considered in their treatment. In the first class simple continued extension, with complete immobilization of the joint, will be found to be all that is necessary; while, in the second class, some bone operation, such as excision or osteotomy, will be required. Forcible correction of the deformity in either of these groups would do harm. In the first, the acute trouble would be increased. while in the latter, fracture of the bones, with laceration of some of the soft structures would result.

The third class, which really represents the intermediate position between the other two, includes all of those cases in which the malposition is maintained by fibrous adhesions, without regard to the original disease, whether tubercular or otherwise. If the adhesions be slight, they can be broken up with the hands, and the deformity corrected; but if, as is usually the case, the adhesions be firm, the correction is a very different matter, and mechanical appliances become necessary.

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[1] Read before the Orthopædic Section of the New York Academy of Medicine in New York, May 19, 1893.

[7] Brief Expositions of Rational Medicine, by Jacob Bigelow, M.D., Boston, 1858, p. 27.

In a paper which was printed in the Boston *Medical and Surgical Journal* of December last, I described

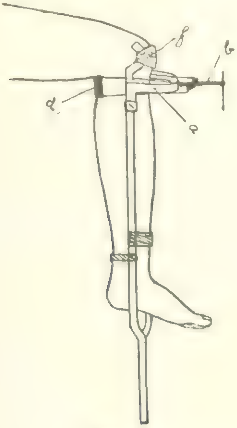

FIG. II.

an apparatus (Figs. I and II) for use in the correction of such deformities. It is a modification of an apparatus, devised several years before, by Dr. E. H. Bradford; the modifications being made to make the apparatus adjustable, to make the application of the power more easy and more under control, and to have the counter-pressure so directed that no damage could be done to the femur. Its mechanical principles are simple, and its adjustment and use is not difficult.

The operation, which is always performed with the patient anæsthetized, may be briefly described as follows: First, the adhesions are broken up as much as possible with the hands only (this in some cases means a good deal, and in others practically nothing); and after this the apparatus is applied, with the leg flexed. The posterior band, *d*, is then screwed forward; and after as much force has been applied as seems prudent, the leg is straightened as much as possible, by means of the long lever handle, the power being applied intermittently. The apparatus is then taken off and the leg again manipulated with the hands, to still farther break up the adhesions; after which, with the apparatus, the complete correction is attempted. In a mild case one application may be all that is required, while in others several applications (at one sitting) may be necessary before the position is entirely satisfactory.

At times, when the apparatus is finally removed, the head of the tibia drops back and cannot be held in place, even though the leg be straight, because of the firm contraction of the Ham-string tendons. This may be overcome by division of the tendons, or what was better in one of the cases, the leg was put up slightly flexed, enough to relax the contracted parts, and the dressings allowed to go undisturbed for one week. At the end of that time the tendons had relaxed so much that the leg could easily be straightened, and the correct apposition of the bones maintained. During the operation, the rotation of the leg, which is due to one condyle of the tibia slipping farther back than the other, can be corrected very easily, by simply rotating the apparatus so as to bring the greatest pressure upon the condyle that is posterior. If this last deformity be allowed to remain, it not only produces an awkward gait, from the turning out of the foot, but also, from the posterior position of the outer condyle of the tibia, a more or less marked knock-knee is produced.

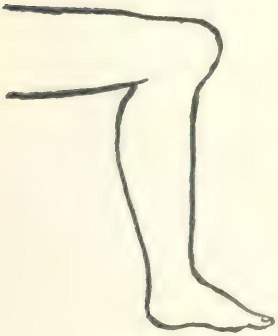

FIG. III.

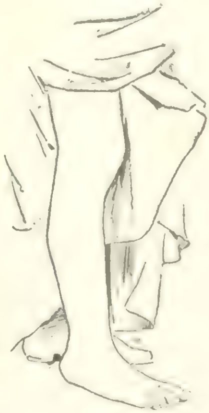

FIG. IV.

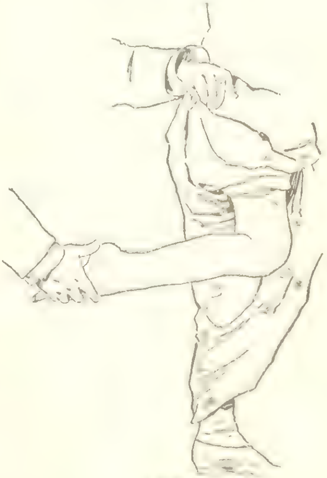

FIG. V.

At times, however, the knock-knee is due to an elongation of one condyle, as a result of the disease, and a Macewen osteotomy may be necessary; but it is best to wait a few weeks, at least, as in one of the cases in which this deformity was well marked, it entirely disappeared without operation, evidently being due to an old inflammatory deposit on the inner side, which was absorbed.

The after-treatment is simple. A plaster-of-Paris bandage is applied at the time of the operation, and is not disturbed for one or two weeks; after which the patient is allowed to go about upon crutches, the knee being fixed with the plaster bandage, or, what is better, with a Thomas knee-splint. In a few weeks the apparatus is omitted at night, thus favoring the establishment of motion in the joint; but while the patient is up and about, the splint or some protective appliance should be worn, for from six months to a year.

The pain, which is surprisingly slight, can usually be controlled by the salicylates. Morphia, of course, is to be used if necessary.

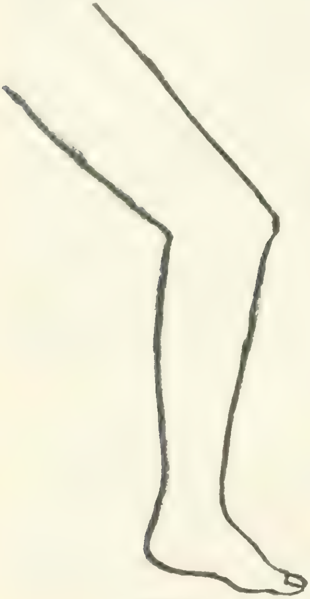

Fig. VI.

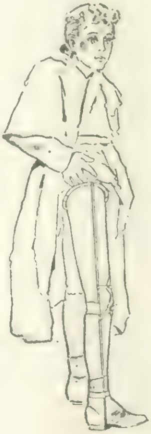

Fig. VII.

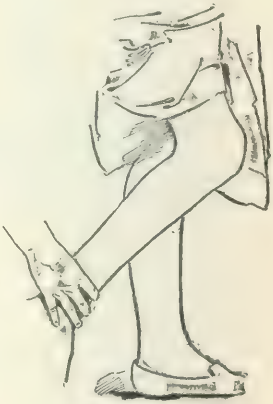

Fig. VIII.

The following four cases have been operated upon since the paper of last December was published; and in each case the apparatus, figured above, was used.

Case I. A young woman, sixteen years of age. When thirteen months old, the right leg "drew up," and it has remained in that position ever since.

Figure III represents the position of the leg at the time of entrance to the Massachusetts General Hospital, in December, 1892, flexed to a right angle, with marked subluxation of the tibia, and with only a few degrees of motion in the joint. There was considerable cicatricial tissue in the Popliteal space, but little or no bony thickening.

She was operated upon, and the position corrected without much difficulty. In ten days she was up in a wheel chair, and was about on crutches a week or two later wearing a caliper splint.

Her condition at the present time, six months later, is best understood from the accompanying cuts (Figs. IV and V), which represent the leg straight, and also flexed to show the amount of voluntary motion that it is possible; almost ninety degrees.

Case II. A boy eight years of age. Six weeks before being seen at the Boston City Hospital, in December last, the patient received a wound of the knee-joint, in which the patella tendon was divided. The wound had been neglected, and as a result of the suppuration which followed, the joint structures were badly disorganized. When first seen, the tibia had slipped back, as the result of the absence of the anterior ligaments and tendon, so far that there was scarcely any articulation between the two bones. There was about twenty degrees of flexion. After waiting some time for his general condition to improve, the operation was performed and the tibia drawn forward into place. The position was maintained by a plaster-of-Paris bandage.

The result in this case is a useful leg, but with a stiff knee-joint. This, of course, was expected from the nature of the injury and the subsequent suppuration.

Case III. A girl fourteen years of age. In January of this year the patient entered the Massachusetts General Hospital, with the leg flexed about forty-five degrees (Fig. VI); the deformity having existed for twelve years. There were several degrees of flexion possible, but extension was restricted, as is shown above, and this limitation of motion was evidently due largely to the position of the patella, which was firmly adherent to the femur.

With the correcting appliance the leg was straightened without difficulty; and as the force was applied, the adhesions between the patella and the femur gave way, allowing free motion between these bones.

The patient was up in a chair the second day after the operation, and a few days later was about on crutches.

At present, about six months later, the leg is straight, as is shown in Fig. VII, and voluntary motion is possible to the position shown in Fig. VIII.

Case IV. A woman twenty-one years of age. In December of last year the patient entered the Boston City Hospital, and gave the following history. Eleven years previous, she fell striking the right knee. This was followed by an abscess which opened just below the patella, and from which there has been a slight discharge ever since. At the time of the appearance of the abscess the leg "drew up," and has remained in that position until now. At the time of entrance to the hospital, it was flexed to about a right angle, and subluxated as is shown in Fig. IX. There were only a very few degrees of motion possible.

On December 21st, Dr. Bradford opened the sinus below the patella, and removed with a curette, a large amount of dead bone from the head of the tibia. The cavity remaining was about the size of a small lemon. At this time, the correcting apparatus was applied, and the leg partially straightened; but because of the danger of fracturing the tibia in its weakened condition, the correction was not completed.

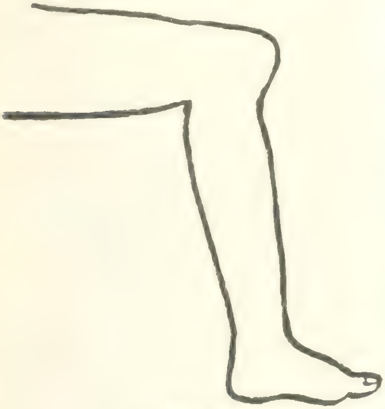

FIG. IX.

Two months later the cavity in the tibia having filled up, the apparatus was again applied and the leg fully straightened.

At the present time the patient is walking about, wearing a Thomas caliper-splint, with the leg straight, as is shown in Fig. X, and with several degrees of voluntary motion (Fig. XI). The pain which had been constant before the operation has entirely disappeared.

I am indebted to Dr. C. B. Porter for permission to see Cases I and III, to Dr. M. F. Gavin for Case II, and to Dr. E. H. Bradford for Case IV.

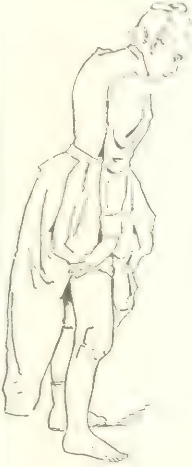

FIG. X.

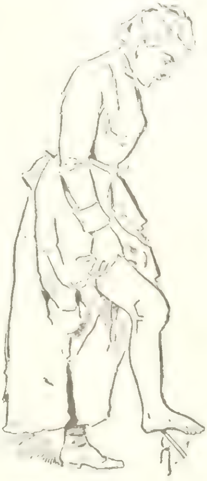

FIG. XI.

I wish, also, at this time, to give a later report of one of the cases of the December series. The patient was a girl sixteen years of age, in which the deformity had existed for eight years before the operation. It is now a year since the leg was straightened, and all apparatus has been omitted for about two months. She walks well, there being enough motion in the joint to prevent the marked limp common with a stiff knee, and there are no uncomfortable symptoms. Fig. XII shows her condition before operation, Fig. XIII, the leg straight, and Fig. XIV the amount of voluntary free motion.

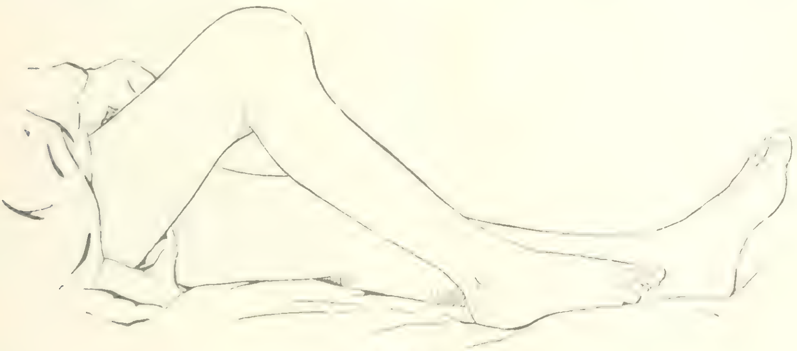

FIG. XII.

In considering these cases, Case I seems to be worthy of special attention, and is of interest as a physiological experiment as well as a surgical result. The fact that a joint can be put out of use for nearly fifteen years, and then restored to use with very nearly the normal amount of motion, is not only a matter of interest but of surprise. To be sure, the original disease had been largely in the tissues about the joint, judging from the position of the cicatrices; but even where there has been no joint injury or disease, as in fractures of the long bones — in which it is necessary to confine the adjacent joint for a long time — it has always been supposed (except for Dr. Phelps's experiments on dogs) that the functions of the joint would be seriously impaired, due to the formation of fibrous adhesions inside of the capsule. In this case, in one week from the time of the operation there was nearly normal voluntary motion without pain; at least strongly suggesting that no intra-articular changes had taken place.

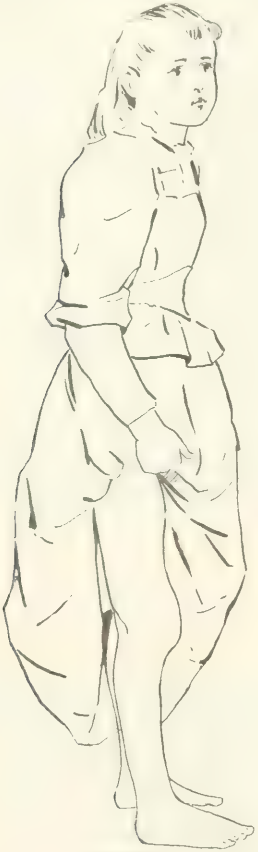

Fig. XIII.

The results in the other cases need no special comment; the illustrations represent their condition better than any verbal account.

In calling attention to this treatment it is to be understood that the original cause of the deformity is of little consequence, and that whether it be rheumatic, gonorrhœal, or tubercular; or whether the disease has been confined to the joint or to the structures about the joint, the deformity can be corrected as thoroughly and without much more danger, in one case as in the other. In the tubercular cases a considerable interval, at least two years, should be allowed after the disappearance of all of the acute symptoms, before the correction be attempted, because of the danger of starting up the tubercular process. In the gonorrhœal or rheumatic cases the apparatus can be applied at any time where it is reasonable to suppose, from the duration of the disease, that adhesions have formed. Usually in these cases the pain will cease with the restoration of motion.

The dangers attending the use of the apparatus are very slight, if its principles are understood and ordinary precautions are used.

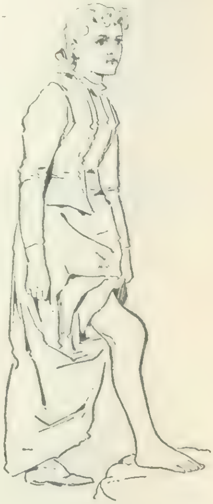

Fig. XIV.

In the acute cases, and in those in which there is bony anchylosis, its use is contra-indicated, for reasons stated above. The danger of lacerating the vessels and nerve in the Popliteal space, from the application of so much force, is very slight. As was shown in the paper before referred to, the head of the fibula, and the inner condyle of the tibia act as buttresses; and upon these points the pressure is applied, while the vessels lie deep in the muscles entirely protected, as is shown in Fig. XV. In cases of extensive peri-articular disease behind the joint, it would be better to straighten the leg gradually, gaining a little with each operation, rather than to correct it at one sitting; in which case the vessels might be lacerated, from being involved in the old cicatrix. This precaution should

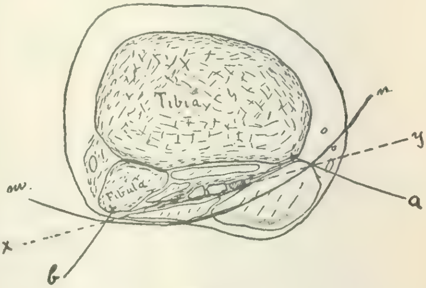

Fig. XV.

also be taken in elderly persons in which atheromatous changes in the vessels are to be considered.

CONCLUSIONS.

A special apparatus is presented for the correction of the angular deformities of the knee in which there is fibrous anchylosis. Five cases are reported in all, of which the ultimate results, as to usefulness of the leg, are very good. One case, in which the deformity had existed almost fifteen years, has nearly normal motion in the joint. One case is reported in which all apparatus has been omitted one year after operation. In none of the cases has any acute trouble resulted. The operation and the use of the apparatus is not difficult, and the dangers attending its use are comparatively slight.

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SUBPHRENIC ABSCESS, WITH SPECIAL REFERENCE TO THOSE CASES WHICH SIMULATE PYO-PNEUMOTHORAX.[1]

BY A. LAWRENCE MASON, M.D.,
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(Concluded from No. 9, page [illegible].)

THIS is by no means an exhaustive review of the subject, but there are few individual records of more than one or two cases, and I will refer to some of the more interesting ones as briefly as possible. Bristowe[53] reported two cases in an article on "Abscesses in the Upper Part of the Abdomen"; and more recently Dickinson and Ewart,[54] of St. George's Hospital, have recorded "two cases of perforating ulcer of the stomach with misleading physical signs," one of which, entitled "Perforation, with Supposed Pneumothorax," is similar to others which have been quoted. But the second, "Perforation, with Supposed Pericarditis," deserves attention.

Case. — A chlorotic girl, aged twenty-four years, was admitted with symptoms which were considered those of perforating gastric ulcer. There was pleural friction in the left axilla, and over the præcordia were tenderness and friction sounds which had all the characteristics of those heard in pericarditis. Syncopal attacks. These signs appeared to indicate that in addition to peritonitis and pleurisy there was also pericarditis.

Autopsy: Perforation of the posterior wall of the stomach, with peritonitis, which was almost restricted to the left half of the diaphragm and the upper surface of the left lobe of the liver. The abscess pushed up the left side of the diaphragm, which showed pleurisy on its upper surface. Soft lymph coated the lower parts of the left pleural membrane. *No pericarditis.* The roughened pleural surfaces, diaphragmatic, costal, and pulmonary, had given rise to a friction rub synchronous with the heart's action.

This pleuro-pericardial rub was noted in the original case of Wilks and Barlow, and the mode of causation was then also observed. It also occurs in pneumonia, with pleurisy of the left side, and Flint states that in character this sound cannot be distinguished from the true pericardial friction. But the graver symptoms of pericarditis are casually wanting.

Case. — An interesting case is that of Schenck.[55] A woman was operated on for subphrenic abscess by resection of the eighth rib. Pneumothorax was caused thereby, and the upper surface of the diaphragm was united to the parietes before incision of the abscess to keep the pus out of the pleural cavity. The patient died, however, of sepsis, and at the autopsy transposition of the viscera was found.

Flint, in his *Practice of Medicine*, refers to the observations of Leyden and gives his conclusions, but does not mention having met with similar cases in his own experience.

Gee[56] says: "An abscess below the diaphragm may become partly filled with air and may so raise the diaphragm as to give a tympanitic percussion note over the lower part of the chest, but not the amphoric signs of pneumothorax."

This is evidently an error, which was pointed out by Coupland in the *British Medical Journal*, March 23, 1889, where he reports a case of subphrenic abscess of the right side, with signs of pneumothorax, probably caused by perforation of the vermiform appendix and cured by operation.

As the editor of the posthumous work of the late Dr. Wilson Fox,[57] on *Diseases of the Lungs and Pleura*, Coupland has appended a concise description of the condition now under consideration, reproducing Leyden's plate.

Strümpell[58] had repeatedly seen perforation into the left pleural cavity from gastric ulcer, with septic pleurisy and sometimes pulmonary gangrene. Therefore, he says: "Whenever we meet a case of apparently spontaneous, left-sided empyema, we should at any rate always think of the possibility of gastric ulcer."

In Pepper's *System of Medicine*,[59] in the article by Welch, on "Simple Ulcer of the Stomach," attention is called very clearly to the etiology of the class of cases under discussion, and the conclusions of Barlow and Leyden are quoted. The author also mentions Pfuhl's experiment with the manometer in Leyden's clinic, which goes to show that the pressure in the abscess cavity rises during inspiration and falls during expiration, the reverse being true in the pleural sac. But it is stated that Schreiber[60] has shown that this point does not hold good when the diaphragm moves little, as is often the case in this affection.

Osler[61] says: "The condition of pyo-pneumothorax subphrenicus may simulate closely true pneumothorax."

Vierordt,[62] in speaking of "Subphrenic peritonitis," says: "We understand by this an ichoro-purulent, sacculated peritonitis below the diaphragm. From paralysis, partly also from irritation, the diaphragm is pushed very high into the thorax, causing a marked retraction or compression of the lung of that side. That half of the thorax is broadened, and by the presence of pus and gas in the cavity, one is apt to mistake the condition for pyo-pneumothorax. Peritonitis of this character usually begins at the stomach, as an ulcer, or at the intestine, especially at the vermiform appendix or cæcum. In making a differential diagnosis, we observe whether, in the *status præsens* or in the previous development, there were indications of disease of the lungs, or, on the other hand, of the abdomen; and also whether the lung of the diseased side still performs the motions of respiration."

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[1] [illegible]

[53] [illegible]

[54] [illegible]

[55] [illegible]

[56] Auscultation and Percussion.

[57] A Treatise on Diseases of the Lungs and Pleura. By Wilson Fox, M.D.

[58] American edition, 1887, p. 361.

[59] [illegible]

[60] [illegible]

[61] Practice of Medicine.

[62] Medical Diagnosis, 2d edit., 1892, Stewart's translation.

DIAGNOSIS.

The diagnostic points in these varied conditions have, perhaps, been sufficiently indicated by the foregoing citations and cases, but it seems to me that enough stress has not been laid upon the incompleteness and inconstancy of the signs in "false pneumothorax" as compared with the true, or upon their peculiar localization both above and below the usual position of the diaphragm. The metallic sounds may be loudest at the epigastrium. The adhesion of the lung to the diaphragm and parietes is an important indication of the inflammation below, as is the dry pleurisy which precedes this adhesion. A serous or purulent effusion in the back is misleading, but the patients always appear to be in much worse condition than a simple pleurisy would cause. Diaphragmatic hernia may present similar physical signs, but the history, usually of traumatism, is different.

PROGNOSIS AND TREATMENT.

The prognosis depends almost entirely upon the efficacy of surgical treatment by free incision and drainage, although cases of spontaneous evacuation and cure are not unknown. Tillmanns,[63] of Leipzig, in his article relating to the operative treatment of abscesses resulting from communication between the gastro-enteric tract and the thorax, reports a successful case of thoracotomy in a boy, fifteen years old, in whom a supposed intestinal perforation had caused an abscess which found its way through the diaphragm. Feculent-smelling fluid, which contained food, was evacuated from the right pleural cavity and recovery ensued. Tillmanns, after an elaborate discussion of twenty-two cases, expresses the opinion that the cure of subphrenic abscess may be effected by antiseptic drainage when the suppuration is not too extensive, if it remains shut off from the peritoneal cavity, and if the intestinal or stomach perforation heals spontaneously.

That the gastric ulcer may heal spontaneously without external drainage of the abscess is shown by the fact that cicatrization was observed in Leyden's case mentioned above, and in the following, in which the pus escaped through the bronchi or into the pleural cavity.

Case. — Southey[64] reports a case of prolonged pain and vomiting, with tender tumor at epigastrium. Hæmatemesis and melæna. Later, cough and fetid expectoration. Cancer was suspected. Autopsy showed a large abscess between the diaphragm and the left side of the liver, the stomach, and the spleen. Perforation of diaphragm into lung and pleura. A sinus from the abscess led directly to the cicatrix of a round ulcer in the posterior wall of the stomach. No perforation of stomach remained.

Case. (Rigal.)[65].— Man, fifty years old. Sudden attack of epigastric pain, with swelling. Later, signs of pneumothorax. At autopsy, a large abscess between liver, stomach and diaphragm, and on posterior wall of stomach, 4 cm. from pylorus, two recently cicatrized ulcers.

Other similar cases might be cited. Fenwick mentions five, in which, after death, the perforation was found to have healed. In my case, No. II, the same result appeared to have followed the drainage of the cavity, as the offensive vomiting ceased and great general improvement ensued, but the abscess reappeared on the other side, and the patient died. At the autopsy, the ulcer was found closed.

Perhaps, as has been suggested, distention of the stomach ceases after perforation, and this may promote cicatrization. In any event, such a possibility enables us to form a more favorable prognosis in those cases in which posterior intercostal drainage of the abscess is resorted to, or when laparotomy may be undertaken with a view to sewing up the perforation, but when the ulcer proves to be inaccessible. This, I think, from the evidence of the autopsies I have seen, would usually be the case, the adhesions are so extensive and so dense; and in all operations the danger of involving the general peritoneal cavity must be considered.

In many of the later reports subphrenic abscesses have been diagnosticated promptly, and the necessary surgical procedures have been resorted to. The record of 100 cases, of which 20 were from American sources, shows 20 recoveries. The first cure in Leyden's clinic was in 1882, and most of the successful cases are those in which the operation was for abscesses in the right side associated with the liver or vermiform appendix. As before stated, I find no case of subphrenic abscess caused by perforating ulcer of the duodenum, in which cure has resulted, or in which the perforation has been found cicatrized after death. In but seven cases, when the abscess was under the left ala of the diaphragm and caused by gastric ulcer, has recovery taken place so far as I am aware. One was reported by Barton,[66] in which the abscess opened into the bowel with a discharge of foul pus, and two other cases of spontaneous recovery are mentioned by Leyden.

Case. — Debove and Rémond,[67] at the Hôpital Andral, report the following: A female, aged thirty-three, had had for three years intense gastralgia, hæmatemesis, and epigastric tympany, which extended over the left lobe of the liver. Tapping evacuated foul pus and air, and laparotomy revealed a large abscess behind the liver, with prolongation toward the spleen. Cure in two months.

The author stated that this was the first recorded cure of this condition. But Von Hösslin,[68] from Ziemssen's clinic, has reported a case in which, from the symptoms and the character of the pus, perforation of the stomach was thought to have existed:

Case. — Female, aged thirty years; cyanotic. Respiration, 60; pulse, 120. Left lower ribs motionless. Heart displaced to right. Resection of seventh rib, anterior axillary line, opened a subphrenic abscess communicating with the pleura through an aperture in the diaphragm. During the next day the patient was livid and collapsed, and seemed at the point of death. But she rallied and recovered in seven weeks. A drainage-tube was pushed up through the aperture in the diaphragm and thus the pleural cavity was irrigated.

Scheurlen's case of recovery after resection of a rib is mentioned above, also Renvers's by puncture-drainage, but those are the only other ones which I have found.

Evidently the chance of life is a poor one under any circumstances when perforating ulcer of the stomach or duodenum is at the bottom of the trouble: but when the abscesses are connected with the liver, the kidney, or the vermiform appendix, the outlook is more favorable. These are mostly on the right side, between the liver and the diaphragm, and of such cases recovery took place in thirteen instances, twice by spontaneous evacuation through the bronchi after appendicitis. Resection of a rib was resorted to in a few of these cases only. In the others a simple incision was made. As was stated above, liver abscess is sometimes cured in this manner and should hardly be included in the present subject.

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[63] Ueber die Communicationen des Magen-Darmcanales mit der Brusthöhle und über subphrenische Kothabscesse. Archiv. klin. Chirurgie, 1881, s. [illegible].

[64] Medical Press and Circular, November 5, 1879.

[65] Bulletin de la Société Méd. des Hôpitaux, 1874.

[66] Medical Press and Circular, 1890, p. 453.

[67] Des Abcès gazeux sous-diaphragmatiques par perforation des Ulcères de l'Estomac. Gazette des Hôpitaux, 1890, p. 1150.

[68] Munchner med. Wochenschrift, January 18, 1887.

Usually pleural adhesions prevent the opening of the pleural cavity by the knife, but in some cases the diaphragm has been incised through the pleura with a resulting pyo-pneumothorax. In one such instance an epigastric incision was followed by two posterior openings for better drainage. Clear serum flowed, followed by pus. Pyo-pneumothorax ensued, pyæmic abscesses formed in the brain, and death resulted.

This shows the importance of a low incision. The place should be determined by previous careful explorations at more than one level. In those cases in which there is epigastric tumor, laparotomy and search for the ulcer should be resorted to, but posterior drainage, also, will usually be necessary. I can find no record of a successful procedure of this nature. Fitz[69] relates the case of a woman, aged forty-one years, who came to the Massachusetts General Hospital with severe epigastric pain and a history which pointed to a perforating gastric ulcer. He advised laparotomy, but it was persistently refused by the patient, who died. Autopsy showed an abscess below the diaphragm, shut off by adhesions and containing air. The stomach was adherent to the adjacent organs, and had a perforating ulcer on the anterior wall.

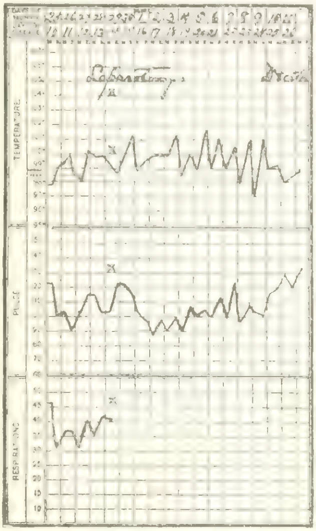
The question of "Laparotomy for Perforating Ulcer of the Stomach" is discussed by Weir,[70] who calls attention to the frequency with which this cause of fatal peritonitis is overlooked. In one case he operated, emptied a subphrenic abscess, and sewed up a round perforation half an inch in diameter in the middle of the anterior surface of the stomach near the lesser curvature. The patient died from collapse, having suffered from peritonitis for four days before she entered the hospital.

Most of the ulcers, however, are on the posterior wall and very inaccessible on account of the adhesions. Under these circumstances, Weir recommends making a good-sized hole in the gastro-colic omentum and trying to examine the posterior wall in this way, or making a direct cut of large size into the stomach itself.

This procedure has once come under my observation in the case of a young woman who for three years had presented the symptoms of gastric ulcer. The pain was so great that she insisted on laparotomy, which had been suggested to her. Dr. Bradford incised the stomach and with the electric light examined the interior, but no ulcer could be found. If it had existed, it had healed. But the operation was entirely curative of all the symptoms.

Thus far the results of laparotomy for gastric hæmorrhage have not been very encouraging, and it is improbable that those for perforating ulcer will be more so. But the chance should be taken.[71] In many instances the patients are so exhausted that a prolonged operation cannot be completed. Weir relates such a case, and one came under my observation this year at the City Hospital, in which laparotomy was performed by Dr. Cheever.

Case VII (Mason). *Perigastric abscess; laparotomy.* A Russian, aged twenty-two years, entered my service at the hospital with severe epigastric pain. In a few days there was a bulging, flat on percussion, at the epigastrium. The heart was displaced to the left. Subnormal temperature. No vomiting. The aspirating needle withdrew, first a clear fluid of strawberry-juice color from the epigastric area, and then several ounces of offensive pus from a deeper level. Dr. D. W. Cheever performed laparotomy. The exploring finger discovered a large cavity, with trabeculæ, adjacent to the stomach, but the condition of the patient was such that further examination was not practicable. He rallied, however, and the abscess cavity was irrigated daily. A discharge of sloughy, purulent material continued, pain did not diminish, and he died from exhaustion in two weeks. There was no autopsy, and the cause of the abscess was undetermined.



Case VII.

CONCLUSIONS.

(1) Subphrenic abscess, so-called, is usually due to a circumscribed peritonitis, but may be retro-peritoneal.

(2) The causes are: Perforating ulcer of the stomach, duodenum, or vermiform appendix, rarely of some other part of the intestinal tract; hepatic, peri-hepatic, peri-splenic, and peri-nephritic inflammation; occasionally, gall-stones, cancer, or echinococcus cyst. Sometimes the cause cannot be determined.

(3) Air-containing abscess below the diaphragm, through communication with the gastro-enteric tract, may give rise to signs resembling those of pyo-pneumothorax.

(4) Subphrenic abscess, when dependent upon perforation of the gastro-enteric tract, usually results fa-

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[69] Boston Medical and Surgical Journal, [illegible]

[70] [illegible]

[71] [illegible]

tally. But the prognosis is more favorable in those cases which follow perforative appendicitis than in those which result from gastric or duodenal perforation.

(5) The perforating gastric ulcer, which is the cause of the subphrenic abscess, may heal spontaneously after the evacuation of the abscess, and early diagnosis would greatly reduce the hitherto reported large mortality.

(6) Hepatic, peri-hepatic, or peri-nephritic abscess, which presents itself under the arch of the diaphragm, may often be successfully treated by intercostal incision and drainage.

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IXODES OR TICK.

BY HAROLD WILLIAMS, M.D., BOSTON.

ALLUSION is sometimes made in medical literature to the ixodes or tick. As they are not often met with in our city clinics, I have ventured to give the following description:

Duhring, in his "Diseases of the Skin," says of them: "There are several species of tick which are met with in our woods and which are liable to attach themselves to the human skin. They insert their proboscis and head deeply into the tissues and suck blood until they not infrequently swell up to many times their natural size. They should never be extracted with violence, but should be induced to relinquish their firm hold upon the skin by dropping upon them some oily substance, as olive oil or one of the essential oils."

Ticks are extremely numerous in Nantucket. I have removed as many as forty from my horses' legs after a single drive. They crawl up the legs of the horses and if left to pursue their course unimpeded, will bury their heads in the thin skin in the neighborhood of the tail or in the interior of the ears. In dogs they usually penetrate the auditory canal, though they sometimes attach themselves in other places. In human beings they almost invariably crawl into the hair at the back of the head or neck, but they sometimes penetrate the ear, where they cause excruciating pain with their hooked feet. They attach themselves to the skin by their jaws and burrow beneath its surface. As they then anchor themselves by their many-barbed tongue they are extremely difficult to remove and upon the employment of traction the body becomes detached leaving the head in the skin to be cast off by suppurative process.

No. I.

No. II.

No. III.

No. IV.

The accompanying illustrations, which are according to exact measurements, were made from a tick which had attached itself to a dog belonging to Alexander Pope, Esq., and were drawn by that artist himself. No. I is a tick as usually seen. No. II is the same tick after five days' feasting upon the thin skin near the ear of Mr. Pope's spaniel. Nos. III and IV are ventral and lateral views of the same engorged tick.

When a tick has penetrated the ear it can be readily and painlessly removed by the use of a ten-per-cent. solution of hydrochlorate of cocaine, olive oil and forceps, in the order mentioned.

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Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

(Concluded from No. 9, page 222.)

CROUPOUS PNEUMONIA COMPLICATED BY PURPURA HÆMORRHAGICA.[7]

JAWORSKI has reported the case of a man, twenty-seven years old, who while engaged in making an excavation was seized by a severe chill soon followed by profuse bleeding from the nose and mouth, and loss of consciousness. On the following day the hæmorrhage was repeated several times and in addition pain in the right side of the chest and general weakness and depression manifested themselves. On examination the evidences of croupous inflammation of the middle lobe of the right lung were detected. The skin was rather pale and somewhat moist. Upon the lower part of the body from the umbilicus downward were numerous subcutaneous hæmorrhages varying in size from a pin-head to a lentil. There were also hæmorrhages beneath the conjunctiva into the sclera, and beneath the mucous membrane of the inferior surface of the tongue and lower lip. Neither the gums, palate nor larynx presented any changes or lesions. The tongue was dry and covered with a coating with which coagulated blood was mixed, blood constantly trickled from the nose and there was considerable frothy blood-stained expectoration. The temperature was elevated;

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[7] Wien. Med. Presse, xxiv, 3, p. 84; American Journal Medical Sciences, April, 1893.

the pulse full, tense, regular, quickened, the respiration accelerated. The urine was blood-stained and contained red corpuscles. The patient grew rapidly worse and died at the end of five days with signs of exhaustion. The history and the symptoms excluded phosphorous poisoning, arsenical poisoning, scorbutus and typhus fever. No bacteriological investigations were made. The post-mortem examination confirmed the diagnosis of croupous pneumonia complicated by purpura hæmorrhagica.

CREASOTE IN PHTHISIS.[8]

Albu says that we have only one criterion by which we can judge clinically of the effect of a drug upon the progress of phthisis and that is the fever, upon which creasote has no effect; nor among the large number of cases upon which he tried the drug were there any in which the tubercle bacilli permanently and appreciably diminished, while a diminution in their virulence could not be proved by laboratory experiments. He has seen "Phthisis treated with large doses of creasote pursue its course with all the protean changes with which he is familiar; at one time astonishing improvement with permanent subjective sense of well-being; at others, even in the beginning of the disease, a rapid downward course; he has watched the formation of cavities and the progress of amyloid degeneration, the onset of pneumothorax and even death in various stages of the disease"; in other words, he could not see that the course of the disease was appreciably modified, nor was any influence exerted upon the tuberculous process in the lungs. Nevertheless, it is a very useful drug for its symptomatic treatment, as for most patients it appears to be a good expectorant, for others a good stomachic, and it often seems to exert a tonic influence; cure, however, is not obtained by its use.

THE PROGNOSTIC SIGNIFICANCE OF FEVER IN PHTHISIS.

Strümpell[9] considers the prognosis of phthisis in its special relation to fever, which, as a symptom, has the greatest prognostic significance, though other points must be considered, such as the environment of the patient, his heredity, his general make-up, the presence of anæmia or a history of alcoholism. Age is an important factor, as between twenty and thirty the course is apt to be much more rapid than in later life. The previous progress of the case must also be taken into consideration. Encapsulated tuberculous processes occasion no rise of temperature. Although tuberculosis can of itself produce fever, great importance must be attached to secondary infections and diseases, as apart from the symptoms produced by them they render efficient aid to the further extension of the tuberculous process. With fever such secondary processes are almost always present, and thus lead to the spread of the disease.

The author classifies the temperature thus: (1) Subfebrile, with slight evening rise. This form is comparatively benign. (2) Intermittent. Here the disease is progressive, in proportion to the rise in the evening temperature. (3) Remittent, a not very infrequent form in florid phthisis. (4) Continued, seen in the beginning of sudden and acute forms with hardly any abnormal physical signs. After two or three weeks it becomes remittent or intermittent. Such cases usually run a rapid downward course. (5) Irregular. This is generally seen in the third stage, and the cases are mostly unfavorable, especially if high evening temperature and periods of continued fever appear. For months, perhaps, the fever has been hectic, and then it becomes much more irregular. There is then often an increase in the local manifestations of the disease, and in a few weeks death supervenes. Collapse temperatures are also very unfavorable, but there are, of course, exceptions to all these rules.

In speaking of the therapeutics of consumption, he says that the value of remedies can only be tested by their effect on the temperature. He was unable to prove that tuberculin ever caused the fever to disappear, and he had never seen any specific effect from creasote. In all such therapeutic questions the greatest experimental pathologist needs the co-operation of the practical clinician.

A CASE OF PLEURAL EFFUSION AT THE RATE OF THREE AND A HALF FLUID OUNCES AN HOUR.[10]

The following case, reported by Hale White, is remarkable for the great rapidity with which the fluid reaccumulated. The patient had ordinary tubal nephritis, together with mitral constriction and regurgitation, and, as is usually the case, there was some fluid in each pleural cavity which had required tapping. Thirty hours after the first aspiration of the right chest, 106 ounces of serum were withdrawn, which must have accumulated within that time as special pains had been taken to remove all the fluid at the first operation. Seventy-eight hours later 120 ounces more were withdrawn and on this occasion there was extreme pain and dyspnœa and great œdema of the neck, which disappeared after the evacuation of the fluid. Thirty hours after this the chest was again tapped and forty ounces withdrawn. White can only account for this rapid accumulation by supposing that the patient had thrombosis of the large azygos vein before it is joined by that from the left side. He does not consider it conclusively against this supposition that no evidence of thrombosis was found post-mortem, for the patient did not die till eight weeks afterwards, when all signs of thrombosis might have disappeared. Supposing the fluid collected at a uniform rate, after the first tapping of the chest, that rate was three ounces and a half an hour, after the second, one ounce and a half, and after the third about the same. It is also quite exceptional for the distension of the chest with fluid to be so rapid as to cause acute pain, which is no doubt comparable to that felt in the calf in acute femoral thrombosis, and due to rapid stretching of the parts by fluid; also it must be very rare for the pressure of the fluid on the superior vena cava to cause œdema of the neck.

A FOREIGN BODY IN THE EAR FOR THIRTY-NINE YEARS. — A correspondent of the *Medical News* reports the case of a patient who complained of occasional pain in the left ear since childhood. Hearing was almost lost and the canal was filled with a hard substance. With some difficulty a large white bean was removed, with the immediate return of hearing. On questioning the patient it appeared probable that the bean had been in the ear for thirty-nine years.

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[8] Berl. Klin. Wochen., [illegible], p. 186.

[9] München. med. Woch., 1892, Nos. 50 and 51; British Medical Journal, February 18, 1893.

[10] Lancet, March 25, 1893.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

EIGHTH ANNUAL MEETING, AT WASHINGTON, D. C., MAY 30, 31 AND JUNE 1, 1893.

(Concluded from No. 9, p. 224.)

SPORADIC CRETINISM IN THE UNITED STATES,

by WILLIAM OSLER, of Baltimore.

DR. H. C. WOOD thought, that, although cretinism was a rare disease, yet it was more common than appeared from Dr. Osler's paper, because persons have not reported the cases which have occurred to them. He recalled two very positive cases which he had seen in his own experience, entirely outside of any institution.

DR. J. P. C. GRIFFITH thought that what Dr. Woods had said was probably the case. He had seen a case the past winter which had been brought to the Children's Clinic of the University of Pennsylvania. He asked how old the "baby" was, and was told five years. The parents lived at Lancaster, Pa., which is not a mountainous region. There was no nervous disease in the family, and there seemed to be no way of accounting for the child's condition.

SOME PROBLEMS IN THE ETIOLOGY AND THE PATHOLOGY OF TEXAS CATTLE FEVER AND THEIR BEARING ON THE COMPARATIVE STUDY OF PROTOZOAN DISEASES,

by THEOBALD SMITH, of Washington.

The course of Texas fever may be divided into a first stage (acute), and a second stage (mild or relapse) which may follow the first after an interval of two or more weeks. The first is characterized by a high fever and a rapid destruction of red blood corpuscles, amounting to half a million or more per cmm. in twenty-four hours. The second stage, or relapse, differs from the acute fever in its mild, non-fatal course, its fluctuating temperature and a much slower destruction of red corpuscles.

In the acute fever, the number of infected corpuscles which circulate in the blood is small, and rarely exceeds two per cent. The micro-parasite contained in them is fully developed. In the mild fever, or relapse, the number of infected circulating corpuscles is, as a rule, much greater and it may reach fifty per cent. The micro-parasite, in the mild fever, is always in a very young stage in the corpuscle. The probable explanation of this curious phenomenon is a partial immunity of the affected animal acquired in the acute attack, in virtue of which a retardation in the development of the intraglobular parasite is brought about.

The reaction of the organism of the host in the presence of the invasion seems to proceed along lines different from those which are followed during the course of bacterial diseases. While there is a profound disturbance of the system, this seems to be due mainly to the large amount of débris in the blood, which cannot properly be disposed of by the excretory organs. Inflammatory or chemotactic processes are absent and the degenerative changes may be accounted for without assuming the presence of alkaloidal or proteid poisons originating in the micro-parasite.

An important fact which hitherto has not been brought out in the study of infectious diseases is the indefinite persistence of the micro-parasite, in very small numbers, in the blood of insusceptible cattle from the enzootic territory. Such blood is capable of producing the acute disease in susceptible animals. In other words, a complete symbiosis between an otherwise fatal parasite and the host seems to be compatible with and perhaps necessary to immunity.

This disease is probably transmitted exclusively in nature by an ecto-parasite — the cattle tick (*boöphilus bovis*). This important fact opens an interesting and only partly explored field of inquiry in the transmission of human malarial affections.

DR. WM. H. WELCH was quite familiar with the development of Dr. Smith's work, and was extremely interested in the results. The etiology of Texas cattle-fever has become, through Dr. Smith's researches, probably clearer than that of any other protozoan disease. We now know, not only the character of the micro-organism inside the body of the animal, but also the media of development outside of the body, in the cattle tick. Dr. Smith's paper is an important contribution to science, and is an illustration of the value of governmental aid in solving a problem of both scientific and economic importance.

THIRD DAY. — MORNING SESSION.

THE BACILLUS PYOCYANEUS PERICARDITIDIS,

by HAROLD C. ERNST, Boston.

The material from which the bacillus was isolated was fluid drawn from a case of pericarditis. The fluid contained plenty of tubercle bacilli and this new bacillus. With this new bacillus a long series of tests were made upon a large number of different media and under differing conditions of temperature. The only two organisms with which it is likely to be confounded are the bacillus pyocyaneus of P. Ernst and the bacillus pyocyaneus of Gassard. Every step in the investigation of this bacillus was checked by and compared with cultures of the bacillus pyocyaneus derived from four different sources. Dr. Ernst gave in detail the essential differences, both macroscopic and microscopic, between this bacillus and those with which it has been possible to compare it. As the result of these tests, it appears justifiable to conclude that the bacillus is a distinct variety of organism, resembling in many respects the bacillus pyocyaneus but perfectly distinct from it.

DR. A. C. ABBOTT, of Philadelphia, thought that in the bacillus described by Dr. Ernst, we have another addition to make to the group of green-producing micro-organisms. Some of its characteristics are very different from those common to the ordinary green-pus organism: the essential difference between the organism described by Dr. Ernst and the ordinary *bacillus fluorescens liquefaciens*, being the production of the blue-green color upon which Dr. Ernst lays stress.

DR. SMITH had seen all variations in the color-producing power of the saprophyte, and in some cases the color was a very dark green.

GONORRHŒAL MYOCARDITIS.

by W. T. COUNCILMAN, Boston.

There have always been two opinions held about the secondary infections following gonorrhœa; one that they are due to the accidental infection with other organisms which enter through the lesions in the urethra, produced by the disease. Gonococci have been found by various observers in these secondary lesions. Other observers have failed to find them. The most prominent secondary lesions consist of the various joint affections, of peri- and endo-carditis, and of inflammation of the neighboring lymph glands giving rise to the bubo. Chronic inflammation of the Fallopian tubes in the female is now very generally regarded as due to a previous infection with gonorrhœa. In a case recently seen at the City Hospital there was an acute urethritis, acute inflammation of the joints and an extensive peri- and myo-carditis. Gonococci were found in all of these places. The lesions in the urethra closely similate those described by Bumm in his experimental work on the disease. The gonococci were found only in the superficial layers of the epithelium. In the sub-epithelial tissue there was marked round-cell infiltration. It appears probable from a general consideration of the secondary infections that they are true infections resulting from the presence of the gonococci. In the cases in which organisms have not been found it is very possible that they were so few that the ordinary microscopic investigation would not reveal their presence. That the affection is not due to the presence of pus organisms is shown from the fact that cultures made from these secondary lesions are so generally sterile.

Dr. Reginald H. Fitz had no recollection of ever seeing a case like the one described by Dr. Councilman. Cases of infection through embolism from urethral disease, especially in consequence of surgical operations are not so very uncommon.

Dr. Alfred L. Loomis reported a case which had been very misleading, due to a mixed infection. The patient had gonorrhœa for four or five weeks and then suddenly developed in endocarditis. Within twenty-four hours he had pains in his joints that had not existed before. A relative in the same house at the same time, came down with diphtheria; and in two or three days after the endocarditis, the man had a diphtheritic spot. Had it not been for the occurrence of diphtheria, the endocarditis would doubtless have been ascribed to gonorrhœal origin.

DISCUSSION ON TUBERCULOSIS.

Dr. Wm. H. Welch reported the results obtained in the experimental rabbits given to him by Dr. Trudeau a year ago. There were three rabbits, each inoculated in the same way with a pure culture of the tubercle bacilli, both in the eye and in the pleural cavity. One was a control animal; another was treated with bacterio-proteid; and the third by the filtrate from liquid cultures of the tubercle bacilli. The control rabbit developed a caseous inflammation of the inoculated eye. It went through the typical changes and developed caseous panophthalmitis; all the media became obscure, the cornea became vascularized, and subsequently there was atrophy of the bulb. The animal treated with bacterio-proteid became very emaciated, developed abscesses and ulcerations of the skin in different parts, and finally died without anything to show for the immediate cause of death except the extreme emaciation. There was extensive caseous disease of the eye, but not quite so extensive as in the control animal. The animal treated by the filtrate was of most interest, because the filtrate is said to possess distinct curative or preventive properties. This case turned out just as Dr. Trudeau might have wished. There was no extension of the tuberculous process. There developed a small, grayish-white, slightly opaque nodule at the upper quadrant of the eye in the anterior chamber, which became adherent to the iris, then grew smaller, and finally just a scar was left, without any caseation and without any secondary tuberculosis in the eye which could be determined during the life or after the death of the animal.

Dr. Whittaker said that from some reports made to a previous session of the Society the impression seems to have gone out that tuberculin was not only useless but for the most part actually injurious. Since that time new light has been shed on the nature of the tuberculous process which shows how laboratory tuberculosis differs from human tuberculosis. Dr. Whittaker has administered tuberculin daily since it was first sent out, both in private and hospital practice, and has never seen any reason for a modification of Koch's first opinion as he expressed it in regard to cases of pure tuberculosis. He has observed that under this treatment there has been a singular and early relief from the depressing action of the disease, first of all, and more so than from any other method of treatment. Although a minority of the cases show an exaltation, a *spes phthisica*, yet in most cases there is a marked tendency to melancholy. After five or six injections of tuberculin, patients experience relief from this condition, and they continue to show this relief until some complication occurs. Patients who only have tuberculosis in its inception, having perhaps a light bronchial catarrh at the apices, or are still in the prephysical state of tuberculosis, where we only make the diagnosis by the discovery of the bacillus, when treated with tuberculin are completely rescued in the majority of cases. It does not take so long a time to effect a cure as is commonly asserted. Most of these cases are rescued in two or three months under careful use of the remedy, and these cases do not fall back into the condition of patients who return home from Colorado improved, who fall victims anew to the disease. Tuberculin is the only specific remedy for tuberculosis. All other remedies act only through the avenues of nutrition and resistance to invasion. Where we have mixed infections, as is the case in the later stages of phthisis, tuberculin does little or no good and for the most part harm. It is the reckless administration of tuberculin in these cases of so-called hectic fever that has brought tuberculin into disrepute.

The following officers were elected for the ensuing year: President, Reginald H. Fitz; Vice-President, Wm. Osler; Recorder, J. Minis Hays; Secretary, Henry Hun; Treasurer, W. W. Johnston; Representative on the Executive Committee of Congress of American Physicians and Surgeons, William H. Welch; Alternate Representative, M. Allen Starr; Councillor, John H. Musser.

Drs. George Dock, of Ann Arbor, and T. M. Rotch, of Boston, were elected to membership in the Association.

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Recent Literature.

Hand-book of Massage. By Emil Kleen, M.D., Ph.D. Authorized translation from the Swedish by Edward Mussey Hartwell, M.D., Ph.D. 8vo, pp. xvi, 316. With seven illustrations. Philadelphia: P. Blakiston, Son & Co. 1892.

This work comes before us with an endorsement by Weir Mitchell, who states that he knows of no other book on the subject which is so good [illegible] this praise is well deserved. The author has a clear idea of the physiological action of massage, he recognizes, but does not exaggerate its value in certain affections, and his directions in regard to the methods of employing it and to the indications for its use are clear and sound. Frequent personalities detract from the scientific value of the book, although they are at times entertaining. As we seem to be entering upon a season when Swedish gymnasts are in fashion, and as in some instances members of the medical profession have somewhat unwisely endorsed their claims, it would be well for the profession to read the judgment pronounced upon them in this work.

The Disease of Inebriety from Alcohol, Opium and other Narcotic Drugs, its Etiology, Pathology, Treatment and Medico-Legal Relations. Arranged and compiled by the American Association for the Study and Cure of Inebriety. 8vo, pp. xiv, 400. New York: E. B. Treat. 1893.

The Association which assumes the responsibility for this work has adopted as its creed that inebriety is a disease which is curable; that it may be inherited or acquired; that alcohol is a poison; and that inebriate asylums are essential for the cure of inebriety. In support of this creed this volume has been published. Although it has the general endorsement of the Association, and is edited by its secretary, it seems to be the work of various hands, and many of the opinions advanced are without the weight of any personal authority, and anonymous scientific works seldom commend themselves. Much of the work is a compilation from various sources, put together with little method and without judicial weighing of evidence. That inebriety is often a disease few will question, but many of the statements brought forward in support of this view are still questionable, and when, on anonymous authority, we are told that alcoholism and tuberculosis are closely related, because pulmonary phthisis is principally nervous in character, we naturally doubt the scientific value of the work. Inebriate asylums, furthermore, have not yet fully established their value, in spite of the glowing endorsements they receive here. The proof-reading is beneath contempt, and the mechanical execution poor.

New York State Reformatory at Elmira. Seventeenth Year-Book, containing the Annual Report of the Board of Managers for the year ending September 30, 1892. 8vo, pp. 278. With illustrations.

Many men have some vague idea of the methods in use at the Elmira Reformatory, and the results obtained there; but definite knowledge as to the work which has made the institution famous is, we fear, only too rare. At any rate the table showing the state of the reformatory movement in this country is not encouraging. Seven States only have reformatories, and an equal number an indeterminate sentence law, yet Elmira reports, under the New York system, 82.3 per cent. of probable reformations. Beside the ordinary statistical tables this report gives many interesting details of the practical workings of the methods employed in the Reformatory, and it is to be commended to every one interested in the criminal, whether from an anthropological or a sociological standpoint, and to all legislators.

The report is well printed and illustrated, the work being done by the inmates of the Reformatory.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, SEPTEMBER 7, 1893.

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TEXAS CATTLE FEVER, AND THE MODE OF ITS TRANSMISSION.

THE agencies concerned in the transmission of disease are legion. In the vegetable world innumerable means are employed for the propagation of plants — by the aid of the winds, by birds, beasts, insects (as in the transfer of pollen by bees) and by the hand of man. So among animals, including the human race, some diseases are transmitted by direct contact, others by the medium of the breath, others through the alimentary tract, others by inoculation. Certain diseases are capable of transmission from the lower animals to man, and *vice versa*.

After extensive researches as to the natural history of the Texas cattle fever, the Bureau of Animal Industry (Department of Agriculture), at Washington, publishes its belief that an insect closely allied to the tick described by Dr. Williams in this number of the JOURNAL, constitutes a very important agency in promoting the spread of the disease. These researches are published in Bulletin No. 1 of the Bureau (1893), by Dr. D. E. Salmon, Chief of the Bureau, and were conducted, under his direction, by Drs. Smith and Kilborne.

Dr. Salmon, in his introductory letter, says: "The dissemination of the deadly contagion by apparently healthy cattle, and the harmlessness in general of the really sick animals were inexplicable by any facts which were furnished by the study of other diseases. Veterinarians who had not had an opportunity to observe this disease were skeptical in regard to the correctness of such conclusions, and some spoke of them as a 'romance in pathology.' There was an early impression among cattle-raisers that the tick was in some way to blame; but scientists were incredulous, because they could not understand how the bite of these insects could produce an acute disease, accompanied with destruction of blood-corpuscles, and lesions of internal organs. It was not till the micro-organism was found in the blood corpuscles, and its destructive effects were revealed, that the action of the ticks could be explained."

Experiments were made by the Bureau which demonstrated that the ticks carried the infection, introduced it into the tissues of the susceptible cattle, and in that way produced the disease. In this case there is, therefore, a complicated infection, in which two very different kinds of parasites play an important part.

Another remarkable discovery is that the micro-organism which constitutes the contagion of the disease is transmitted through the egg to the young tick, and it is this, and not the adult tick carried by the southern cattle, which finds its way upon susceptible animals, and causes the disease. In the absence of the tick, the disease is probably not communicable except by artificial inoculation.

The experiments were carefully conducted in isolated fields, and extended over several years' time.

The principal facts established by these investigations are (1) the constant presence of a blood-corpuscle-destroying micro-organism in Texas fever, and (2) the transmission of the disease from cattle to cattle by the tick.

The report embraces chapters on the natural history of the Texas cattle fever, its causation, its transmission by means of the cattle tick, and the immunity of cattle.

The tick which plays so important a part in the transmission of this disease was described by Professor Riley, in 1868, under the name of *Ixodes bovis*, and more recently by Dr. Marx, as *Boöphilus bovis.* It has the general characteristics of the genus, and each female lays from one thousand to two thousand eggs.

The experiments were conducted in three different directions during the period of four years (1889–1892).

(1) Ticks were carefully picked from southern cattle, so that none could mature and infect the ground. The object of this group of experiments was to find out if the disease could be conveyed from southern to northern stock on the same enclosure without the intervention of ticks.

(2) Fields were infected by matured ticks, and susceptible cattle placed on them to determine whether Texas fever could be produced without the presence of southern cattle.

(3) Susceptible northern cattle were infected by placing on them young ticks hatched artificially, that is, in closed dishes in the laboratory.

The report then gives a detailed account of the method of experimentation, together with plates illustrating the diseased and healthy structures, the micro-organisms, the tick in different stages of its growth, and presents the following conclusions as the results of observation and experiments:

(1) Texas cattle fever is a disease of the blood, characterized by a destruction of red corpuscles. The symptoms are partly due to the anæmia produced; partly to the large amount of *débris* in the blood, which is excreted with difficulty, and which causes derangement of the organs occupied with its removal.

(2) The destruction of the red corpuscles is due to a micro-organism or micro-parasite which lives within them. It belongs to the protozoa and passes through several distinct phases in the blood.

(3) Cattle from the permanently infected territory, though otherwise healthy, carry the micro-parasite of Texas fever in their blood.

(4) Texas fever may be produced in susceptible cattle by the direct inoculation of blood containing the micro-parasite.

(5) Texas fever in nature is transmitted from cattle which come from the permanently infected territory to cattle outside of this territory by the cattle tick (*Boöphilus bovis*).

(6) The infection is carried by the progeny of the ticks which matured on infected cattle, and is inoculated by them directly into the blood of susceptible cattle.

(7) Sick natives may be a source of infection (when ticks are present).

(8) Texas fever is more fatal to adult than to young cattle.

(9) Two mild attacks or one severe attack will probably prevent a subsequent fatal attack in every case.

(10) Sheep, rabbits, guinea-pigs and pigeons are insusceptible to direct inoculation. (Other animals have not been tested.)

(11) In the diagnosis of Texas fever in the living animals the blood should always be examined microscopically, if possible.

JEAN MARTIN CHARCOT.

In the death of Charcot, the medical profession has lost a conspicuous figure. Charcot was a prolific original investigator, whose contributions to various departments of medicine have hardly been exceeded by any one of this age. As a clinical teacher, he was one of the most popular on the Continent. He died in the midst of a busy life, but not before suffering from marked diminution of his physical powers. His death was, doubtless, partly the result of overwork, for he habitually took too little rest, as his large private practice was enough to fully tax the strength of any man.

To enumerate his titles and honorary offices, or the titles of his contributions to medicine would require more space than is at our disposal. Besides being connected with the founding and management of three medical reviews, he published over two hundred and fifty memoirs, chiefly pathological, in all of which something valuable was added from his own investigations.

In 1853, Charcot published his thesis for the doctorate, entitled, "A Study of the Affection described under the Names of Primary Asthenic Gout, Nodosities of the Joints, Chronic Articular Rheumatism." His researches in this disease comprehend a vast number of clinical and post-mortem observations made at the Salpêtrière. One of the most important facts brought to light by these researches is that affections of the heart, such as pericarditis and endocarditis, belong to the generalized form of chronic articular rheumatism, as well as to acute rheumatism. Another result is to establish an identity between the affection known in surgery under the names of dry arthritis, arthritis deformans, etc., and nodular rheumatism. The separation of gout and chronic articular rheumatism is maintained. He showed that the presence of uric acid cannot be detected in the serum of the blood in chronic articular rheumatism, while in acute and chronic gout the existence of crystals of uric acid has always been recognized.

In a subsequent memoir, he considers the alterations of the kidney observed in the gouty, and gives new researches on the alterations of the joints. Gouty nephritis he believes to be by no means rare, to be attended by deposits of urates in various parts of the kidney, and frequently with the symptoms of renal colic. The lesions may be those of parenchymatous or interstitial nephritis, and the general symptomatology is that of Bright's disease.

Charcot published numerous memoirs on arterial and capillary embolisms at a time when this study was new, and German pathologists were just beginning to give attention to the subject. A *brochure* "On Sudden Death from Obstruction of the Pulmonary Artery by Blood-clots, etc., contains the first observation of death by pulmonary embolism published in France. His paper "On Ulcerative Endocarditis," published in 1862, based on a case of ulcerous affection of the tricuspid valve with typhoid state and the formation of multiple abscesses in both lungs, was the point of departure of an extensive medical literature.

Charcot's contributions to diseases of the lungs constitute two volumes of the new series of his writings. No one now describes the lesions of broncho-pnemonia without referring to his work. In the study of *pneumokoniosis* and *anthracosis* his experiments on guinea-pigs, which were made to inhale in bags mineral or coal dust, gave valuable aids to the comprehension of the pathogeny of a disease often observed in men as a result of occupations exposing them to the action of solid particles diffused in the air. His anatomo-pathological researches on phthisis and chronic pneumonia have furnished valuable data and introduced system where it was before wanting.

His contributions to the subject of diseases of the liver and kidney are embodied in a volume published in 1882. He experimentally determined in guinea-pigs hypertrophic cirrhosis of the liver of biliary origin, and showed its identity with the disease which develops in man as the result of obstruction of the common bile duct. The different stages of the process he divides into angiocholitis, periangiocholitis, cirrhosis. His researches on the common or atrophic form of cirrhosis of the liver are also well known. He, more than any of his predecessors, has insisted on *periphlebitis* as the cause of this affection, and shown the extension of the inflammation from the veins to the connective-tissue. His observations clearly differentiate this form from the other types of interstitial hepatites. Charcot's researches on *grave icterus*, on *interstitial nephritis*, which he was the first experimentally to produce in animals by ligature of one of the ureters, an experiment which showed that the alteration of the epithelium precedes the connective-tissue proliferation, and on the various forms of Bright's disease, may also be noted.

He has also published valuable memoirs on fevers and on cholera, on skin diseases and on exophthalmic goitre, and his "Clinical Lectures on Diseases of Old Age," a work which embodies many of the researches and studies which he had previously made on gout and rheumatism. His contributions to the study of diseases of the nervous system — memoirs and treatises more than a hundred in number — are of great importance. In fact, it is in this department of medicine that he is best known.

Since January, 1882, Charcot held the chair of Clinical Instruction in Diseases of the Nervous System at the Salpêtrière, and gave almost his undivided attention to nervous diseases.

Among his contributions we may mention his clinical and anatomo-pathological researches on encephalitis; his "New Researches on the Pathogeny of Cerebral Hæmorrhage," which contain his description of miliary aneurisms, consequence of endarteritis, and cause of the cerebral hæmorrhages which characterize especially the apoplexies of old age; his studies on secondary degenerations of the spinal cord, on localizations in diseases of the cerebrum, on localizations in the cerebral ganglionic masses of the hemispheres, lesions of the internal capsule in particular; his memoirs on cerebral hemianæsthesia by organic lesion, and on secondary degenerations of the spinal cord in cortical lesions of the hemispheres, showing that lesions of the so-called motor zone even without participation of the internal capsule produces secondary spinal degenerations. We must pass by his valuable contributions to the study of localizations in diseases of the spinal cord. His discoveries in the subject of the *scleroses* alone — locomotor ataxia, multilocular sclerosis, fasiculated sclerosis of the lateral columns, also in the department of infantile paralysis, amyotrophic paralysis of the adult, labio-glosso-laryngeal paralysis, are of the greatest importance.

The modern study of hypnotism is intimately associated with the name of Charcot. His scientific methods of studying the subject, as opposed to the school at Nancy, are well known: in fact, the intimate association of his name with hypnotism has masked the importance of his work in other directions.

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THE TENEMENT-HOUSES OF BOSTON.

THE recent report of the Bureau of Statistics of Labor on the sanitary condition of the tenement-houses of Boston shows much to be desired; but it also shows the results of the constant and conscientious work of the City Board of Health. This board suffers from lack of authority, or divided authority, in dealing with buildings and remedies for existing evils.

The tenement-house population of Boston is continually changing. The worst part of it is composed very largely of foreigners accustomed to dirt; and the houses are often owned by landlords who can only be persuaded to clean up their premises when obliged to by legal authority. Some parts of the city are overcrowded, and in some there is a constant inflow of recent arrivals. On the whole, the health conditions of the city are good, but can only be kept so by continued watchfulness. The report classifies the tenement-houses into excellent, good, fair, poor and bad, in respect to their outside and inside sanitary conditions, ventilation, light and air and cleanliness. A tenement-house is one occupied by more than three families living independently of one another and doing their cooking upon the premises, or by more than two such families above the second floor. 5,992 families, containing 26,097 persons live in tenements classed as being of poor or bad inside sanitary conditions; and 38,311 live in uncleanly places. The percentages for the city show that of persons living in rented tenements about 12 per cent. are found in tenements having poor or bad outside sanitary conditions; between eight and nine per cent. in tenements poor or bad as to light, air and ventilation, and between 12 and 13 per cent. in tenements poor or bad with respect to cleanliness.

The health department has ordered 108 houses vacated during the year, in about three-quarters of which the requirements of the board were complied with within the specified time. In addition 14,079 nuisances were abated, and 872 privy vaults abolished.

The total number of families living technically in tenements is 71,665. Of these, 53,189, containing 228,680 persons, have no bath-room; 5,799 families are dependent on privies; while 65,866 have water-closets; but many of these privies are in the suburbs. 53,831 families have the use of yards; many use them for drying clothes; most of the remainder use roofs; 266 use rooms in the tenement; 4,710 use pulley lines; and a few others use vacant lots. There are 3,657 sleeping-rooms without outside windows.

The report describes the worst parts of the city, many of them being places and alleys technically private, which the street department does not clean. Pressure has in many cases been brought to bear on the abutters; but these private places, and empty lots, and yards of houses require constant inspection, and notification.

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MEDICAL NOTES.

The Manufacture of Cripples. — A horrible disclosure has been made in Biskupitz, Austria, by the arrest of a gang of men who for some time have been engaged in crippling children for the begging trade. Several unfortunate children were found in the house with their legs and arms broken and bound in positions of deformity. One little girl had both eyes gouged out. Instruments, which had been used in producing physical deformities, were discovered in the cellar. After the children (who had been stolen) were sufficiently deformed, they were sold to other persons for begging purposes.

Cholera. — The cholera throughout Europe remains unabated. In the East the condition has begun to improve. St. Petersburg has several new cases daily. In Hungary and Galicia the number of new cases each day is over twenty, with a high death-rate. Vienna is, at last reports, free from the disease. No new cases have occurred in Berlin. In Italy the epidemic is well scattered along the coast. Genoa has two or three deaths daily. Alessanchia, Messina and Catania are all infected; while in Palermo there are about thirty new cases daily. In Leerdam and Rotterdam where the cholera appeared August 25th, there are now nine or ten new cases daily with about five deaths. In England the port of Grimsby, Lincolnshire, has been declared to be infected with cholera, and traffic between it and other British ports has been prohibited. During August there were eighty deaths in Grimsby from what was called at first diarrhœa, and later a choleraic disease. The general belief now is that many of these deaths were due to cholera. Several deaths from sporadic cholera occurred last week in Jersey City, and occasioned some alarm. In two cases the dejecta contained spirilla.

NEW YORK.

Cholera in Jersey City. — It has as yet been found impossible to trace the origin of the unexpected occurrence of cholera in Jersey City. As soon as the suspicions of the members of the Board of Health of that city were aroused they called upon the Health Department of New York to assist them, and the bacteriological investigation made by Dr. H. M. Biggs, Chief Inspector of Pathology, Bacteriology and Disinfection, showed that the disease was true Asiatic cholera. Since then the officers of the Jersey City Board of Health, the New Jersey State Board of Health, the New York Board of Health, the United States Marine-Hospital Service, and the New York Quarantine Department have been in constant conference with a view to preventing the occurrence of other cases.

Mortality. — The State Board of Health reports that the average daily mortality during the month of July (in which the death-rate is always larger than in any other month), was 398, against 437 last year. The health of the city of New York continues exceptionally good for this season of the year. During the week ending August the number of deaths reported was 752; which is a decrease of 53 compared with the mortality of the preceding week and 71 less than the average of the corresponding weeks during the past five years. The number of deaths of children under five years of age from diarrhœal diseases was only 88, and this is 47 below the average of the corresponding weeks of the past five years.

Actions against Druggists. — Two infants have recently died in Brooklyn from the effects of medicines illegally prescribed by druggists, and proceedings have been instituted against the latter. An action for $10,000 damages has also been brought against one of these druggists in another case. The plaintiff alleges that his five-year-old daughter, having broken her arm, was taken to the defendant's drug-store, and that a liniment was prescribed under the idea that the injury was merely a sprain. For ten days or more this was used, but the arm finally became so swollen that the child was taken to the Brooklyn City Hospital, where it was ascertained that a fracture had occurred. By this time the bones had united in such a way as to cause a marked deformity, and it became necessary to fracture them over again and reset the fragments.

A Case of Longevity. — Mrs. Ann Hyde, according to the last census the oldest woman in New York State, died at her residence at Fishkill on the Hudson, August 28th, at the age of 104 years and four months. She was born at Fishkill, April 28, 1789, and as her name is on the baptismal register of the old Dutch church in that village, there can be little doubt about the correctness of her age.

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Miscellany.

"THE NEW ACQUAINTANCE."

In an article in a recent number of *Blackwood's* on "Scottish Medicine in the days of Queen Mary" there is an interesting account of one of the earliest epidemics of influenza. In November, 1562, Mary, Queen of Scots, was taken ill with a disease which had appeared suddenly and was widespread, exciting much curiosity among the people by reason of its novelty. Thomas Randolph, an emissary of Elizabeth at the Scotch court, wrote to Lord Cecil as follows:

"May it please your honor, immediately upon the queen's arrival here she fell acquainted with a new disease that is common in this town, called here the New Acquaintance, which passed through her whole Court, neither sparing lord, lady nor damoiselle — not so much as either French or English. It is a pain in their heads that have it, and a soreness in their stomachs with a great cough that remaineth with some longer, with others shorter time, as it findeth apt bodies for the nature of the disease. The queen kept her bed six days; there was no appearance of danger, nor many that die of the disease except some old folks."

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THE WILLIAM F. JENKS MEMORIAL PRIZE.

The trustees of the College of Physicians of Philadelphia will award the third triennial prize, of five hundred dollars, under the Deed of Trust of Mrs. William F. Jenks, to the author of the best essay on "Infant Mortality during Labor, and its Prevention."

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children"; and that "the trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1895, addressed to Horace Y. Evans, M.D., Chairman of the William F. Jenks Prize Committee.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers or their agents, within one year.

The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

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LEGISLATION FOR THE PREVENTION OF BLINDNESS FROM OPHTHALMIA NEONATORUM.

In the present day of prophylactic medicine no disease offers a more encouraging field for sanitary legislation than does ophthalmia neonatorum. A disease which causes yearly an enormous number of cases of permanent blindness, being undeniably a preventable one, should not escape strict control. Statistics from the various asylums of Europe and America show that an average of twenty-four per cent. of all cases of blindness are due to contagious ophthalmia of the new born. Prince[1] shows by a study of collected cases the indisputable fact that the percentage of cases of ophthalmia of inter-partum origin has steadily diminished under improved methods of obstetrical cleanliness. Of the cases which do occur, the number permanently injured has decreased even more since the importance of immediate care has been made generally known.

Much still remains to be done, however, both by missionary distribution of literature on the subject, as is done by the Hungarian, Austrian and French Governments, and by actual legislation by our States. Switzerland, in 1865, was the first country to take action, with the proud result that Professor Horner could say that during his lifetime no child born after 1865 was admitted to the Blind Asylum at Zurich with sight lost from ophthalmia neonatorum.

In this country New York and Maine passed laws requiring midwives to report reddened or inflamed eyes of children under their care within six hours, under penalty of fine or imprisonment. Bills to effect the same purpose have been introduced this past winter in the Legislatures of Ohio, Pennsylvania, Minnesota, Illinois, and the Dominion of Canada.

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[1] New York Medical Record, August 26, 1893.

A subject of so much importance ought not to be neglected longer in any State which claims to have an interest in the welfare of its children.

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Correspondence.

[From our Special Correspondent.]

LETTER FROM PARIS.

Paris, August 18, 1893.

Mr. Editor: — Only the pleasure of writing to the Journal [illegible] induce me to make any great exertion to-day, with the thermometer at 95° Fahrenheit, in the shade, and not a breath of breeze. I have been waiting to [illegible] the Salpêtrière until I can safely do so without sunstroke, and now Charcot is dead. The medical profession of Paris, of the world, has lost two great representatives this week, two men quite unlike in outward manner, but at heart equally enthusiastic for medical progress.

The brilliant extent of Professor Charcot's work, especially the almost dramatic results of hypnotism, have been the theme of all the papers for the last few days. The *Figaro* says that, "though in time the world may have lost all recollection of his work on locomotor ataxia, of his researches into the nature of hysteria and neurasthenia, and many have forgotten that he suspended tabetics that they might live, and that (without metaphor) he sold — dearly — wisdom to dements, there is one thing it can never forget, that he could drive out evil spirits and could calm perturbed souls, and that from all quarters of the world, where his word was as law, the worn and shattered mind turned to him as to a very miracle-worker and a savior."

Of all his work, the researches into hypnotism are here considered the great glory of his life and of modern medicine. His clinic at the Salpêtrière was called the "rendezvous and heart of the medical world." Doubtless his work will last; but it is exposed to great danger of change and evil, for in such a specialty there is a subtile distinction to be kept between medicines and charlatanry. This distinction Charcot maintained with the most delicate and appreciative tact, kept his work up to the standard of scientific research in spite of all attempt to degrade it to empiricism.

He was at times reproached, and not perhaps without some semblance of truth, with an unmeasured pride, a personality which was unabashed and assertive, and a love for applause which bordered upon the theatrical; but no one ever questioned his genius. "Great as his renown in France, it was here that he held the lowest place of all his glory; for at Dorpat as at Jena or Edinburgh or Berlin, at Vienna as at New York, his word was as law to the initiated."

A distinguished scholar, a wise observer, a prudent and sagacious clinician, often a bold experimenter, Charcot exercised an influence upon contemporary medicine as great as it was salutary. Discussing with a remarkable insight and breadth of view each new idea as it was advanced, he was an incomparable teacher. He died in the fulness of his powers; and with him there vanished one of the strongest personalities of this age.

Antoine-Emile Blanche was less known abroad, but his place will be even harder to fill than Charcot's. The son of a noted physician, he inherited an aptitude for the care of the sick which was little short of marvellous. A warm and generous nature which went out in sympathetic tenderness to the suffering, coupled with unusual strength of will and purity of character, made him particularly fitted for his specialty as an alienist. His private asylum at Passy was the retreat of many noted men. "He gathered the wounded in the battle of poetry, of romance, of the drama or of daily life, and carried them tenderly away to care for them, and cure if possible, upon his hill of Montmatre. No one might know the names of the patients of Dr. Blanche. He was the first to keep silent the name of him he saved; and as he kept the secret of those who died, he kept the harder and more sacred secret of those who lived. He passed silently and without recognition the patient he had cured. Once they returned to the walks of men, he ceased to know them."

A wise and good physician, he corrected theory by observation; fully abreast of the times in his scientific knowledge, he was always conservative in practice. His patients were not so much pathological [illegible] beings and he more than once expressed a fear that "the brilliancy of new methods might make men forget somewhat the old, which consisted in *pity* for the sick." The regret for his death has been widespread and sorrowful — a personal grief, as it were, for the loss of a warm friend, a generous giver, a tender, wise and just physician.

Last year much joy was given to the Parisians by a man with a musical anus. This year medicine supplies the curiosity. At the close of the Congress for the Advancement of Science the members of the Section of [illegible] had a banquet. At dessert the "venerable Dr. Schiff of Geneva, who presided," entertained the company by playing the [illegible] Strong rhythmic contractions produced a sound audible for two or three metres. He is said to be the only possessor of this accomplishment in society, which, however, does not prevent him from being a gallant gentleman and a scholar — *Au contraire!*

The health of Paris has been unusually good this year, notwithstanding the great heat, which has now lasted almost uninterruptedly for two weeks, and prevailed previously with interruptions. This heat has been accompanied by prolonged dryness, which has seriously injured all crops except the fruit crops. A remarkable yield of grapes is looked for, and experts expect a very fine year for wines. There has been no cholera in Paris or its neighborhood, and no occasion to avoid the city on account of that disease. The new water-supply is of excellent quality, though not yet entirely sufficient in quantity. There are very few strangers in the city, and Americans are conspicuous by their absence.

Yours truly, S. E.

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MEDICAL WITNESSES.

Dorchester, September 1, 1893.

Mr. Editor: — Judge Hammond remarks, on expert testimony, as he is quoted in the Boston *Medical and Surgical Journal*:[1] "The physician is often hampered by the stupid questions of the lawyer, who frequently puts on so many conditions that it may be impossible to answer many of his questions, and no attempt should be made to do so in the form in which they are presented."

This calls to my mind a case in which I once appeared before a coroner's jury, together with the late Drs. J. B. S. Jackson and C. C. Holmes, of blessed memory. The case was one which was of much public interest at that time. A young man had been severely beaten by a jealous husband. He came home bruised in body, and mortified in spirit, took cold, had a sore throat, and died. After the post-mortem, Dr. Jackson said: "Who can say that the beating caused this young man's death, and who doubts that, if he had not been beaten he would be alive to-day?" The coroner with his jury (nearly all of them named Tucker, with Captain Elijah as foreman, if I remember aright) was waiting for the result of the autopsy. The coroner was a very excellent and intelligent gentleman (and, withal a good judge of a horse), but the situation in which he found himself was new to him. One who has listened to medical testimony can well understand how, with an inexperienced coroner, the more talk the more confusion of ideas on the part of the jury. Such was the condition of affairs when Captain Elijah, impatient at the multitude of words, exclaimed, "What *killed* the man? That's the pint."

If the lawyers would ask questions to the *pint*, we should not hear so much complaint of medical experts. C.

[1] [illegible]

METEOROLOGICAL RECORD,

For the week ending August 26, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..20	30.06	64	67	61	89	89	89	S.E.	E.	5	12	R.	O.	0.02
M..21	29.82	63	[illegible]	58	94	84	89	N.E.	W.	24	12	R.	O.	1.65
T..22	30.11	70	80	[illegible]	74	81	78	W.	S.	8	8	C.	F.	
W..23	30.24	[illegible]	[illegible]	[illegible]	83	87	85	S.W.	E.	3	8	C.	O.	
T..24	29.18	68	74	62	100	71	85	S.E.	S.W.	26	26	R.	O.	0.13
F..25	29.93	80	93	68	70	72	71	S.W.	S.W.	14	7	C.	C.	
S..26	30.00	80	88	72	63	80	72	W.	E.	7	6	C.	C.	
☞	29.99		77	63			81							1.80

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 26, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrheal Diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,891,306	752	351	24.44	13.26	13.52	.78	5.46
Chicago . . .	1,438,000	528	236	33.82	7.03	23.37	2.47	4.37
Philadelphia .	1,115,562	387	180	23.92	10.92	15.86	3.64	2.34
Brooklyn . .	978,394	319	222	35.65	11.47	27.28	1.86	4.03
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	487,397	212	90	23.97	14.57	16.92	1.88	2.82
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	119	64	27.52	9.46	15.48	3.44	5.16
Cincinnati . .	305,000	99	57	20.20	4.04	12.12	4.04	2.02
Cleveland . .	290,000	107	63	32.55	6.51	28.83	.97	.97
Pittsburg . .	263,709	—	—	—	—	—	—	—
Milwaukee . .	250,000	120	80	40.67	7.47	32.37	1.66	3.32
Nashville . .	87,754	36	15	19.46	16.68	5.56	8.34	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	11	4	18.18	9.09	18.18	—	—
Worcester . .	96,217	37	24	43.20	—	29.70	—	—
Fall River . .	87,411	36	25	58.38	8.34	58.38	—	—
Lowell . . .	87,191	46	31	45.57	8.34	43.40	2.78	—
Cambridge . .	77,100	29	13	31.05	13.80	20.70	—	—
Lynn	62,656	30	15	26.66	9.99	20.00	—	—
Springfield . .	48,684	18	8	33.33	16.66	27.27	—	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	45,886	29	18	48.30	6.90	41.40	—	—
Holyoke . . .	41,278	—	—	—	—	—	—	—
Salem	32,233	12	7	25.00	—	25.00	—	—
Brockton . .	32,140	9	5	—	—	—	—	—
Haverhill . .	31,396	10	5	50.00	—	30.00	10.00	—
Chelsea . . .	30,264	13	4	15.38	15.38	—	—	—
Malden . . .	29,394	10	2	30.00	10.00	30.00	—	—
Newton . . .	27,556	—	—	—	—	—	—	—
Fitchburg . .	27,146	7	5	42.84	—	42.84	—	—
Taunton . . .	26,972	13	4	38.46	—	38.46	—	—
Gloucester . .	26,688	15	9	59.94	6.66	52.22	—	—
Waltham . .	22,058	11	6	45.45	18.18	36.36	—	9.09
Quincy . . .	19,642	7	5	42.84	28.56	42.84	—	—
Pittsfield . .	18,802	9	6	66.66	—	55.55	—	11.11
Everett . . .	17,585	3	2	33.33	—	—	33.33	—
Northampton .	16,331	10	4	50.00	20.00	30.00	—	—
Newburyport .	14,073	6	[illegible]	16.66	—	—	16.66	—
Amesbury . .	10,920	2	2	—	—	—	—	—

Deaths reported 3,069: under five years of age 1,615; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 404, diarrhœal diseases 608, consumption 316, acute lung diseases 180, diphtheria and croup 107, typhoid fever 63, whooping-cough 29, cerebro-spinal meningitis 23, scarlet fever 22, measles 17, malarial fever 9, erysipelas 6, small-pox 2.

From whooping-cough New York 9, Chicago 7, Philadelphia and Brooklyn 3 each, Cincinnati 2, Boston, Washington, Nashville, Cambridge and Haverhill 1 each. From cerebro-spinal meningitis Chicago 7, New York 5, Brooklyn and Washington 2 each, Philadelphia, Cleveland, Worcester, Lynn, New Bedford, Gloucester and Waltham 1 each. From scarlet fever New York 6, Chicago and Boston 3 each, Philadelphia, Milwaukee and Cambridge 2 each, Brooklyn, Worcester, Lynn and Woburn 1 each. From measles New York 11, Brooklyn, Washington, Milwaukee, Worcester, Springfield and New Bedford 1 each. From small-pox New York and Chicago 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending August 19th, the death-rate was 22.8. Deaths reported 4,515; diarrhœa 629, whooping-cough 100, measles 92, diphtheria 81, scarlet fever 78, fever 76, small-pox (Bradford 4, London 3, West Ham 2, Birmingham 1) 10.

The death-rates ranged from 13.6 in Halifax to 33.1 in Preston; Birmingham 22.0, Bradford 17.6, Croydon 24.4, Hull 31.0, Leicester 25.2, Liverpool 27.1, London 22.5, Manchester 23.2, Newcastle-on-Tyne 18.3, Nottingham 21.5, Portsmouth 19.3, Sheffield 25.8, West Ham 25.2.

AN ARMY MEDICAL BOARD

Will be in session at Washington City. D. C., during October, 1893, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before September 15, 1893, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-two and twenty-eight years of age and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

GEO. M. STERNBERG, *Surgeon-General U. S. Army.*

MASSACHUSETTS MEDICAL SOCIETY.

CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet for examination of candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, September 21, 1893, at 2 P. M.

Candidates should make personal application to the Secretary on Mondays or Thursdays, from 2 to 3 P. M., or at the time and place of the examination. They must bring their medical diploma or a certificate that they are entitled to one, with them.

JAMES J. MINOT, M.D.,
188 Marlborough Street. *Secretary.*

RECENT DEATHS.

DAVID SYLVESTER FOGG, M.D., M.M.S.S., died in Norwood, August 30th, aged seventy-two years.

ADONIRAM J. GREELY, M.D., died in Providence, R. I., September 1st, aged seventy-five years.

BOOKS AND PAMPHLETS RECEIVED.

The Successful Treatment of Typhoid Fever. By Charles Milton Buchanan, M.D., Washington, D. C. Reprint. 1893.

A Manual for Boards of Health and Health Officers. By Lewis Balch, M.D., Ph.D. Albany, N. Y.: Banks & Brothers.

Report of Four Hundred and Sixty-Six Cases of Intubation of the Larynx. By F. E. Waxham, M.D., Denver, Colo. Reprint. 1893.

Tenth Annual Announcement of the Medical and Dental Departments of the National University, 1893-94, Washington, D. C.

Observations on a Case of Recurrent Amœbic Dysentery with Successive Large Hepatic Abscesses. By John Winters Brannan, M.D. Reprint. 1893.

Transactions of the New York State Medical Association for the year 1892. Vol. IX. Edited for the Association by Ogden C. Ludlow, M.D. New York. 1893.

Transactions of the Medical Society of the State of Pennsylvania at its Forty-Third Annual Meeting, held at Williamsport. Vol. XXIV. Philadelphia: Published by the Society. 1893.

A Manual of Medical Treatment or Clinical Therapeutics. By I. Burney Yeo, M.D., F.R.C.P., Professor of Therapeutics in King's College, London. In two 12mo volumes containing 1275 pages, with illustrations. Philadelphia: Lea Brothers & Co. 1893.

Lecture.

THE MISUSE OF DRUGS IN MODERN PRACTICE.[1]

BY [illegible], M.D., [illegible] CAMBRIDGE.

([illegible] No. 10, page [illegible])

Of late years, the value of drugs in the treatment of disease has been asserted with increasing vigor. I have already spoken of the number of new remedies which have been brought to our notice of late years. I quote from an article on "Progress in Pharmacy," by John Aulde, M.D.:

> "Alkaloids and synthetic remedies practically rule the field, and the pharmacist finds his sphere limited principally to preparing these powerful concentrated remedies into convenient forms for administration. It has been a decade of enormous progress, and the resulting disquietude of the transition period is not yet allayed. New remedies are introduced day by day, without a sign of abatement in the inventive and creative art of the chemist. . . . It is a safe estimate to claim that one hundred new remedies of synthetic origin, which were not known ten years ago, are now in general use, and the number is daily increasing."[8]

But it is not necessary to multiply authorities. One has only to turn over the pages of our medical journals to be convinced of the truth of this statement. New remedies are announced almost daily. We read of new uses for the same remedy, new remedies for the same uses, until we wonder, as the layman must, as he reads the medical advertisements in the daily papers, that our bills of mortality are still so high.

Have we reason to believe that we have made substantial gain in our power to control disease by this great addition to our list of remedies?

It was held by Bigelow and his supporters that most acute diseases were self-limited, and could be influenced only slightly, if at all, by drugs. "By a self-limited disease," he says, "I would be understood to express one which receives limits from its own nature, and not from foreign influences; one which, after it has obtained foothold in the system, cannot, in the present state of our knowledge, be eradicated or abridged by art; but to which there is due a certain succession of processes, to be completed in a certain time; which time and processes may vary with the constitution and condition of the patient, and may tend to death, or to recovery, but are not known to be shortened or greatly changed by medical treatment."[9]

Nearly sixty years have passed since these words were written. With all the activity in the study of therapeutics, with all the new medicines which have been added to our list, can this definition be disputed or materially changed? Certainly not, as far as the epidemic diseases are concerned which from time to time make their appearance with such fatal results. The fatality of the recent epidemic of cholera in Europe, amounting to about fifty per cent., shows no gain in our power to control it. The same thing may be said of yellow fever. If we have made any progress in our treatment of small-pox, it has been by following the methods of rational medicine, and trying to support the patient while the disease goes through its regular succession of processes.

Diphtheria is a disease which many of us still in active practice have seen in its commencement and spread. Its average death-rate of about one-third shows that no medicine has yet been found which can materially influence its course. On the other hand, when we examine the properties of many of the drugs which have had a wide use, we cannot escape the conclusion that the patient has often had to contend with the remedy, as well as with the disease. In a recent discussion in the New York Academy of Medicine, Dr. E. H. Janeway said "he had no doubt that a certain number of people, said to die of diphtheria, in reality died of the remedies given against the disease."[10]

Epidemic influenza tends strongly to recovery. Its results, immediate and remote, are determined by the constitution and condition of the patient. Various as are the drugs which have been given in this disease, good as are the results which have been claimed for them, there is no drug treatment upon which the profession is agreed as materially influencing it.

The result of the tabulation of one thousand cases of acute lobar pneumonia, treated in the Massachusetts General Hospital from 1822 to 1889, is thus stated by Townsend and Coolidge: Twenty-five per cent. of the cases were fatal. Treatment was heroic before 1850, transitional between 1850 and 1860, expectant and supporting since 1860. There is no evidence that the duration, length of convalescence or the fatality have been modified by treatment.[11]

Acute rheumatism is a disease, which if our art has not subdued, it is not for want of effort. To enumerate the drugs which have been used in this ailment would far exceed the limits of this address. More than once have sanguine hopes of a remedy been raised, soon to fade before experience. Of late years, salicylic acid and allied drugs have held the first place. It may be questioned if we have gained as much from them as many believe. These medicines relieve the pain, and lessen the fever more rapidly than any others of which we have knowledge. But relapses are more frequent than under other modes of treatment. The cardiac complications are quite as common as under any other treatment. They have no power either to prevent or to overcome the most dangerous symptom of this disease, hyperpyrexia. The duration as shown by length of stay in hospital is not materially lessened. The untoward effects of these drugs are common, often serious, sometimes fatal.[12] When we remember that these results are mainly drawn from experience in hospitals where patients are usually taken from bad, and put under good conditions, we must admit that the modern drug treatment is, at best, one of alleviation, and that this result is not gained without a considerable risk.

No drug has been found, even in the long list of synthetic medicines, which materially modifies the course or changes the result of typhoid fever. If figures are to be trusted, the only agent which may do this is cold water. If it be said that this is a drug, considering the use to which it is put, it is one which has no hurtful properties in itself, which can be safely, if judiciously, used, and which the pharmaceutist cannot utilize for purposes of gain.

The most trivial of acute diseases is coryza, commonly known as "a cold in the head." Its diagnosis is easy, its natural history well known. Its local manifestations are within sight. If drugs have power to abort or shorten disease, we should find proof of it here. Belief in their power is abundant, evidence of it is wanting. The harm that has been done by attempts to influence this disease will not be questioned by any one who has seen cocaine poisoning, or has had to treat the cocaine habit. Aurists tell us that the massive doses of quinine often used, may set in motion a train of pathological processes which have fatal possibilities. If we cannot do a little thing with drugs, we may well doubt our power to do a great thing. If we cannot cure a cold in the head, let us be modest in claiming the power to cure diphtheria.

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[1] [illegible] the Massachusetts [illegible]

[8] [illegible] New York [illegible]

[9] Address on Self-Limited Diseases (Medical Communications of the Massachusetts Medical Society), vol. [illegible], Boston, [illegible]

[10] [illegible]

[11] [illegible] Boston Medical [illegible]

[12] [illegible]

Turning to the subject of chronic diseases, the name itself implies the inadequacy of our art to shorten them. Cures for consumption have abounded in the history of medicine. Our own time has given birth to many, yet it is generally fatal. Cures for cancer, even, have not been unheard of, yet its prognosis remains unchanged.

Dyspepsia, which has been called our national disease, still maintains its foremost position, in spite of the use of pepsin (so large that some of the great meat-packing houses have found profit in putting it on the market), and the multitude of digestive ferments with which the enterprise of our pharmaceutists has furnished us. The pithy prescription of a member of this Society, long since gathered to his fathers, "drink the hundredth stroke of the pump before breakfast," and the still more comprehensive one of Abernethy, "live upon sixpence a day, and earn it,"[13] have cured more cases of dyspepsia than all the pepsins and triferments of the druggists' circulars.

As we turn the pages of the mass of literature on nervous diseases, a sentence from the first aphorism of Hippocrates occurs to us: "Life is short and the art long." Studying the drug treatment of these disorders, we find little to convince us that the good it may do is not counterbalanced by its possible influence for harm.

Among the new drugs which have been brought into use of late years, those supposed to have a tonic or stimulant effect upon the heart hold an important place. In acute disease, as the heart shows supposed weakness, one, often several, of these powerful medicines are advised, while in diseases of the heart itself they find their greatest field of action. That they may often be of service no one will deny. That they may do harm, no one who studies their toxic properties can doubt. That their power for good is limited is at least suggested by the fact that, since their multiplication, "heart-failure" appears with increasing frequency in our certificates of the cause of death.

The numerous synthetic drugs, of which the most largely used are antipyrin, antifebrin and phenacetin, have wide applications in disease, if one may believe all he reads about them. Prof. H. A. Hare says of these three drugs:

> "They have relieved an amount of human misery, resulting from painful manifestations of functional or organic nervous disease, which it is not in the power of the human mind to estimate, and this, too, in most cases, without any ill effects such as follow the opiates. . . . Nor have these products proved themselves limited to any one class of cases. They have proved a perfect wonderland of useful application, and there is certainly no drug ever discovered which is so universally applicable as antipyrin, the powers of which are almost as diverse as disease itself."[14]

The young practitioner, reading this statement by a teacher of therapeutics in a leading school, must feel that a panacea is almost found. Filling his pocket-case with these drugs, he goes on his way rejoicing in his power to relieve and cure. If he gives them to every patient who complains of pain, and attributes the relief to the drug, he will, for a time, be a happy man. It will not be long, however, before he meets with cases where the expected relief does not come. If he observes carefully and honestly, he will see harmful results in not a few cases. He is fortunate if he does not get thoroughly frightened by the effects of his remedies before long.

Let us examine the power of these drugs for harm. I take the facts which prove it from an essay by the same man who praises their power and safety so highly, to which was awarded the Boylston prize of Harvard University in 1890. I can give only a brief statement of the subject, referring those to the essay who prescribe these drugs without fear of consequences.

Antipyrin. 127 cases of untoward effects; 8 deaths; result not stated in 14 cases.

Antifebrin. 38 cases of untoward effects; 3 deaths; result not stated in 1 case.

Phenacetin. Three cases of untoward effects; no death.

Summing up these figures, there are one hundred and fifty-three cases in which the result is stated. Eleven were fatal, or about seven per cent. It is true that in most of the fatal cases the result was largely due to the disease for which the drug was given. It may be fairly said, however, that the chance of recovery was lessened by the disturbance caused by the drugs.

The serious character of the untoward symptoms recorded in these tables is shown by the fact that collapse, often described as "severe," "alarming," "profound," occurred in fifty cases; cyanosis in thirty-one; disturbance of the heart's action in eighteen; dyspnœa in nine; a purpuric state in seven.[15]

To determine correctly the effect of drugs in disease is one of the most difficult questions which the practitioner of our art has to meet. Experience is the source of nearly all the knowledge we have to aid us in answering it. Science has told us how some drugs, which experience has approved, produce their favorable effects; but the day of a scientific system of administering drugs has not yet arrived.

An accurate diagnosis is essential to trustworthy experience. Errors upon this point are the cause of many of the uncertain and contradictory conclusions which have been drawn from experience. Diagnosis is seldom easy, often doubtful, sometimes impossible. Having made a correct diagnosis, we must know the natural history of the disease. We cannot know the effect of a medicine in a disease unless we also know what will be its duration, the order of succession of its symptoms, and the probable result, uninfluenced by drugs. We must know the probable cause of the disease, for we cannot draw a fair inference as to the usefulness of a drug if the cause is still in operation. We must also know the action of drugs upon the system in health, and how to apply them correctly in disease. We have all these facts in very few cases; in many cases we have certain knowledge of none of them. Ignorance of any one of the factors of the problem gives a wrong answer. To assert the value of a drug in phthisis, where it has been given in a case of catarrhal inflammation of the lungs, to ascribe the improvement which nature effects at the crisis of pneumonia to the medicine given at the time, to proclaim the efficiency of drugs of which we know so little as we do of many of the new ones which are daily brought into use, are examples of the errors which make experience so fallacious. To give drug after drug, perhaps the very one which has caused the disorder, to a patient suffering from chronic poisoning by arsenical wall-paper, is mortifying to the doctor, and calculated to bring the art into contempt with the patient.

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[13] Physic and Physicians, Philadelphia, 1845, Part i, p. 98.

[14] International Medical Annual, 1893, New York and Chicago, p. 4.

[15] Fever: its Pathology and Treatment by Antipyretics, by Hobar Amory Hare, M.D., etc., Philadelphia and London, 1891.

The constitution and condition of the patient must also be taken into account. The tendency to disease, hereditary or acquired, the power of resisting its causes, the influence of surroundings, must be known before we can judge correctly as to the influence of drugs.

Even if the mass of recorded experience was that of competent observers, the question is so beset with difficulties that the answer must be a doubtful one. But, especially of late years, those men whose opinions are most to be valued have not much to say about the use of drugs. As I meet such men in consultation, I find that while they are careful in diagnosis, painstaking in investigating causes, attentive to the surroundings of the patient, they are cautious about advising powerful medicines. I think most thoughtful men will say that, as they grow older, they put less trust in drugs.

But much of the so-called evidence in favor of the usefulness of drugs is drawn from the reports of men whose argument is *post hoc, ergo propter hoc.* Not careful in diagnosis, undervaluing the power of nature, influenced by authority or the fashion of the day, they are always ready to try new remedies, and quick to report their supposed successes. They do not apply this argument to their failures. Often they do not report them, in which case their testimony is worse than worthless; it is misleading and dangerous. Some, too honest to conceal the truth, report their unfortunate results, but ignore the possible effect of drugs in determining them, offering some plausible explanation of them. We often read something like this: Dr. —— has treated twenty-two cases of typhoid fever by a certain drug, with twenty recoveries. Of the fatal cases, one was moribund when the treatment was begun, the other died of perforation of the intestine. "There are some people," says Paget "who seem to have a happy art of forgetting all their failures and remembering nothing but their successes, and as I have watched such men in professional life, years have always made them worse instead of better surgeons. They seem to have a faculty of reckoning all failures as little and all successes as big; they make their brains like sieves, and they run all the little things through, and retain all the big ones which they suppose to be their successes; and a very miserable heap of rubbish it is that they retain." [16]

The average patient listens with much more interest to the prescription of his physician than to his directions about his hygiene. Expecting good results from the drug, he often imagines that he feels them. So great is the power of hope that, even in incurable diseases, a temporary improvement often follows each new prescription. This power of hope is one of the chief articles of the materia medica of the quack. It is sometimes used by the educated physician, who calls it "expectant attention." From a recent system of therapeutics I quote extracts from an article written by a professor of therapeutics in one of the leading schools of the country:

> "The physician who fails to avail himself in disease of the 'expectant attention,' drops one of the most important articles out of his list of medicinal agencies. . . . When I was resident physician in the Philadelphia Hospital and was in charge of a large ward of women, I habitually used a solution labelled 'morphine,' which contained none of that alkaloid, but just enough quinine to make it conform in taste to the knowledge of the habitués of the institution, and in three cases out of five it aided in bringing comfort and rest, as well as did the genuine morphine solution. Some time ago, I gave a patient, with very minute and emphatic instructions as to the method of use, a prescription for pills of bread. Several months after, she came back to me and said, 'Doctor, why did you not give me that prescription sooner? It is the only thing that has reached my case, and I have had that prescription filled at the apothecary's for a number of my friends, with extraordinary results.'" [17]

The pharmaceutists give us a hint as to how far this sort of teaching has influenced our art, when they offer us the means to carry out such treatment. Within six months, the agent of a large manufacturer of "tablet triturates" offered me "blank tablets." The name he gave them will interest many of this audience. It was "Harvard Experimental Diagnosis Tablets." Setting forth their value to me from a business point of view, he told me, untruthfully I hope, that he had just sold five thousand to a physician in my own town. There can be but one opinion among honest men about this practice. It not merely weakens the distinction between the regular practice of medicine and the practice of quackery; it destroys it; it *is* quackery.

The germ theory of disease is passing beyond its first stage, and is taking its place as a real addition to the science of medicine. It has rendered great service to the art by adding to the power of preventive medicine. It has not done much for the drug treatment of disease. If it is believed that infectious diseases are caused by germs, introduced from without, the inference that drugs which kill them outside the body may destroy them after they have got in, is so attractive that it has led to many experiments in this direction. Drugs of highly poisonous properties have been largely used with this end in view. That harm has resulted from these experiments there can be no doubt. There is good reason to believe that in the hands of men who make facts suit their theories, life has been endangered, and even destroyed, by the reckless use of these drugs. No efficient and at the same time safe drug is now known which can destroy the germ within the system. The efficient germicides are dangerous, the safe ones are uncertain. It is too soon to say what advances in the use of drugs may result from the germ theory in the future. It may be that disease will yet be prevented, or even cured, by injecting substances into the system which may kill germs, directly or indirectly. It may be, to use the words of a believer in this hopeful prospect, that "the future of scientific medicine is in this direction, and that we have entered upon a field that is to be cultivated vigorously, and which will give you results that will knock the conservatism from under your feet before many years."[18] Conservatism always will be a solid foundation for the practice of medicine. The memory of tuberculin is too recent to allow us to forget that a great man may reduce his theories to practice prematurely, and so shake the confidence of the public in our art.

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[16] [illegible] Lectures and Essays, London, [illegible], p. [illegible]

[17] A System of Practical Therapeutics, [illegible], pp. 51, 52.

It is my belief that nothing has done more to encourage reliance on drugs than the narrow definition which is given to materia medica and therapeutics. How restricted this definition is, is well shown by a study of the examination papers in these branches, as printed in the catalogues of Harvard University, since the graded course in medicine was established. Of the 291 questions in materia medica, 288 relate solely to drugs. The exceptions deal with articles of food. There are 164 questions in therapeutics; 152 deal with drugs only. Of the twelve exceptions to the rule, six are on the use of cold, one includes cold baths among antipyretic drugs, four refer to diet, while one is hardly an exception, "Course of acute rheumatism if left to itself; how can you improve upon this?"

Thus the narrow definition is perpetuated, and the student is led to look upon drugs as the most important part of these branches of the art.

In its broad sense the materia medica includes everything which can cure or mitigate disease. The Greek word from which therapeutics is derived signifies to wait on, to heal. Treated in this larger way, materia medica would no longer be, what the instructor in this department in the Harvard Medical School says it now is, "a most dry and uninteresting subject, which offers almost no attractions, and is, for the most part, a mere matter of memory."[19] Giving its wider meaning to therapeutics, it would include private hygiene, as it ought to do. Hygiene is the mother of our art. Medicine, surgery, obstetrics, all the specialties into which these subjects have been subdivided, depend for their successful practice upon an observance of its laws. Why should it not be given the place it ought to hold, as the source of the most certain and most effective powers we have over disease?

In a recent publication, the instructor in materia medica and hygiene in the Harvard Medical School says: "The old-fashioned method of teaching materia medica and therapeutics is, or ought to be, a thing of the past. In the best Continental schools these subjects are taught in a manner quite unlike that to which we in this country have been accustomed. Their teachers are not necessarily men of large medical practice. Indeed, the best of them are not practitioners at all. Their time is engaged in the study of the action of drugs and other remedial agents, and this, with necessarily more or less of their application to disease, they teach to their students, leaving by far the greater part of the practical side to the different clinical teachers."[20]

There can be no question that the subjects of materia medica and therapeutics, even with their present limitations, have outgrown the capacity of any one teacher. So far as the physiological action of drugs is concerned, it is true that it is better taught by a man whose time is devoted to scientific work. It is a branch of physiology, and its results are as certain as those of any other branch of that science. But when the application of these laws is considered, we pass from the field of truth into the tangled paths of experience. It may be clearly proved that a drug will contract the blood-vessels of a frog; it is not so certain that it will have the same effect upon a sick man, or that, if it does, it may not hinder rather than help his recovery. It may be taught by the man of no practical experience that, in the forming stage of sthenic pneumonia, large doses of veratrum viride will remove the excess of blood in the diseased part, and by paralyzing the general vaso-motor system, bleed the patient into his own blood-vessels. He may add that when consolidation has taken place, "one grave danger is failure of power in the right side of the heart," and that "under these circumstances a cardiac depressant would immensely increase the danger."[21]

It requires the practical knowledge which comes from experience to teach that the first stage of pneumonia has generally passed before the patient is seen; that, even if the crepitant râle is heard, the deep parts of the lung may be solid; or that, if the case is seen in its forming period, and directions are given in accordance with this theory of treatment, consolidation may occur in a few hours, and the danger of the drug be "immensely increased."[22]

The clinical teacher deals with the question of drugs as applied to the cases that come under observation at the moment. He may not touch upon drugs which are fresh in the student's mind. His instruction must reflect his own opinions, which may differ from those of his colleagues. Great as is the advance which the art of medicine has made since clinical teaching has become so important a part of the course of study, high as is the character of this teaching in the Harvard Medical School, there is need, I think, in all schools, of a wise and experienced man to give instruction in therapeutics, and especially in the uses and limitations of drugs. He should be competent to weigh evidence, to sift the trustworthy from the unreliable, the safe from the dangerous. He should have attained the ability which Hippocrates commends when he says, "I look upon it as being a great part of the art to be able to judge properly of that which has been written."[23]

(To be continued.)

Original Articles.

A CONSIDERATION OF THE PARÆSTHETIC NEUROSIS.[1]

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SOME two years ago, while attending the meeting of the Southwest German Neurological Society at Baden-Baden, my attention was attracted to a paper read by Dr. Leopold Laquer, entitled, "A Special Form of Paræsthesia of the Extremities." I remembered that we had seen a number of such cases in the clinic at the Post-Graduate School, and determined on my return to make a study of them with a view to their classification.

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[18] Sternberg: Transactions of the Association of American Physicians, vol. vii, p. 86.

[19] Bulletin No. 4 of the Harvard Medical School Association, p. 62.

[20] Loc. cit., pp. 63, 64.

[21] System of Practical Therapeutics, Philadelphia, 1891, vol. i, p. 23

[22] Flint: Practice of Medicine, Philadelphia, 1886, p. 156.

[23] The Genuine Works of Hippocrates, Sydenham Society, vol. i, p. 407.

[1] Read before the New York Neurological Society, June 6, 1893.

The paper which I present to you this evening is based on an analysis of forty-three cases in which the symptom-complex, hereafter described, was the only evidence of illness. I have endeavored to exclude from these statistics other cases of acro-neuroses, which, while they present some of the symptoms of the following cases, have other individual symptoms more pronounced, such, for instance, as ignipedites, waking palsy, and the like. Before entering into a discussion of the details of the form of paræsthesia to which I wish to call your attention, I should like in the first place to give the clinical history of a single case that shows a typical picture of this most distressing disorder.

Mrs. L., thirty-nine years old, is married and does house-work, including needle-work, washing and scrubbing. She was born in Germany, and has a good family history. The patient is a stout, strong, well-nourished-looking woman, and gives the following history: About five years ago she began to complain of "pins and needles" sensations in both hands, the right worse than the left. This continued, off and on, for two years. She was then taken with a severe flooding, and since that time the sensations have been very much more troublesome. As a rule, they come on in the following way: She may go to bed quite well, with an entire absence of any sensations in the hands, and about four o'clock next morning she is awakened with a dumb, sleeping sensation, as if electricity was passing through them, or, as she expresses it, "as if her hands had gone to sleep, only a hundred times worse." These sensations persist after she arises; and rubbing, using, moving or chafing the hands, as is often done to restore the circulation, gives no relief. The symptoms are somewhat ameliorated when she gets up and stands or walks about with the hands hanging by the sides. During the day, when she works about the house, the paræsthesiæ are not present; but when she stops and takes up sewing or sits quietly or lies down, and particularly on the following night, the sensations are very severe. In this patient the paræsthesiæ never occur in the feet. There are no objective symptoms. Her general health is good, appetite normal, bowels constipated, menstruation regular but excessive; she has headaches occasionally, and gets tired much more easily than formerly.

It will be seen that the clinical picture, in brief, is as follows: The sufferers from this affection are in fairly good health; that is, were it not for the paræsthesiæ, they would not have occasion to consult a physician. The paræsthesiæ which they complain of are made up of gnawing, boring, "pins and needles" sensations in the extremities, particularly the upper, and involving the fingers, hands and forearms, often of both sides, but not infrequently of only one. These sensations are not limited to the distribution of any one particular nerve in the extremity, but spread over entire segments of a member, such as a hand or forearm, with equal intensity. There is rarely any pain in the sense in which that word is ordinarily used. Using the word pain as the antithesis of pleasure, this paræthesia furnishes a form of exquisite pain. While the paræthesiæ lasts and in the interim between attacks, which is always a variable period, there are no fairly constant objective phenomena. Occasionally, the circulation of the extremities is evidently somewhat sluggish. There is absolutely no tenderness on pressure over any of the nerves of the part, and no perceptible changes of a trophic, motional or degenerative nature. The affection shows itself intermittently in paroxysms, and the period of the twenty-four hours when an attack is most likely to show itself is from four to six in the morning. The perverted sensations at this time become so severe as to awaken the patients and put an end to farther rest. Another favorite time is a corresponding hour in the afternoon. As a rule, however, the attacks in the day-time have a very close relationship to the work that the patient has been doing. In one subject to this form of paræsthesia an attack can almost always be precipitated by doing sewing or any other needle-work and by washing or scrubbing. There is no loss of sensibility to any form of sensorial irritation, nor is there loss of muscular strength on testing with the dynamometer. The patients complain, however, that the strength of their arms is more easily exhausted than formerly, and they cannot so easily sustain effort. In some cases the patients will describe other subjective sensations; but, in the main, they are as I have given them.

In studying the etiology of this affection, I find that the average age of the patients is just above thirty-nine years. Of the 43 cases on which this paper is based, 35 were women, eight were men. The age ranged from twenty-three to fifty-nine. Of the 43 cases, 26 were in the decade between thirty-five and forty-five years. Of the 35 women in the series, seven had suffered at some not very remote period either from metorrhagia or flooding.[2]

I want to emphasize this point somewhat, as it seems to have an indirect bearing in the etiology. Of the 43 cases, six had suffered previously from rheumatic or gouty pains, and of these three were males. In eight of the cases there was evidence of more or less anæmia. The most striking factor in the etiology, however, is the occupation. Of the 34 females, about 55 per cent. did either washing or scrubbing, crocheting or needle-work of some kind. Of the males, one was a waiter and dish-washer in a restaurant, another was a carpet-stretcher. Of the females, five were nursing children, two were pregnant. The time of the year in which the paræsthesiæ were most troublesome does not seem to be pertinent, and changes in the weather have no effect except that these patients naturally become, after a time, anything but cheerful, and inclement weather adds to their gloom. Neither heredity nor neuroses, such as hysteria, neurasthenia, etc., can be associated with this form of paræsthesia. Schultze has recently stated[3] that the sudden exposure from heat to cold has a causative influence, but I have been unable to find it in my cases, nor have I been able to induce the paræsthesia artificially in this manner, as will be spoken of later. Regarding disturbances of digestion being at the bottom of the trouble, as has been positively stated by Saunby, I must say that the digestive functions were carefully studied in many of the more recent cases of this series,

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and rarely was any particular disturbance of it found. When alcohol is apparently a causative factor of the paræsthesia, it should, I believe, be classified under the toxic variety. What relation this form of paræsthesia bears to autotoxæmia and the lithæmic constitution is not so easily disposed of. Unquestionably, there exists in the minds of many physicians who have observed this neurosis some illy-defined ideas as to the relationship of lithæmia and this form of paræsthesia; but I gravely doubt if there be any closer relationship between it and the lithæmic diathesis, than there is between lithæmia and the development of neurasthenia or some of the vaso-motor neuroses. Lithæmia in itself is the result of deficient oxidation of proteid matters in the blood; and as the manifestations of this form of paræsthesia is through the peripheral blood-vessels it is extremely plausible that the paræsthesia is not the result of the lithæmia but one of the factors on which the lithæmia itself is dependent. We are forced to this conclusion by the results of medication directed to the lithæmic state alone, which is very unsatisfactory. The other hæmatotoxic conditions of gout and rheumatism do not seem to have any causative relationship. Bodily fatigue, over-exertion, poor nourishment and ventilation, lactation and in fact anything that lowers the vigor and health of the body, are powerful predisposing factors. The hands are the parts affected most frequently. In 43 cases both hands were affected alone in more than 50 per cent. of the cases; all four extremities in nine cases, and one extremity in ten cases. When the paræsthesiæ came in one extremity at a time, I do not mean to say that this one part was solely the one affected. The following case illustrates how the sensations would leave one hand and go to the other.

Mrs. A., forty-one years old, American, married, and does house-work. Personal and family history good. She has never had a severe sickness except uterine inflammation and metrorrhagia after a miscarriage. For the past four years she has been troubled with boring, heavy, "pins and needles" sensations in the hands, and less in the forearms. She never had the sensation in both hands at the same time, but frequently when it passes away from one hand it appears in the other. She noticed this trouble for the first time shortly after the miscarriage already mentioned. These tingling and dumb, sleeping sensations in her hand awaken her early in the morning, and rubbing, squeezing and using her hands does not seem to dissipate the sensations. The greatest relief is obtained by wrapping her hands in flannel and applying dry heat. The paræsthesiæ are slightly more troublesome in wet weather; it never affects the lower extremities. If she washes to-day the painful sensations to-morrow would be almost unbearable. She suffers considerably from headache. Before concluding what I have to say about the etiology of this form of paræsthesia, I wish to refer again to the possibility that metorrhagia has more than a casual relationship in precipitating this affection and in helping to keep it up after it occurs. Of the 34 women in this series of cases no fewer than 12 gave a history of flooding at some time, before or during the tenancy of the paræsthesiæ. I do not wish to be quoted as saying that flooding is the cause of this paræsthesia, but that it sometimes appears to be an etiological factor. The menopause I do not find to stand in close relationship although the preponderance of cases is between thirty-five and forty-five years. These patients are not necessarily at the change of life, and as a matter of fact most of them are not.

One of the most aggravating cases that we have had to treat at the clinic was that of a lady sixty years old who gave a typical history corresponding to the one above, except that the paræsthesiæ affected all the extremities. This patient, notwithstanding her age, was menstruating regularly. Two cases (women) gave a history of excessive sexual intercourse, but with "withdrawal" on the part of their husbands. This had been practised for some years to avoid conception. It is admitted by gynæcologists that indulgence in this practice is followed by a condition resembling sub-involution and metrorrhagia as a natural sequence.

Taking these etiological factors into consideration, one is led to the question as to what the probable seat of the trouble may be. Nearly every one who has written on paræsthesiæ has had something to say on this point, in which he differed from others. It seems to me that we can exclude any trouble in the central nervous system and spinal cord. It is scarcely necessary for me to enter into details for the basis of this statement.

I am of the opinion that this form of paræsthesiæ is due to defective innervation in the blood-vessels which causes a low degree of blood-pressure and lack of proper blood-supply to the terminal branches of the peripheral sensorial nerves. That is, the vascular changes may be secondary to central exhaustion. The perception of paræsthesiæ is, of course, a central process. It is probable that frequently in the beginning this paræsthesia is set up in a predisposed neurotic subject, and as a result of the combined influence of central cortical over-stimulation (from the reception of the peripheral impressions) and the suffering of the patient, acts upon ganglionic cells in certain areas of the cortex and produces exhaustion. This may be called a functional exhaustion similar to that produced and observed by Hodge. The causative factors of this form of paræsthesia are extremely chronic and remedial measures when not associated with rest are rarely beneficial. While rest, mental and bodily, is frequently followed by great relief I am therefore inclined to agree with Laquer that it may be an exhaustion neurosis.

On a few of these patients I instituted some experiments for the purpose of corroborating the opinion that vascular changes may start anew the paræsthesiæ. If the patient, whose history I have detailed at the beginning of this paper, was made to hold both hands above the head the paræsthesiæ would set in with such intolerable severity after four minutes that she could not keep them in this position. If one hand was held above the head and the other by the side the paræsthesiæ would come on in the uplifted hand while the other hand would remain free. Putnam has noticed a similar condition in some of his patients. After the hands had been elevated for a few minutes and the paræsthesiæ had appeared and they were then allowed to hang down they could be seen to become dusky in color and swollen-like, showing that there was more or less vascular congestion following a transient anæmia.

Another patient who had paræsthesiæ in the hands alone, had her hands dipped in water of the ordinary temperature, and allowed to remain there for from five to ten minutes, with no resulting paræsthesiæ. But if the hands were first dipped in very hot water and then in iced water the tingling sensations would come on after a few minutes. If the order was reversed, that is putting one hand in the cold water first and the hot water afterwards, the paræsthesiæ did not seem to occur.

Another patient, a male, shoemaker, who suffered from paræsthesiæ in all four extremities, was experimented on with Fleming's Tincture of Aconite, a drug which in small doses is known to lower blood-pressure and produce a lessened amount of blood, particularly to the periphery of the body with a high degree of certainty. One drop of this tincture was given every fifteen minutes to this patient when he was free from the paræsthesiæ, and almost invariably every time he was subjected to this treatment, by the time he had received the fourth dose the paræthesiæ would occur.

It was not, I believe, the tingling which is caused by the absorption of a considerable amount of aconite into the system for two reasons: first, the tingling that results from large doses of aconite occurs in all parts of the body in the order of their sensitiveness as determined by Weber; and secondly, because in the same patient, veratrum viride, a drug which does not produce tingling, was followed in its administration by similar results to those obtained by aconite. Such experiments are in no way conclusive, but they are suggestive as to the probable conditions antecedent to the development of the paræsthesiæ. The fact that the hour out of the twenty-four when these sensations come on with considerable certainty is in the early morning, a time when the ebb of life is at its lowest tide and the blood-pressure registering nearest the base line, is another bit of evidence in favor of the idea that the essential preceding condition in the development of the paræsthesiæ is a vascular one. That it occurs when the patient lies down as, for instance, in the day-time, and after use of the parts, as in working, scrubbing or needle-work, etc., is not inconsistent with this line of thought.

I cannot agree with some writers on the subject who say "we shall not have to look far for a solution of this difficulty. It is evident that we have faulty or imperfect actions in some of the more important tissues or structures of the ecomomy, such as degenerative changes in the vessels, etc." From a rather careful study of the vascular system in these patients with the aid of the sphygnograph I must say that it is but rarely that I have found any indications of arterial degeneration.

Before saying a word in regard to the treatment which has been found most successful with these patients I would like to suggest a classification of the paræsthesic neurosis, and illustrate each of the divisions by citing a typical case. Of course, it will be understood that I rigidly exclude the neuralgias, neuritis, ignipedites, etc. The following classification is principally on an etiological basis:

(1) Emotional.
(2) Mental.
(3) Neurasthenic.
(4) Toxic.
(5) Waking numbness.
(6) The one under consideration which may be called an occupation paræsthesiæ, so often is it associated with a certain class of occupations.

As an example of the first form, I cannot do better than to present the notes of a case reported by Dr. Dana. A gentleman forty years old, a cotton-broker, suffered from almost constant sensations of numbness, prickling, etc., of the left arm and hand, extending up to the elbow. The symptoms annoyed him to the last degree. There was no anæsthesia or objective changes in the hand, and the patient was in good general health. He was an excessive smoker, but interdicting this and subjecting him to various forms of treatment was followed by no benefit. Finally, after some months cotton went up and the affection gradually left him.

As a type of the paræsthesiæ depending upon a disordered mental state the following case of galeanthropy or *Katzensucht*, as it is termed by the Germans, may be related. A young woman twenty-seven years old, who had inherited marked neurotic taint, her mother having died of cerebral softening at forty years old, one aunt of insanity at thirty-three years old, and one great-aunt had epilepsy. The patient herself was always very nervous when a child. For a considerable time she had complained of inability to sleep well, and in the morning of most distressing sensations; tingling, numb, pinching sensations in the hands and forearms, particularly the right, and in the feet worse than in the hands. These sensations persisted most of the day, but disappeared toward evening. In addition to the paræsthesiæ of the extremities she says there is an area about as large as the hand above her right buttock where the sensations also appear. After suffering from these paræsthesiæ for some time she had a transient attack of the mania known as galeanthropy. The attack come on in the following way: After some very trying domestic infelicities she was left alone one day, and was sitting brewing her troubles, when she noticed that a picture of the "Father of his Country," hanging on the wall on the opposite side of the room, suddenly began to misbehave in a most remarkable manner. Then all the other pictures on the walls followed this illustrious example. This kept up for some time; and then she thought she was being transformed into a cat; and after that she acted like a cat, walked on all fours, spit and scratched when any one came near her, would not let them undress her or put her to bed, would eat only off the floor, tried to scramble up the bed-posts and sides of the room like a cat, etc. She imagined she was consorting with other felines, and, in fact, gave quite a typical history of this form of alienation. After quite a protracted treatment this patient recovered from her mental affection, though she still has the paræsthesiæ occasionally.

The neurasthenic form is really quite common, and it is unnecessary to quote a very elaborate history. The following case seen in private practice may be taken as an example:

X., a married lady of forty-four years, was bred a lady of leisure, but circumstances at present compel her to manœuvre with a small amount of money invested in a business in order to make a living. As a result, she has developed quite a typical neurasthenic condition of the cerebral type. She has head-pressure and sensations, morbid fears and dread, loss of strength and ambition, and, added to this, paræsthesiæ of the hands and feet, which are extremely distressing. When the neurasthenic symptoms have their good days, the paræthesiæ are forgotten, and the reverse.

The toxic forms of paræsthesiæ, of which we see so many examples, are, I believe, mostly the indications of beginning multiple neuritis. Frequently, however, they do not go to extensive changes in the nerves and muscles, and we see the manifestations of toxicity only in the paræsthesiæ. Many writers have spoken of this form of paræsthesiæ, and it is not infrequently associated with malarial poisoning, moderate alcoholism, and the ingestion of other poisons. In the following case it resulted from excessive tea-drinking:

C. B., female, fifty years old, native of England, married. Has had nine children. Has always drank a glass or two of beer a day, but drinks mostly tea, which is taken strong and often. She thinks seven or eight cups a day would be a low average. She says she keeps the tea on all the time, and frequently takes it in place of food. She reached the menopause about three years ago. For upwards of two years she has complained of burning, gnawing, prickling sensations in the feet and legs. Sometimes these sensations are really very painful. More recently she has felt similar sensations in the arms from the elbows down, and in the face. All around her mouth she gets prickling "pins and needles" sensations; and her face gets a sort of numb, wooden feeling in it, so that she has to put up her hand to feel if her face is really there. The appetite is fairly good, bowels constipated, and she suffers considerably from frontal headache and gets low spirited often. This patient, when tea and beer were entirely forbidden her, and she was put upon a nutritious diet with nux vomica and out-door exercise, improved steadily, so that now she is practically well.

Several other cases could be cited where the paræsthesiæ have disappeared after a prolonged treatment with anti-malarials.

Under the title of "Waking Numbness," Dr. A. H. Smith has described four cases of a condition which would seem to be a form of paræsthesiæ, to which is added more or less complete temporary abolition of motility. In a case presenting himself at the clinic, a barber thirty years old, of strong neuropathic predisposition, complained that when arising in the morning his hands were powerless, feeling as if he "had bowled tenpins too long the night before and had no strength in them," and with this, tingling, numb sensations. He had been in the habit of taking a nap during the slack hours in the afternoon, but he was obliged to forego indulging himself in this direction, as the numb feelings were sure to come on after awakening. This man improved under the use of galvanism, tonics, invigorating baths and out-door exercise, but he was lost sight of before he was completely well.

Then there are the paræsthesiæ that come with rheumatism, gout, arthritis, etc.; but they should be included under the division of toxic paræsthesiæ. We have had many good examples of the paræsthesiæ resulting from a combination of rheumatism, bad nutrition and depravity. One young lady, a dancer in a well-known ballet extravanganza, complained of a condition very much resembling the history just detailed. She had less periodical and more continual impairment of strength than did the last patient. She was very anæmic, run down, badly nourished, kept late hours, used enormous amounts of cosmetics containing lead, and had previously suffered from rheumatism. Her improvement was very slow, on account of the fact that necessity compelled her to keep on with her occupation and the harmful prerequisites which were incident to her business.

These illustrative cases of paræsthesiæ have been detailed for the purpose of showing that the paræsthesic neurosis presents itself under several different forms; and, with some license, they can be grouped as I have indicated. Recently, Schultze, of Bonn, has published an article dealing with the form of paræsthesiæ that I have considered in the first part of this paper. He has given to it the title of "Acro-paræsthesiæ." If I am right in my contention for the above classification, this term is not sufficiently definite to warrant admitting it to our nomenclature. Acro-paræsthesiæ simply means paræsthesiæ of the extremities. You will admit that the forms of paræsthesiæ that I have mentioned are of real occurrence, and could probably duplicate the cases I have detailed by a large number of cases.

Regarding the therapeutics of this special form of paræsthesiæ I can only admit and concur in what all previous writers have stated, namely, that we have no specific remedy. In my experience, prolonged rest has been the most important beneficial agent, particularly when restorative treatment is added.

I consider the administration of neurotics and depressants, such as antipyrin, phenacetin and the like, positively harmful. I have not found it necessary to treat specially and individually the digestive tract, for, as has before been stated, it is not customary to find it seriously at fault. Too much emphasis cannot be laid upon the point that everything which tends to exhaust these patients or in any way interfere with their vitality should be controverted. The use of the faradic current, in the shape of the faradic local bath, as recommended by Laquer, seemed to be very beneficial in two cases that have been under continuous treatment during the past winter. In fact, I may say that one of these patients has apparently recovered under this treatment after she had acted upon the advice to wean her baby, which she had been nursing for a long time. The galvanic current has not given anything more than temporary relief. So far as treatment has been given with directness to combat any lithæmic diseases that have been supposed to exist, I must say candidly that I have seen no startling results. Some of these patients have been on spring water and mineral acids without any beneficial results.

The plan of treatment which is most beneficial is regulation of the diet (particularly by limitation of the nitrogenous food-stuffs), quiet out-door life, change of occupations and habits, and the administration of restoratives.

A list of the literature bearing on this subject is herewith appended:

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APPENDICITIS FROM THE POINT OF VIEW OF THE PHYSICIAN.[1]

BY [illegible], A.M., M.D., NEW HAVEN, CONN.

Recent years have witnessed great advances in our knowledge of inflammatory affections in the neighborhood of the cæcum. The vermiform appendix now occupies a position of great pathological interest and importance. The proper management of inflammation of this organ is a subject in regard to which eminent authorities still hold very dissimilar opinions. Every practitioner is likely at any time — it may be to-morrow, or next week, or next year — to meet a case of appendicitis, and to be confronted with the question: What does modern science teach should be done for the patient?

The responsibility of the practitioner in these cases can scarcely be overestimated, because the danger of a fatal result is so great, and because the life of the patient so often depends upon his decision. The intrinsic tendency to recovery is slight.

In post-mortem examinations it is possible to distinguish cases in which the disease is plainly due to the presence of a foreign body, and those in which it is impossible to find any such cause. Cases in which the inflammation is not dependent upon a foreign body, and which are distinguished as catarrhal, are the ones in which the symptoms sometimes subside in two or three days. Frequently, however, by the death of tissue, they become closely allied, as regards their ultimate results, to cases of the first class, for the dead tissue is practically a foreign body.

The results of appendicitis are various. Sometimes the inflammation quickly undergoes resolution, the symptoms subside, and the patient gets well without appreciating the danger through which he has passed. In other cases the peritoneal cavity early becomes infected, and general peritonitis and, as a rule, death quickly supervene. In still other cases a chronic abscess forms. This may burst and cause general peritonitis and death; or it may undergo spontaneous evacuation and result in death or recovery; or it may be opened by the surgeon, and terminate in death or recovery.

From an etiological, as well as from a pathological point of view it is therefore easy to see that the patient with appendicitis has many chances of his disease terminating fatally. It is the obvious duty of the physician to remove his patient as far as possible from the chances of a fatal result.

Before pus has formed, before ulceration has perforated the coats of the appendix, and before the appendix has become gangrenous and sloughed, the danger to the patient is a prospective one. During this stage of the malady, the physician must adopt a course of active medical treatment. Morphine should be administered in large doses subcutaneously, and should be repeated at short intervals until the pain is entirely relieved. A mustard plaster should be applied until the skin is reddened, and this should be followed by hot flaxseed poultices. A saline cathartic — sulphate of magnesia, in drachm doses, is the best — should be repeated every hour or two, until copious watery movements from the bowels occur. These measures tend to relieve the congestion of the intestinal mucous membrane, and to modify the inflammatory action. If the case is one of so-called catarrhal appendicitis, in which there is no foreign body and no abnormal concretion giving rise to the inflammatory process, the inflammation may undergo speedy resolution and the patient quickly become convalescent. But, on the other hand, resolution may not ensue, and the patient may not get well.

If, however, the trouble is caused by a foreign body, or an intestinal concretion, the measures above indicated will do very little good, except to keep the patient quiet, while the doctor is thinking what to do next.

Cases of this kind, and cases of catarrhal appendicitis, which have not undergone resolution, may be classed together. They are of great gravity and importance. Unfortunately, during the first stage of the disease it is generally impossible to tell just what the cause of the trouble is. It is, therefore, playing a game in which the odds are strongly against both the patient and the physician, to continue indefinitely the treatment which I have outlined. The most important point is to decide how long this treatment may be safely continued.

Statistics will in time doubtless settle the question with reasonable certainty. They have not done so yet. It is, however, known that, in many cases, the dangerous results, suppuration, sloughing and perforation occur very quickly, sometimes as early as the third or fourth day. The risks of temporizing with a suppurating, gangrenous or perforated appendix are so great that no man who has any conscience ought to hesitate for a moment to advise its removal. The sun has nearly set upon the day in which the surgeon boasts with pride, as of an important operation, of having incised a large perityphlitic abscess. The day will soon dawn — it has already dawned for some — on which such a performance will be mentioned only to illustrate the carelessness, the stupidity or the mistake of the man who watched the abscess develop.

The question then is: When shall the diseased appendix be removed? It has been the fashion for the surgeon to say: You must call upon me to tell you when the operation should be done. This is pernicious teaching. It is time that the physician should turn about, and say to the surgeon: when I want you, I will send for you. When I send for you, bring your ether cone and your knife.

As I have said statistics have not yet told us just when to operate. But the daily newspapers have told, to him who reads between the lines, that the patients die when the operation is delayed. It is certain that the fourth day of the disease is, in some cases, too late to operate and save the patient's life. There is very little satisfaction in operating and then seeing the patient die. The third day is, to many of these cases, a critical one.

To return to the former question: How long may medical treatment be continued? My reply is for not more than twenty-four hours, and not later than forty-eight hours, from the commencement of the disease, unless distinct evidence of positive and continuous improvement is observed. If it is not observed, call upon a surgeon to operate, and call upon one who will operate. In this way alone will you do your duty by your patient.

I doubt not that some one, who desires to pose ostentatiously as a conservative, will jump up, when I sit down, and tell you that I am young and inexperienced. Concerning these points I have nothing to say.

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[1] [illegible]

What I wish to impress upon you is that the experience of the profession during the last few years teaches that an inflamed appendix should be removed after forty-eight hours, if marked evidences of resolution of the inflammation have not appeared by that time. To be sure all patients, who are not operated upon, will not die; but many will die, if the operation is postponed much later than the period mentioned. If you think that I am wrong, tell me: Have you ever heard of any one who removed an inflamed appendix, who was sorry because he had not postponed the operation until a later day? You know that many fathers and mothers have wept bitterly over the loss of a loved child, who died because the surgeon did not operate until the disease had passed beyond the range of his resources.

Now, my dear brother physician, do not try to shirk your own individual duty and responsibility, by calling in a surgeon and throwing the responsibility upon him; and, if he sacrifices the patient's life, do not sit stroking your beard with a look of sanctimonious resignation upon your face, while you explain that the eminent authority, who was called in consultation, advised postponing the operation, or against operating at all. Call a man who will operate at once, and who will operate well, and call him early before the case gets complicated.

Do I hear some one say that the operation increases the danger of the patient's dying? Let me ask again: How many of you have heard of any patients who have died from the disease or the operation, when the appendix was removed before suppuration, gangrene or perforation had occurred? I am sure that such cases are exceptional. I advise you to adopt a course which brings safety to your patient, which removes him from very great danger to his life, or at least from a prolonged and dangerous illness, by a surgical procedure, which increases very little his liability to death.

This is genuine conservative surgery. I speak not as a surgeon who is anxious to use his knife at every possible opportunity, but as a physician who recognizes the duty of deciding what is best for his patient, and of making every effort to have the right thing done at the right time.

One suggestion has been made in this connection which is deserving of respectful consideration. Some have advised that temporizing measures should be employed, in the hope that the acute symptoms may subside, and that, after they have disappeared, the operation should be performed. The danger of the operation is less, they claim, after active inflammation has passed away, than while it is still present.

There are several objections to following this plan. In the first place it is very questionable if it is wise to operate upon a patient after his first attack, if all symptoms of the trouble have passed away, for it is well recognized that many persons suffer from a single attack, and have no recurrence. Although the danger from the operation is not very great, yet it is sufficiently great to lead us to advise any one, with considerable hesitation, to submit to the operation, when he is in apparently good health. A better plan is, after the patient has recovered from the primary attack, to warn him of the danger of a subsequent attack, and, if the second attack ever occurs, to advise immediate early operation.

Another objection to the plan of waiting for the subsidence of the acute symptoms is that it is impossible to distinguish cases of catarrhal appendicitis, which may undergo resolution, from cases due to the presence of a foreign body, which rarely undergo resolution. Most cases of the latter variety, and many of the former, do not undergo resolution, but speedily getting worse, pass beyond the first stage, and become complicated by suppuration, perforation or gangrene. These complications are very serious. They increase very greatly the difficulty and danger of operation, and very often render a fatal result inevitable.

For these reasons there seems no occasion to question the wisdom of the rule already laid down: That the appendix should be removed within forty-eight hours of the commencement of inflammation of the organ, unless marked improvement is observed after twenty-four hours of medical treatment.

The risk of a fatal result being hastened by an operation, carefully performed, while the case is still uncomplicated, is very slight compared with the increased danger of death if the operation is delayed until an abscess has formed, or the tissues have sloughed, or ulceration has resulted in perforation.

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Clinical Department.

A CASE OF PREGNANCY COMPLICATED BY PNEUMONIA AND EMPYEMA.

BY GEORGE A. CRAIGIN, M.D.

I HAVE ventured to record the following case because it is rather unusual; few are reported; and a number of practical questions are suggested.

The patient was a married woman, thirty-four years old. She was small of stature, but well developed and nourished. She had had three children; all now living and well. Her previous history was excellent; no illness of any account.

The early part of the present trouble is a little obscure. About the middle of December, 1891, she was taken suddenly ill with high fever and severe pulmonary symptoms, suggestive of *la grippe* with pneumonia. She had been ill nearly a week when I saw her on December 24th.

I found her sitting up in bed, in great distress; the eyes suffused; the face flushed a dull red; moderate cyanosis. Respirations shallow, 48 per minute, the movement most marked at the left apex; the pulse 140, regular, full, of fair strength; temperature 103.4° F.

The condition of the lung on the right side was doubtful. The respiratory movement was imperfect; the resonance fair; respiratory murmur faint, having in the lower half very little vesicular quality, and obscured by numerous sticky râles (possibly a resolving pneumonia). On the left side the resonance was fair in the upper two-thirds; dull at the base, front and back. The respiratory sounds were normal at the apex, faint at the base, with diminished voice — apparently due to a moderate pleural effusion. The abdomen was somewhat enlarged by the pregnant uterus at five to six months.

The patient's chief complaint was of great distress for breath and a constant harassing cough, so that she could not sleep and could scarcely speak. The severe dyspnœa was at first controlled very satisfactorily by

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[1] Read before the Boston Society for Medical Observation, April 3, 1893.

nitroglycerine (gr. [illegible]) every four hours; but in a few days the effect wore off.

During the first forty-eight hours the temperature fell by crisis, the pulse going with it; but the respirations remained high. The fall of temperature and pulse was probably due to the crisis of a pneumonic process; but a reason for the sustained high rate of respiration was found in a steadily increasing effusion in the left pleural cavity. By the 29th of December, the twelfth day of the disease, this had reached the third rib in front, and the heart's apex had been pushed under the sternum.

The condition of the right lung remained unchanged, apparently useful only at the apex. The left chest was aspirated in the seventh space, below the angle of the scapula; and forty-five ounces of sero-pus withdrawn (on standing one-eighth pus).

The operation gave a little relief to the distressed breathing; but cough became exceedingly troublesome, the sputum thin and frothy (perhaps from œdema). Repeated doses of morphia (gr. $\frac{1}{8}$), with atropia (gr. $\frac{1}{150}$), gave only short naps. She had to sit up all the time. Yet strength and general condition seemed good.

The temperature, which fell to normal on the morning of the aspiration, never rose again above 100° F. The pulse remained over 110, often 120, during the following week; and the respirations ran between 45 and 60, as a rule. The symptoms remained much the same, though dyspnœa and cyanosis became more marked as the effusion increased.

By January 8th the left chest was again filled to the third rib. Forty ounces of pus were aspirated at the same place as before. That night severe stabbing pains on respiration were felt in the right side, and retraction of the lower intercostal spaces during inspiration was noted. The physical signs on this side remained the same.

In spite of everything, the patient's strength held out well, and she was able to walk about the room when her bed was being aired and made up.

At the end of ten days (January 19th) the chest was full as before; but during this time the patient had grown steadily worse. Dyspnœa was severe, the respirations during the last week scarcely ever falling below 60 day or night. Sleep was almost impossible. There was constant epigastric distress, much worse after the lightest meal of milk or broth; so that very little nourishment was taken. Cyanosis grew marked — the face gray and anxious. The pulse fell some in rate, but became irregular. The sputum was considerable — thick, muco-purulent. The general strength was failing noticeably. She was now over six months pregnant, and fœtal movements were distinctly felt.

It was evident that further aspiration would be useless, and that free drainage should be secured at once, to relieve the embarrassed lungs and heart. Dr. Prescott kindly saw the patient with me and agreed about the operation.

Primary anæsthesia was used. There was very little shock. Within twelve minutes of starting the ether the bandage was on, and the patient perfectly conscious. A good-sized double rubber drainage-tube was put through an one-and-a-half-inch incision in the seventh space, axillary line. There was a large amount of thick pus.

There was a return of the severe pain in the right side, as after the second aspiration, and the cough became very troublesome.

Five days after this the note says: "Has been considerably relieved by the operation. Epigastric distress nearly gone; appetite a little better; face not as anxious; color improved. The cough has been very hard, and has not yielded to morphia (gr. $\frac{1}{8}$) or codeia (gr. $\frac{1}{4}$) every two hours (by mouth)."

So violent, in fact, was the cough that air was forced into the loose tissue about the wound, and soon there was a general emphysema from the zygoma over cheek, neck, shoulder, back and side to the buttocks. The rubber shield holding the drainage-tube was lifted from the chest wall with rolls of gauze. As soon as the wound surface had granulated well, the air ceased entering, and the emphysema gradually disappeared without having caused any real discomfort. The tubes were shortened occasionally, and drainage was very good. Irrigation was not practised.

After the operation the temperature scarcely ever rose to normal, running between 97° and 98° F. The pulse, however, for ten days remained pretty constantly at 120, morning and night; was rather soft, fairly regular, and not influenced by digitalis or strophanthus. The respirations also remained rapid as ever, being 50 or 60 all the time.

The appetite was poor, and there began to be considerable epigastric distress again about January 30th. Up to this time, although failure in strength had been steady, it was not as rapid as before the operation; and there had been a decided increase in comfort. The fœtal movements were strong.

The note on February 2d says: "Appetite failing. Expression anxious. Gradual emaciation. Sweating. Pain in left side, front and back, and in wound, increased by a troublesome cough, which is aggravated on lying down. Sputum abundant — thick, muco-purulent. Examination showed the apices fairly clear — the right base same as usual, the heart in nearly normal position. Drainage free. Considerable purulent discharge."

During the greater part of February the pulse and respiration remained almost unchanged. For more than eight weeks the pulse had averaged over 110 in the morning, and the respiration over 50. Patient's general condition varied from time to time. Profuse sweats were not infrequent, with great exhaustion; and she about gave up hope of recovering or even living to have a full-term child.

But toward the end of February and in March there was improvement. The pulse gradually came down, grew steadier and stronger; the respirations, by the middle of March, had dropped to 30; the appetite came back; the face had better color; the expression was brighter; and the cough and pain were much diminished. The discharge had decreased, till on March 12th the notes show an average of about two drachms in twenty-four hours, and the descent of the lung made it difficult to retain the drainage-tube. The sweating was considerable at times. Judging from the fœtal movements, the child was strong.

An examination of the sputum by Dr. Greene showed numerous tubercle bacilli.

The physical signs in the right lung remained as before — clearer above than below, where numerous sticky râles obscured everything. There was some retraction of the intercostal spaces still. On the left side there was a gradual increase of vesicular quality, and in neither apex any definite sign of consolidation.

The course of things was uneventful till March 26th when after an easy labor she gave birth to a strong, good-sized child, presumably full-term.

The tube was removed April 11th.

On May 11th there was still a little discharge. At this time the right lung seemed clear, and the left sound to the fourth space axillary, lower in back. The patient was now up and doing light work, with only a little cough.

During the summer she was sent off into the country, and improved rapidly. The child was breast-fed from the beginning.

I have seen her again quite recently. Appetite, strength and flesh are good as ever. There is occasional pain independent of respiration, both in the left chest (through the præcardium to the back), and in the upper part of the right chest. There is occasional dry cough. The expansion is rather deficient on the left side, though still fair. Fremitus present, but relatively diminished. Vesicular respiration is heard to a point an inch below the wound, front and back, though fainter than above, and relatively less than on the right side. The voice sounds correspond. The percussion note is duller than on the right, but there is resonance below the wound, corresponding to the respiratory murmur. There is no trouble at the scar. Respirations are 18–20, full and free; pulse 82; the heart in the normal position. The child is living and well though rather delicate looking.

Comparing this case with the reports and statistics of others, there are a number of points worthy of notice. Opinions concerning the relations of pneumonia, pleuritic disease and pulmonary tuberculosis to pregnancy are much at variance; and consequently the matter of treatment in certain important points is also undetermined.

Pneumonia in pregnant women does not appear to be more or less frequent than in women of the same age and social state who are not pregnant. It is important, however, to know whether pregnancy has an appreciable effect on the acute disease. This would be difficult to determine unless the effects were very marked and constant, there being so great a variation in degree, according to the particular season, the treatment, and the constitution, habits, and previous history of the patient.

In the case reported, the pneumonia (if it were such) appears to have run a natural course, the temperature dropping by crisis on the eighth day. A number of observers, however, consider that the onset is liable to be more severe and the fever higher in pregnancy; and others that the farther advanced in pregnancy the greater is the extent of lung involved, and, therefore, dyspnœa, etc.

The effect of pneumonia on pregnancy should be more easily determined.

In our case the effect was *nil;* but it should be noted that the attack came on in the sixth month. While there is contradiction between the figures of the early and more recent observers, the general opinion now is that the later the disease in pregnancy, the greater the liability to disturbance or interruption of pregnancy. Thus, out of a series of 17 cases, 10 had pneumonia before the seventh month, and but three aborted; while of six which had pneumonia after this period and before term, four miscarried. (The other cases were taken ill at term.)

There have been numerous attempts to explain the cause of interruption of pregnancy in pneumonia, and the assigned causes are almost as numerous. Among these may be mentioned hyperpyrexia, hydræmia, uterine contractions stimulated by imperfectly oxygenated blood or severe coughing, and death of the child from various causes. Death of the child *in utero* is ascribed to hyperpyrexia, want of oxygen, hydræmia of mother, catarrhal pneumonia of child from inhalation due to asphyxia, insufficient supply of sodium chloride in maternal blood, and (in the light of recent investigations) acute infection by the pneumococcus through the placental circulation.

The prognosis for the child is poor, even when it is born alive, after being carried to term. Thus Wells reports eleven cases of his own where the pneumonia occurred in four during the first three months, and later in the other cases, with three miscarriages, and one induced labor. All the children were born alive; yet but one lived for any length of time after birth.

The prognosis for the mother appears from statistics to be decidedly worse when pregnancy has been interrupted, the danger increasing with the advance of pregnancy. Some tables give a mortality as high as 17 out of 19; one gives 71 out of 104; others lower. Cause and effect are liable to be confused here in drawing inferences from figures, as it is probable that the pneumonia itself was of a much severer type in most of the cases where pregnancy was interrupted.

The prompt fall of the temperature in the case just reported soon relieved me of considerable anxiety, but there was time enough given to suggest a number of questions which might demand an answer in a less favorable case:

(1) Does the distended abdomen of pregnancy diminish the air space in the thorax to any extent, so that emptying the uterus would relieve dyspnœa?

(2) With continued high temperature and increasing dyspnœa and cardiac weakness, would induced labor be advisable? or, if miscarriage is threatened, should every effort be made to stop it?

(3) In case the child were viable, but showed signs of failing strength, would induction of labor be justifiable whether the mother's condition were favorable or not?

It is evident from my case, that, in spite of the pneumococcus, moderately high fever, great dyspnœa and racking cough, pregnancy at five to six months may continue smoothly without any appreciable effect on the child.

Pleurisy complicating pneumonia is very frequent; and pleurisy with effusion not rare, even in an early stage; but empyema is rare.

Verneuil has said that the pregnant woman has a distinct tendency toward pus formation. If this is so, the case reported is one in point. As a considerable proportion of the fluid drawn at the first aspiration was pus, it is evident the effusion was purulent at an early date. It was noticeable that neither aspiration was followed by the relief which might have been expected from the withdrawal of so much fluid. It is probable, however, that the distress and danger would have rapidly increased had the effusion been allowed to accumulate further. The permanent drainage itself seemed rather to hold things in check than to give very definite relief.

As to the propriety of aspirating or draining whenever there are the usual indications independent of pregnancy, it seems to me there can be little question. Anæsthetics are given and operations performed so frequently during pregnancy without deleterious effect, that little is to be apprehended. Shock and severe pain are probably the most to be feared. Particular attention would naturally be given to the usual precaution against emptying the pleural cavity too rapidly or too thoroughly. As to giving an anæsthetic there may be difference of opinion. Profound anæsthesia when there is any embarrassment to breathing or circulation is undoubtedly dangerous; and in a pregnant woman the subsequent nausea and retching might increase the danger of miscarriage; but the rapid primary anæsthesia, which is all that should be required for the drainage operation (unless resection of the ribs were done), has little danger; and that is overbalanced by saving the patient from the pain and fright of a cutting operation. Moreover, the operator can be much more deliberate and will run less danger of cutting intercostal vessels or wounding the diaphragm.

The persistence, for eight weeks, or more, of respirations over 50 and of pulse at 120 on the average is remarkable; but even more so is the fact that pregnancy should have progressed so evenly in spite of marked cyanosis, distressing dyspnœa, vomiting, and a cough so frequent and violent, together with progressive failure of strength, loss of flesh, sweating, etc.

When these became marked and the sputum was found to contain tubercle bacilli the outlook was grave. The question arose whether it might not be better, for mother and child, to induce labor, as there seemed a possibility of her failing so rapidly that both might die.

If it were established what influence pregnancy, abortion, miscarriage and labor have on the course of pulmonary tuberculosis, it would be easy to determine a line of treatment in such cases; but, strange to say, opinions are far from unanimous in this comparatively familiar field.

It is important to know, whether tuberculous patients become pregnant less often than others; whether pregnant women are more or less liable to tuberculosis; whether pregnancy hastens or retards the tubercular disease; whether the course is more precipitate after confinement, or induced, or premature labor.

Evidently these questions can best be settled by the experience of men with large private practice rather than by hospital statistics, where little is known of previous and subsequent history.

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CANNABIS INDICA.

[illegible], M.D.

Extract of cannabis indica is one of those drugs which always possess a great fascination for the incipient experimental pharmacologist (very frequently a medical student); and yet there is perhaps even less to be said as to its mode of action than of its immensely more powerful congener, opium.

It is strange that with such strongly marked and highly characteristic subjective symptoms, recognized by every one who has experimented upon himself with it, that is, the immense apparent prolongation of space and time; and the double consciousness, so interesting in its possible relations to hypnotism, that this drug has awakened so little attention on the part of the modern school of experimental psychology.

It has, however, notwithstanding the interest attaching to it, never attained an important position as a hypnotic; probably for two reasons, the first and most important being that it is far from being trustworthy in this direction, and, secondly, that the notorious uncertainty of its preparations has thrown difficulties in the way of exact experiments or the comparison of results. It has, however, occasionally been found useful, especially if given with a corrigent like bromide to counteract its exciting effects.

An observation made by accident led me to inquire whether it could not be profitably employed for a purpose for which the physician is not often asked to prescribe, and for which, so far as I know, few if any drugs have been recommended.

It was found that a patient for whom this drug had been ordered for the relief of long-continued headache (which, by the way, it failed to accomplish) had ceased to suffer, after this prescription was made, from the bad dreams that had previously annoyed her. Acting upon this hint, it was given to one or two others who had made similar complaints, with similar results, that is, the character of the dreams changed and became agreeable.[1]

The idea which first comes into the physician's mind when he hears this complaint is likely to be that of the traditional mince-pie, or, in other words, he is very apt to attribute all bad dreams, as undoubtedly many of them ought to be, to a more or less serious indigestion or an uneasy conscience. But as it is not probable that all cases have so simple an explanation, and may not yield, any more than the insomnia which they accompany or replace, either to diet, laxatives, tonics or sincere repentance, the possibility of dealing effectually with the symptom may occasionally be welcome.

This may be a small matter; but when good restful sleep is likely to be an important or even the essential part of the cure, it is not entirely to be neglected. How often does it happen that when the patient is questioned whether he slept well, the answer comes, "Oh, I slept! but it didn't do me any good. I worked harder in my sleep than I do when I am awake."

I write this in the hope that others, as opportunity offers, may try whether this effect is a real and tolerably constant one, or whether my experience was one of coincidences only.

I may recall here the remark of Fitzhugh Ludlow, speaking, however, of much larger doses than are to be employed for this purpose, to the effect that when a second dose is taken before the effects of the first have passed off, the visions are invariably terrible.

The drug should not be given in so-called "full doses," that is, not sufficiently large to produce effects obvious to any one but the patient, and hardly even that, but just short of it. For example, if experiments have shown that ten drops of the preparation to be used gives rise, in the average person, to some excitement, rapid talking, laughter, double consciousness, etc., let the dose for the purpose we are considering be, say, six or seven. I have found that a very convenient plan of administration, admitting of varying the dosage much more easily than by the preparation of pills, which are exceedingly difficult to divide and to make up, is to prepare an alcoholic solution of the extract, which may then be dropped in the desired quantity upon a spoonful of granulated sugar. The dose is to be determined afresh for each fresh parcel of the drug used.

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[1] [illegible] noted [illegible] that occurred after the above was written.

Medical Progress.

REPORT ON DERMATOLOGY.

BY J. T. BOWEN, M.D., BOSTON.

CANCER OF THE SCROTUM IN CHIMNEY-SWEEPS AND OTHERS.[1]

Butlin undertakes an investigation of the statements (1) that chimney-sweep's cancer is rare outside of Great Britain; (2) that it is becoming less common even there; and (3) that it is, in comparison with other malignant growths, a mild one. The first proposition could only be determined by a comparison of the statistics of the London hospitals with those of the Continent and of the United States. The second proposition, that it is becoming less common, is not borne out by the statistics of the London hospitals. It was never a common disorder. The third proposition, that it is a comparatively mild disease, he assents to, regarding the prognosis of an uncomplicated cancer of the scrotum as favorable, and recurrences as less difficult to handle than is the case with most malignant affections. The disease begins by the appearance of a wart, which may remain unchanged for a long time, but finally begins to grow and to become degenerated in the centre. From the surface, where it often remains localized for a long time, the growth may extend inward and involve the testicles. Secondary affection of the inguinal glands is apt to be of late occurrence; other secondary affections are not common.

Butlin emphasizes two peculiarities of the disease, the affection of the lymph glands years after the successful removal of the primary affection, and the affection of the inguinal glands without a primary disease in the scrotum or neighboring parts. Several cases of the first sort are alluded to, and three of the second. In the second instance there is an epithelioma of the lymph glands, that presents all the characteristics of the secondary affection, but for which no primary source can be determined. Several theories in explanation of this anomaly are advanced by the author.

As to the frequency of cancer of the scrotum, Butlin shows that 39 cases have been treated in St. Bartholomew's Hospital during the last twenty years; there was a proportion of one to forty cases of malignant neoplasms. Middlesex Hospital records gave similar figures. Of the 39 cases from St. Bartholomew's, 29 were chimney-sweeps. It is believed that the skin of the sweep is so altered by his occupation that it is susceptible to the inroads of cancer, and that the skin of the scrotum is more predisposed than other parts. Of 36 deaths from cancer, which occurred in chimney-sweeps, one case presented a cancer of the lip, two of the face, 23 of the scrotum, penis and testicles. This preponderance of scrotal cancer is emphasized when one compares it with the one case of cancer of the lip that occurred, a part that is with men especially prone to cancer.

He next attempts to solve the question why the occupation should have such an influence. It cannot be the dirt, as scrotal cancer does not occur in those who follow other occupations, as miners, coal-shovellers, etc., and who are often entirely covered with dirt over the whole body. It is not possible that the soot contains the cancerous element, according to the author, nor that it is the *direct* cause of the cancerous growth. He believes that the soot must prepare the soil for the appearance of cancer by means of its chemical action. Other questions to consider, if this is so, are why chimney-sweeps of other countries are not affected with scrotal cancer. This he believes to be due to the neatness of the foreign sweeps. The Belgian and German sweeps are better protected by clothing from the soot than are the English. In Germany and Switzerland a daily bath is taken, while the English chimney-sweep washes away the soot only once a week at the most.

The question is next raised, How great is the tendency to cancer in persons with other occupations? Volkmann has written on "Tar, Paraffine and Soot Cancer," and Bell upon "Paraffine Cancer of the Scrotum." These forms are quite the same as that found in chimney-sweeps, and lead Butlin to the conclusion that it is possible to prepare the skin for the outbreak of cancer, by continuous action of certain substances upon it for a long series of years, and that these injurious substances, which we know best, are soot, tar and raw paraffine. These substances appear to exert a specific action on the tissue of the scrotum; and Butlin thinks that the susceptibility of this part depends more upon chemical and physiological peculiarities than on anatomical structure.

According to Esmarch, Langenbeck and others, the injurious agent in tobacco-smoke and tobacco-juice, is the same as that in soot; and in this way the cancers of the lip and tongue in tobacco-users are explained. He further believes that the particles of soot suspended in the air of large cities, may very easily cause cancer of internal organs, by gaining entrance into the body. He ascribes the increase in the number of cancerous affections, in part, to the daily contact of the soot with our mucous membranes.

As prophylactic, he recommends a dress for the English chimney-sweeps similar to that used in Holland, Belgium and Germany, and a daily warm bathing of the whole surface of the body.

CONDITION OF THE BLOOD IN CERTAIN DERMATOSES.[2]

There have appeared, of late, several articles on the density of the blood and serum in different normal and pathological conditions; and Schlesinger endeavors to obtain some data as to the influence of pathological states of the *skin* on the blood and serum. His results are based on 1,200 examinations made on 200 subjects. The method of Hammerschlag was used to determine the specific gravity of the blood.

Pemphigus. — Eleven cases of pemphigus foliaceus, three of pemphigus pruriginosus and five of pemphigus vulgaris were examined. In all cases the specific gravity of the blood was much above the normal. The blood was examined both during and after an eruption, as well as during the intervals between attacks, but only slight oscillations were observed as a rule. Several times, however, very marked bullous eruptions were accompanied by a considerable increase in the specific gravity of the blood, that disappeared soon afterward. The experiments on the density of the serum showed that the increase could always be accounted for by the loss of the albuminoid constituents.

Burns. — Fifteen cases of subjects who died of burns, showed that the blood in all was very much thickened. This thickening, however, was only present during the first twenty-four hours. Sometimes in subjects who lived for three or four days after the burn, no thickening of the blood was observed after the first thirty-six hours. The increased specific gravity (1,065 to 1,073) was owing to the loss of serum, or at least to the loss of an albuminous fluid, provided there was no variation in the specific gravity of the serum.

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[1] Butlin: British Medical Journal, June and July, 1892.

[2] Schlesinger: Virchow's Archiv, 1892.

Eczema. — The cases examined were generalized eczemas with very abundant secretion. Here he found only a slight increase in specific gravity, which rapidly disappeared. If the affection lasted a long time, there were found no important alterations in the blood.

In all the other dermatoses examined, lichen ruber, leprosy, psoriasis, erythema multiforme, etc., no change in the density of the blood could be detected, or there was only a change that could be accounted for by the impairment of nutrition. In lupus, the specific gravity was normal, except in cases where there had been free suppuration for a long time.

A number of examinations were made to determine the relation between the density of the serum and the liquids exuded at the surface of the skin. In vesicular and bullous eruptions, he found that the fluid contained in the bullæ was of a less specific gravity than that of the blood serum, although in certain conditions it may even exceed the latter in density. As a rule, the exudation in the dermatoses is more albuminous than that of other inflammatory processes. One hundred and thirty examinations of the contents of bullæ were made, in cases of pemphigus, burns, urticaria, erythema multiforme, erysipelas, herpes zoster, etc. He found that the contents of the bullæ in some were below the blood serum with respect to the proportion of albumen, while others, as erysipelas and vaccination vesicles, contained an equal proportion of albumen. In only one affection, herpes zoster, were the contents of the bullæ much denser than the blood serum. In two cases of pemphigus, it was found that the specific gravity of the contents of the bullæ was very high at the beginning of the process, but diminished rapidly with its extension. It was found that in exudative processes of the skin that persisted for a long time, there was no diminution in the albumen of the blood, or at most a very slight one. The specific gravity of the blood was never less than 1,027 in pemphigus and in chronic weeping eczemas.

Certain external medicaments have a marked influence on the density of the blood, raising it for several days, without especial effect on the general condition. Examinations were made on subjects who were receiving weekly injections of five centigrammes of sublimate. After each injection there was found to be a considerable increase in the specific gravity of the blood, which may be transient, lasting only some hours, or may be prolonged for several days. Two cases where the gray oil of Lang was being injected were examined, but no change in the density of the blood nor in the number of red globules was apparent. In cases undergoing the inunction cure, no important variations in the density of the blood nor in the number of red globules were observed. It was found that naphthol and chrysarobin have an action similar to that of sublimate. No especial change in the specific gravity was found in the case of twenty subjects who were being treated by pyrogallic acid. Tar on the contrary, even when used for a short time, was shown to produce quite marked variations in the specific gravity of the blood.

TREATMENT OF SYPHILIS BY BLOOD SERUM.[3]

Many pathogenic micro-organisms produce during the period of infection, soluble substances, which are capable of conferring immunity, as has been lately demonstrated. These materials circulate in the blood, and are probably eliminated by the kidneys when these organs are in proper order. Bouchaud, experimenting with the microbe of blue pus found that when he injected the urine of rabbits that had been previously inoculated with this microbe, into other rabbits, the latter were rendered proof against the action of the bacillus pyocyaneus.

It is by the action of these products that the immunity of the mother bearing a child infected with syphilis by the father, is to be explained, the placenta being the organ through which the products are carried. In this way, too, is to be explained the occasional immunity of the child of a syphilitic mother. Bonaduce also thinks it probable that in the case of a married pair, living in close relationship and contact for many years, one of whom is afflicted with leprosy while the other remains free — the reason for the latter's immunity may lie in the reception by the mother of the soluble products of the leprosy bacillus, through the utero-placental circulation.

Although the real bearer of the syphilitic poison has not been isolated, no doubt can exist in the present state of pathology, that syphilis is an infectious disease, and as such subject to the laws that hold good for others of its class. Therefore, we may assume that the micro-organism of syphilis produces, not only a syphilis poison, but also an *anti-syphilis* poison, that is to say, substances which have the power of conferring immunity from this disease. In this way the products of the microbe, that are formed in the fœtus, are the cause of the mother's immunity. In acquired syphilis in the adult it is these substances again which are formed from the microbes, and produce the acquired immunity. Thus we conclude that after a certain time, there are present in the blood and tissues of syphilitic subjects, the elements by which the organism receives its immunity from a second infection from syphilis. The quantity of the products necessary to obtain immunity in certain diseases, has been shown by experiment to be very small. Many difficulties are thrown in the way of obtaining these active products from the blood. In the first place, it is very hard to determine the point where these products are set free and enter into the circulation, and, in the second place, we find other poisonous substances in the serum of infected organisms, which favor the growth of the microbes, when injected into an animal affected with the same disease. As during the uterine life the soluble products of the micro-organisms have no outlet through the kidneys, the writer concludes that in all probability the substances that confer immunity must be present in the child immediately after birth as well as the poisons alluded to. To get rid of the latter heat is utilized. The writer, therefore, instituted the following experiment. Blood was taken from three children suffering from hereditary syphilis and left for a day in the ice-chest. In this way thirty-five cubic centimetres of serum were obtained, to which were added one hundred cubic centimetres of distilled water. This mixture was then warmed for ten minutes at 100° C., and filtered over the flame. Ten cubic centimetres of this mixture were injected every other day into a patient who had a characteristic initial lesion and polyadenitis. The cure lasted twenty-four days, in which twelve injections were made, and during this time the ulcer and also the adenitis gradually disappeared without local treatment. Eight months later no syphilitic symptoms had appeared. The writer encourages those who have the opportunity, to institute similar experiments with the blood serum from the placentas of women who have borne children affected with hereditary syphilis.

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[3] [illegible] August 1, [illegible]

Two eminent Italian specialists are already experimenting with blood serum in the treatment of syphilis. Tommasoli is using lamb's and calf's serum for injection, on the ground that the blood of these animals must contain a chemical substance which is hostile to syphilis, inasmuch as it is a disease peculiar to mankind alone. Pellezzari, on the contrary, thinks that the virulent agent of the disease must be attacked by the aid of the chemical products which it produces itself. With this motive, he injects the blood serum of syphilitics in the different stages of the disease. Fournier has also attempted injections of the blood serum of dogs and horses, according to the method of his colleague Richet, and Feulard has called attention to the efficacy of the dog's blood serum.

(*To be continued.*)

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

Regular Meeting, April 3, 1893.

Dr. George A. Craigin read a paper entitled

A CASE OF PREGNANCY COMPLICATED WITH PNEUMONIA AND EMPYEMA.[1]

Dr. Knight: I have been very much interested in Dr. Craigin's account of his case, one of a kind of which I have had comparatively little experience; therefore his case and the statistics and facts which he presents in regard to pneumonia and pleurisy in connection with the puerperal state are very interesting to me. In regard to the other condition, the tubercular condition, I have had a good deal of experience in cases of it which have been complicated with pregnancy, and I have come to a pretty decided conclusion in regard to such cases without having made statistics which every man ought to do if he wishes his statements to be believed. As Dr. Craigin says, it is well-known that there is a great diversity of opinion in regard to the influence of the one on the other, pregnancy on tuberculosis and tuberculosis on pregnancy. Clinicians pretty generally from the time of Cullen down have come to the conclusion that pregnancy exerts a rather favorable influence upon tuberculosis and perhaps even an arrest, whereas the obstetricians claim exactly the opposite, that the influence of pregnancy is decidedly injurious and fatal. Well, now I have come to the conclusion that this diversity of opinion comes from the fact that the clinicians see the cases early and the obstetricians see them late. It is in my opinion true that in a pretty large proportion of cases of pregnancy the tubercular process is apparently favorably influenced. There is an arrest or a great improvement during the activity of the nutritive processes set in action by the condition of pregnancy, and it is also true in my experience that very soon after childbirth and as a consequence of childbirth apparently and an attempted restoration to the normal condition of things that patients are very apt to fail rapidly; but there is an occasional exception to this and those cases you may say only prove the rule. I do not at all believe in the dictum of some French clinical professor who said the tuberculous woman may have two children or three, but never more. I remember very well reports of cases where tuberculous women have given birth to five children and been well for some time after it.

In regard to the time of the disease in which pregnancy occurs, a good deal has been said, but the fact is that it rarely happens that a woman in advanced tuberculosis of the lung becomes pregnant. I should say that a pretty good proportion of cases of tuberculous women in the earlier stages who become pregnant are likely to do pretty well during pregnancy unless they have serious digestive disturbances and those cases do very badly. If there is a good deal of nausea and vomiting and general digestive derangement during pregnancy a tuberculous woman runs down rapidly, but otherwise I should say a pretty large proportion of cases improve and some undergo a temporary arrest.

Dr. S. H. Ayer: I have been very much interested in Dr. Craigin's paper because I have had a case very similar to his which I reported about a year ago. Pneumonia occurring during pregnancy is a very grave complication; the mortality is very high; abortion is very apt to occur; the more advanced the pregnancy the more liable is the patient to abort, the more unfavorable is the emptying of the uterus and the more fatal the issue. The symptoms of a pregnant woman afflicted with pneumonia are not materially different from those of an ordinary case with the exception that all the symptoms seem to be very much exaggerated. The fever is apt to be higher; the skin is very hot; there is marked disturbance of the respiration. This disturbance in the respiration is due to two causes: First, the causes which are influenced by the pneumonic process, such as the exudation, the pain experienced from the coexistent pleurisy, and the using up of a great amount of oxygen, brought about by the increased combustion, due to the fever. Second, when pregnancy complicates the case we have the abdominal space filled, more or less, by the enlarged uterus pressing up the bowels, stomach and spleen, and interfering materially with the contractions of the diaphragm. Then, too, we have to take into consideration the impoverishment of the blood, which is a very important factor in rendering the case a serious one.

The case which I reported a year ago was of a young woman twenty-five years old, who, in the fourth month of pregnancy, was taken with symptoms of pneumonia, miscarrying. She remained comfortable about thirty-six hours when she was seized with severe pain in the left side, dyspnœa and fever. The symptoms were not relieved by the physician in charge, and, she being at the time under the care of a homœopathic physician, I was called to the case early in the morning of the fourth day. Examination showed signs of pneumonia at the left base. Pain was relieved by the administration of morphine and the patient very soon became in a comfortable condition. She went along comfortably until the eighth day when the signs at the left base gave way to those of effusion. In about two weeks the patient was taken into St. Elizabeth's Hospital. Aspiration was tried, but the pus would not pass through the needle, and a permanent opening was accordingly made and tubes inserted. In about six weeks the patient made apparently a good recovery, and remained well for perhaps two months longer when she again began to ail. The symptoms were obscure and in no way referable to the chest. She entered the City Hospital and remained there one month. While in the hospital a great deal of cough developed with expectoration, and she left in a very much debilitated condition having lost perhaps thirty pounds during her illness. She was looked upon as a case of phthisis. The patient then went to the country, returning perhaps in six weeks from the time she left the hospital, and again came under my care. At that time an abscess had formed in the sixth left interspace, just outside the nipple and it was evident that an empyema existed. Resection of the seventh rib was performed and in a month's time the patient was nearly well, one might say, in excellent condition. She had gained perhaps twenty pounds of flesh and the cough had entirely ceased. The diarrhœa, which had continued without interruption for two or three months, also disappeared. The marked œdema of the ankles left her and she became quite herself again. However, the opening did not close and in about one month from the performance of the resection a further resection of the fifth and sixth ribs was performed. In perhaps a month's time the opening healed entirely and the patient left the hospital perfectly well.

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[1] See page 270 of the Journal.

The subsequent history of this patient is also interesting, and I should like to repeat it here. She remained in perfect health for about fifteen months. She then became pregnant and began to have rather bad symptoms. The appetite became poor and she was troubled with more or less nausea and vomiting. The diarrhœa returned, which was not easily checked. Rather a profound condition of anæmia set in, and her general condition became very poor. At this time she was not under my observation, but, coming to Boston last October, she then being in the seventh month of pregnancy, I saw her for the first time. There was nothing noticeable then regarding her mental condition, but the anæmia, and the œdema of the ankles were present. She was put on tonic treatment and the case was supposed to be progressing fairly well. The diarrhœa stopped, and we were looking forward to a favorable termination of the case. On the 16th of December, she then being about eight months' pregnant, she suddenly developed symptoms of insanity which were of a very mild type, so mild, in fact, that the husband thought little of it. On the morning of the 17th she seemed to have hallucinations. She thought that the people were trying to get into the house; that somebody would enter the room and carry her off, and she made such queer remarks to her husband regarding their leaving the house, that he thought it best to come for me. When we returned we found she had committed suicide by the use of a razor, severing the trachea and large vessels of the neck.

I think the most interesting point regarding Dr. Craigin's paper is the fact that the patient lived at all. I think it remarkable, that, with all she went through, she survived. It seems to me, speaking in the line of criticism, that a resection would have been perhaps better than aspiration in the beginning. I firmly believe that empyema, no matter when it may occur, is a great deal better treated by resection than by aspiration, or even by a permanent opening, and it occurred to me as Dr. Craigin was reading his paper, that, possibly a resection, done in the beginning, might have in some way changed the aspect of the case.

Dr. Craigin: I should like to ask whether Dr. Knight thinks that if abortion were induced early in pregnancy it might affect the tuberculosis favorably.

Dr. Knight: I have not had any experience. I should think that the nearer a woman came to not having children the better off she would be in the end.

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THE PAN AMERICAN MEDICAL CONGRESS.

The first meeting of this Congress was held in Washington, September 5, 6, 7 and 8, 1893, the President, **Dr. William Pepper**, of Philadelphia, in the chair.

The Congress was formally opened by the **President of the United States**, who said:

"The part assigned me on this occasion admits of but few words. It, however, affords me the opportunity to say how pleased I am to be in any way related to an assemblage such as this, called together in furtherance of the highest and noblest purposes and desires. I hope I may also be permitted to add that the protection of the public health and the prevention of contagious diseases are objects properly brought under consideration at the capital of a nation which appreciates fully the serious importance of everything which aids in making intercourse between civilized countries, and commerce between them safe and easy. It is also fitting that those who devote themselves to saving human life and the alleviation of human suffering should consider the modes of reaching these beneficent ends at the seat of a government whose greatest regard is the welfare and happiness of the individual citizen. It only remains for me to declare this Pan-American Medical Congress open for the transaction of the business which has called it together."

The **Hon. J. W. Ross**, President of the District Board of Commissioners. delivered an address of welcome on behalf of the District of Columbia.

The President of the Congress, **Dr. Wm. Pepper**, then made an informal address, describing the objects of the Congress, and the work to be done. In conclusion, he expressed a hope that in the future the American Medical Association might expand beyond the limits of the United States, and become welded with the Pan-American Congress.

Responses were made by **Dr. J. W. Phillippo**, of Jamaica, in behalf of the British West Indies; **Hon. J. B. McCreary**, of Kentucky; **Dr. F. Montizambert**, of Quebec, representing British North America; **Dr. J. J. Ulloa**, of Costa Rica; **Dr. J. N. Hibberd**, President of the American Medical Association; **Dr. C. A. L. Reed**, Secretary-General of the Congress; and **Dr. S. S. Adams**, Chairman of the Local Committee of Arrangements.

Prof. F. A. Risquez, of Caracas, Venezuela, delivered an address on "The Flora of America in its Relations to Medicine."

SECOND DAY. — WEDNESDAY, SEPTEMBER 6TH.

The formal address in the morning session was delivered by **Prof. Raphael Lavista**, of Mexico, on

"The Pathology, Symptoms and Treatment of Gangrene."

Resolutions were referred to the International Executive Committee —

(1) Requesting the Committee to appoint suitable international committees on the subjects of proper Govermental recognition of State preventive medicine, on uniformity in American pharmacology, and on medical education.

(2) Resolving that the Congress respectfully recommend to her Imperial Majesty's Secretary for India these recommendations: An imperial sanitary department attached to the Government of India, a provincial sanitary department attached to each of the provincial governments, and a local sanitary department.

(3) A resolution, that in the opinion of the Section of Hygiene, Climatology and Demography, the interests of the public health in every country should be intrusted to a department of the government especially charged with their administration, and that it shall be national, that it shall have parity of voice and influence in the national councils, that it shall have independent executive authority under the limitations common to other departments, and that it shall be intrusted to educated and experienced medical men.

In the afternoon, the delegates and their families were formally received by President Cleveland.

In the evening **DR. WILLIAM PEPPER** delivered

THE PRESIDENT'S ADDRESS,

from which we make the following extracts:

If anything could add to the dignity of this assemblage, which for the first time asserts formally the organic union of the physicians of all America, it is the fact that the Congress of the United States passed a joint resolution requesting the President to extend those invitations, in response to which we welcome the presence here of official delegates from all the Governments of the Western Hemisphere.

After a concise review of the history of the settlement of the American Continent, and the advance of medical science, he said:

For a long time it seemed even to friendly critics that the new races which strove for a foothold on American soil were unlikely to thrive as vigorously as in their accustomed habitats, and the impossibility of developing a genuine and lasting American type was freely asserted. To those who have considered this point with anxious care, the last two decades have brought results that put to rest all apprehension. It is a demonstrated fact that the European race in America, which already numbers over a hundred millions, will show no decline in vigor or in energy, in physical or in mental strength. It is not on account of mere bigness in material achievement that we point to the millions who fought in the great civil war; or to the hundred and seventy thousand miles of railroad in the United States, almost as much as in all the world besides. It is, even more, as evidences of large imagination, of courageous resolution and dauntless tenacity of purpose, and of enormous power of physical endurance that we value the enterprises which have subjugated this continent so swiftly and are hastening its commercial consolidation.

The entire medical world was agitated during the latter half of the seventeenth century by the struggle over the merits of cinchona bark, introduced into Europe in 1640 by Juan del Vego, and no more convincing tribute can be adduced as to the value of medical and sanitary science than the prominent place occupied by malarial diseases in the general and medical literature of the seventeenth and eighteenth centuries as contrasted with the feeling of impunity with which they are now regarded. Among the results which may be anticipated from this meeting is, I trust, the adoption of some well-considered plan for systematic conjoint study of our American remedies to greater uniformity in their preparation, and ultimately to a single pharmacopœia for the entire continent.

The introduction of nitrous oxide (1844) and of ether (1846) into medical practice, with which the names of Wells and of Morton are so honorably connected; the establishment of the operation of ovariotomy by McDowell, of Kentucky, upon a secure scientific basis — these and hundreds of other achievements are too familiar to need mention. Every one knows now how superfluous it is to say a word in defense of American literature, and certainly we who know how powerfully the opinions and practice of medical men in Europe and throughout the world are influenced by American writings may view our position with some complacency. Yet a survey of what America is actually contributing to medical literature shows clearly how far we are behind the nations which lead in medical thought.

On the other hand, in the more ephemeral forms of medical literature the figures are very different. From a careful count made of the volumes of medical journals and transactions filed in the library of the Army Medical Museum at Washington, it is clear that of these classes of medical literature there were, in 1890 and in 1891, published in America about twice as many volumes as in Germany or France, and fully three times as many as in Great Britain. We must not forget that in the hurry of our life of to-day many observations and investigations of great value are published in journals, instead of being reserved to become part of more serious and complete volumes. But the great excess of medical journals in America, as contrasted with the comparatively small number of new medical works, is entirely consistent with the admitted leadership of Germany, France, and Great Britian in medical science. The apparently extraordinary number of medical journals in America is due chiefly to a substantial reason, and one which influences equally the existence of very numerous medical schools and medical societies. The vast extent of territory and the relatively sparse population render it impossible to serve the country with as low an average of medical men, schools, societies, or journals as is possible in more densely-populated countries.

The rapid rise in the standard of scientific requirements, both of medical men and medical literature, and the increasing appreciation on all sides of the fact that the higher medical education is the true interest both of the profession and of the public is accomplishing the much-needed work of checking the ill-considered establishment of new medical enterprises. I should fail in courtesy and in candor alike were I not to acknowledge the great value of the example which has been so consistently set by Latin-America and by Canada in the maintenance of a high standard of qualifications for medical practitioners.

A broad field opens before us for the study, with the aid of collective investigation, of the distribution and course of phthisis and rheumatism and other important diseases as influenced by race and locality. The endemic fevers, other than malarial and typhoid and yellow fever, which are said to prevail in various parts of North and South America, have long demanded systematic investigation to complete the study which the illustrious Drake began.

Our combined influence will be irresistible when used in advocacy of higher education; in carrying out large plans for the scientific study of our national life, as affected by social and climatic influences; in the adoption of remedies and remedial measures of demonstrated merit, and in the insistence upon a fuller recognition of the lofty function of preventive medicine. "Salus sanitasque reipublicæ, suprema lex." Let us acquire here a closer touch with each other, a deeper faith in our profession and its noble destiny, and a stronger determination to labor in brotherly co-operation for the loftiest ideals of service to science and the race.

(To be continued.)

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Recent Literature.

Cholera: Its Protean Aspects and Its Management. By Dr. G. Archie Stockwell, F.L.S. In two volumes. Physicians Leisure Library. Detroit: George S. Davis. 1893.

Dr. Stockwell's views in regard to the pathology and treatment of cholera are not those most generally held at the present time. According to the views which he advocates, cholera is a neurosis. The sympathetic system is in either a paralytic or hyperæsthetic condition — extremes which meet. The pnuemogastric, a cerebro-spinal nerve, is an antagonistic and controlling agent; its stimulation, and thereby the re-establishment of its cardio-inhibitory functions, is an important indication. In all attacks of cholera, regardless of the stage, the first indications are to stimulate the vaso-inhibitory apparatus and antagonize the sympathetic (especially in its cardiac and lobar plexuses) by sedation, by reflex, or by both. Irritants or epispastics over the branches of the vagus in the neck beneath, in front of and behind the ear, covering three inches of surface, preferably on the right side, should be freely applied. The effect is almost instantaneous.

The so-called cholera-bacillus of Koch, Dr. Stockwell regards only as an old friend under a new name — an everyday *spirillum*. He makes no distinction, except in severity, between cholera nostras and Asiatic cholera.

The second volume is largely made up of extracts and quotations from writers on cholera whose opinions commend themselves to Dr. Stockwell.

Should this book reach a second edition, more careful proof-reading would be desirable. A constant repetition of *prima viæ* strikes the reader as strangely as do some of the author's opinions.

Cholera: Its Causes, Symptoms, Pathology and Treatment. By Roberts Bartholow, M.D., LL.D. Philadelphia: Lea Brothers & Co. 1893.

This small octavo of 130 pages contains in a condensed form a well stated *résumé* of all the important and practical points in regard to cholera which the practitioner or student requires. There is a judicious historical introduction; and the author's personal experience in two epidemics has well fitted him to weigh the value of recent investigations and procedures.

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AUTO-INTOXICATIONS IN MENTAL DISEASES.

There has been of late considerable speculation respecting auto-intoxications in the psychoses. Such speculations have been stimulated by Professor Bouchard's researches on the pathogenic rôle of the auto-intoxications in general.

Dr. Kellogg, of Flushing, N. Y., in the New York *Medical Journal* "considers it probable that a considerable proportion of mental disorders have a toxic origin." In alcoholic, saturnine, and some other forms of poisoning the dependence of the mental disturbance upon the poison is recognized, and he contends that certain auto-intoxications with ptomaines are probable causes of insanity. The toxic albumoses have been found in the urine in cases of insanity. Why, he asks, may not the autogenous poisons enter the circulation and act directly upon the central nervous centres with sufficient toxic force to produce mental disturbance?

Dr. Rohé, of Catonsville, Md., in inquiring into the relations existing between pelvic disease and psychical disturbances in women,[1] points out the frequency with which bodily conditions influence mental states, and shows that "a torpid condition of the intestines, Bright's disease, putrefactive processes in the intestinal canal, etc., might give rise to melancholia and other disorders of the mental functions."

Dr. H. M. Hurd in an article "On Post Febrile Insanity" in the *Journal of Insanity* studies the delirium of fevers and the psychoses developing from specific infections, and Dr. G. T. Tuttle, of Somerville, Mass., reports the results of the examination of the urine in two hundred consecutive cases in the McLean Asylum.[2] Albumen and casts were found in 55 cases, albumen alone in 64 cases. He collects statistics from various pathological reports of hospitals and finds that in about 40 per cent. of autopsies in the insane, kidney disease was found, and concludes that chronic nephritis [uræmic poisoning] is sometimes the cause of mental aberration which may be called insanity.

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[1] Journal of the American Medical Association, September [illegible], 1893.

[2] Journal of Insanity, April, 1893.

The subject was discussed at the Fourth Congress of Mental Medicine held at Rochelle in August, 1893. Regis, of Bordeaux, and Chevalier-Lavaure, referees, stated that they had been working on the line of the autogenous poisons, and had made many chemical and clinical researches to elucidate the relation of auto-intoxications to mental diseases. The toxicity of the urine was found to be diminished in maniacal states and augmented in melancholia. The urine of maniacal patients when injected in animals produces excitation and convulsions; that of melancholic patients, restlessness, dejection and stupor. There is often in insanity as in eclampsia an inverse relation between the toxicity of the urine and that of the blood, the latter being hypotoxic when the urine is hypertoxic, and *vice versa.*

Under the head of "Facts of Clinical Order," these authors consider the psychoses of acute infectious diseases, of visceral diseases, and of diathetic diseases:

(1) In respect to the psychoses of infectious diseases (typhoid fever, eruptive fevers, influenza, erysipelas, cholera, puerperal fever) the sum of researches thus far made goes to show: First, that from a pathogenic point of view, these mental disorders are the result either of direct action of microbes or of their indirect and mediate action by the toxines which they secrete; second, that from a clinical point of view, they may present two aspects. In the febrile stage, the psychosis is an acute delirium, resembling the alcoholic; in the post-febrile stage, it is of an asthenic character, a state of mental obnubilation and confusion (Verwirrtheit). The referees think that a third form of infectious psychosis must be admitted, a form intermediate between those above mentioned, with the symptomatology of paralytic dementia, and which they call pseudo-general paralysis, or infectious general paralysis; and they ask in this connection, if most cases of typical paralytic dementia may not be the consequence more or less remote of an infectious disease? However this may be, the characteristic symptom of infectious psychosis, in all its forms, seems to be intellectual disorder, mental confusion, without doubt the result of the impregnation of the temporary inhibition of the cerebral cells by toxic agents. Generally the psychosis thus produced is susceptible of cure.

(2) The visceral psychoses are also believed to be in great measure the consequence of auto-intoxication. Nevertheless, experimental researches have not been pushed far in this direction, and in what concerns particularly the psychoses resulting from digestive disturbances, we yet know very little, having only certain imperfect data as to the concomitant alterations of the gastric chemism and the toxicity of the intestinal contents. We have more satisfactory data regarding hepatic and nephritic insanities, and it is clearly established to-day by the researches of French authors that these psychoses are at their highest mark the result of an autochthonous poisoning of the organism, of an auto-intoxication. As for the clinical character of these visceral psychoses, it may be affirmed that in cases where the intoxication is acute, the mental disease manifests itself habitually under the form of an acute toxic delirium like alcoholic delirium (this is the case in uræmic poisoning); when the intoxication is slow and chronic the state is one resembling melancholia, or, more rarely, paralytic dementia.

(3) The diathetic psychoses resemble acute toxic delirium, and in the interval of attacks they frequently manifest themselves under the form of general paralysis or paroxysmal mania more or less periodical, and almost always with melancholic character. The referees have also noted that these paroxysms of madness appear to correspond to variations in the composition of the liquids of the organism (hypoazoturia, hypophosphaturia, oxaluria, etc.), notably to discharges of uric acid, frequent precursors of the end of the crisis, and also to modifications in the urinary toxicity which is found to be inferior to the normal.

Under the head of "Facts of Therapeutical Order," the referees state that the antiseptic treatment, general or local, often gives most excellent results.

It is true that in the treatment of the psychoses of acute infectious diseases a tonic and supporting regimen is necessary to combat the state of exhaustion and inanition, the agents of infection being unknown; but in the visceral psychoses, linked to diseases of the stomach, liver, kidneys, etc., very good results have been obtained from the employment of purgatives, lavage of the stomach, and antiseptics.

At the same meeting, Ballet, of Paris, gave some interesting facts concerning the toxicity of the urine of insane persons, which were strikingly confirmatory of data previously furnished by other authorities. At the same time, he cautions against exaggerating the importance of these researches; the study of urinary toxicity in the insane has without doubt its utility, but it would be impracticable to found nosological distinctions on this alone. In one instance, cited by him, the toxicity of the urine was extreme, the patient was an hysterical girl who manifested no delirium or mental aberration, and had no apparent disorder except hysteria.

VARIATIONS IN INTENSITY AND RHYTHM OF THE CARDIAC PULSATIONS.

ALTHOUGH in general variations in the intensity of the heart sounds depend upon the strength of the systole, there are a number of other circumstances which may cause variations. Potain[1] finds that among the most obvious of these are increase in thickness of the cardiac walls, or those of the chest, the interposition in front of that organ of gas or liquid or the presence of a portion of the lung, possibly in an anomalous anatomical position. Special sounds may be accentuated in certain diseases, as the aortic sound in Bright's and the pulmonic where there is an obstacle in the pulmonary circulation.

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[1] L'Union Médicale, January 5, 1893.

In most cardiac affections there is great acceleration of the rate, though sometimes retardation is observed. The latter, however, does not usually depend on a lesion of the orifices, and is often more apparent than real, some beats being too feeble to be felt in the pulse or even to be heard by attentive auscultation. This condition has great prognostic value as it indicates a change for the worse in the condition of the patient. The fœtal rhythm, recently insisted upon by Huchard, depends upon an accelerated cardiac action accompanied by a modification in the duration of the pauses, so that the intervals between the two sounds seem of equal length.

Irregularity of action may depend on simple digestive disturbances, especially intestinal, but is usually a symptom of valvular lesion and it is well worth knowing that it is observed especially in patients who have been under treatment by digitalis.

At times three, or even four, sounds, may be heard with each cardiac revolution, at others, only one, in the latter case it is usually the first sound which is lost or rather becomes so faint that it cannot be heard. Reduplication may be normal and is then dependent on the respiratory movements, the reduplication of the second sound being produced at the end of inspiration and at the commencement of expiration, while the reverse is true for that of the first. The reduplication of the second sound is due to the premature closure of the aortic flaps from the increased tension of the blood in that vessel, and results from purely mechanical causes. The physiological reduplication of the first sound is much rarer. The pathological reduplication of the second sound may be the only sign of mitral stenosis, which otherwise gives no evidence, either general or local, of its presence. It is independent of respiration and accompanies all cardiac pulsations. Being due to changed conditions of pressure in the two arteries, at the beginning of the disease it is due to premature closure of the aortic valves, at the end to premature closure of the pulmonic; midway in the course of the affection there is no reduplication, but only an accentuation of the second sound. The reduplication of the second sound due to premature aortic closure is also seen in general pericardial adhesions, and the differential diagnosis can only be made by looking for other signs of this condition. The two conditions may, of course, be co-existent.

MEDICAL NOTES.

Typhus Fever. — Typhus fever has broken out again in San Luis Potosi, Mexico, and a large number of deaths occur daily. The other cities are so far free from the disease.

Cholera. — The last week has seen a general improvement in the cholera epidemic throughout Europe. At present the condition is most serious at Soolina and the Danubian ports. Kalafat, Styrna and Scutari are all infected — over three hundred cases having been reported in the last week with a high mortality. The disease has appeared in Bucharest and in the prison at Constantinople. The mortality throughout Turkey is about thirty per cent. Another death is reported from Vienna. In Roumania there have been fewer cases the last week than previously. In Italy and Southern France there has been a rapid decline in the epidemic. Nantes is the only place in France at present seriously affected. Thirty-five cases have occurred in Antwerp, since July 28th, with eighteen deaths. They have been scattered, and chiefly among sailors. The sanitary condition of the city is reported as very poor, no radical improvement having been made since last year. In England a death from cholera occurred the 11th inst. at Retford, County Notts.

The South Carolina Disaster. — The sanitary condition of the whole Carolina coast, resulting from the hurricane of two weeks ago has become most serious. Physicians in the vicinity of Beaufort and St. Helena are reporting to the Marine-Hospital Service a very large number of diarrhœal and malarial cases. It is almost impossible, they say, to care for the sick, and to provide the necessary disinfectants. The President has detailed a medical officer to take charge of the sanitary measures at Beaufort, and has placed a revenue cutter at his disposal.

Negro Surgery. — An article is going the rounds of the English newspapers describing "a wound in the heart of a negro successfully treated at the Negro Hospital, Provident, U. S. A., by a negro surgeon, assisted by negro nurses." American medicine is fairly well specialized already, but this suggests a new line for division of practice.

Pasteur Institute Report. — According to the report of the Pasteur Institute of Paris, for 1892, there were 1,793 persons inoculated who had been bitten by rabid animals. Seven patients died, a mortality of 0.39 per cent., which should be really considered lower, as three of the seven were already showing symptoms of hydrophobia when first treated. Bites about the head and face have the worst prognosis, a mortality of 1.48 per cent.

The Cure of Hay Fever. — The treatment of hay fever is subject to criticism such as comes to no other disease, namely, from societies of the sufferers themselves. It is interesting to note that the patients are not as enthusiastic over, and do not report such good results as a society of their medical advisers would be likely to do. The United States Hay Fever Association have recently held their annual meeting in Bethlehem, N. H., and listened to papers largely on the disease from the patients' point of view. It appears to be the general opinion that the only certain relief is to be found in the White Mountains, and that most therapeutic measures are of little or no use, and some of them harmful. The treatment by local cauterization in the nose is often of benefit, but the benefit is generally only partial and temporary.

NEW ENGLAND.

FOREIGN MEMBERS OF THE PAN-AMERICAN CONGRESS. — The foreign members of the Pan-American Medical Congress were the guests of the physicians of Boston this week. Tuesday morning they visited the Massachusetts General Hospital. At noon they were given a luncheon by the Faculty of the Harvard Medcal School, in the school building, about one hundred and fifty guests being present. In the afternoon they were shown over Harvard College. Wednesday morning they spent at the Boston City Hospital where they were given a luncheon by the Trustees. In the afternoon they were shown the harbor and quarantine arrangements as the guests of the Board of Health. Several of the members were accompanied by their wives and daughters, who were given a carriage ride about the city while the physicians were visiting the hospitals.

FRUIT AND CHICKEN NUISANCES. — The Board of Health of Boston has had much trouble lately with fruit venders and Chinamen who keep fruit to ripen, or slaughter fowl in their houses in violation of the city ordinances. This week several fruiterers have been convicted and fined for this offence, and the Chinese who keep fowl and kill them to order were also convicted, but no sentences imposed, as the Chinamen desired to confer with the Board upon some place where they may kill their fowl according to their national custom. This action of the court is expected to strengthen the control of the Health Board in abating such nuisances.

THE BOSTON WATER-SUPPLY. — The quarterly analysis of the Boston water-supply has been received by the Water Board from Dr. Wood. The waters are reported as generally containing less chlorine than formerly. The water improves on passing through Basin No. 3 and the Sudbury aqueduct, but does not improve in passing through the other basins and conduits. The waters of Stony Brook, Lake Cochituate and Basin No. 4 are about the same as in July, 1892, except that they have less chlorine. Basin No. 3 water has less chlorine than ever before. The waters of Basin No. 2, Farm Pond and Beaver Dam Brook are about the same as in July, 1892. The waters of Basin No. 2 and of the service has a little more albuminoid ammonia than for two years. The water of Chestnut Hill Reservoir is about the same as last October, and that of Cold Spring Brook about the same as in April 1892.

SCARLET FEVER AT PROVIDENCE. — An unusually large number of cases of scarlet fever have occurred in Providence, R. I., the last three weeks, and several cases have been reported from Pawtucket.

THE EPPING CAMP GROUND. — There seems to be good reason to suspect the sanitary condition of the Epping camp-ground near Amesbury, Mass. Last year several cases of typhoid, five of which were fatal, occurred among the campers soon after the season. This year a similar outbreak of the disease has begun, and one death has already occurred.

Miscellany.

THE DENTAL CONGRESS.

THE International Dental Congress which was opened in Chicago on August 14th, deserves more than passing notice on account of the character and excellence of the work done, and the size of the attendance. In addition to an attendance of 1,000 from the United States, 116 foreign members were registered, the latter not including Americans practising abroad. At the banquet held towards the close of the meetings twenty-seven different nations were represented in the responses.

The scientific work of the congress was done in eight sections; and the character of the work was extremely satisfactory. It is interesting to note that the more scientific of the papers attracted the largest audiences. The historical addresses are of interest to the physician as well as the dentist, in tracing the birth of dentistry from medicine and its rapid growth to its present position. The inaugural address of the President, Dr. L. D. Shepard, traces this development clearly and concisely from the opening of the first dental college, in Baltimore, in 1839, to the present day. The first dental journal was established in the same year, and in 1840 the first dental society. In 1841 the first State dental law was enacted, in Alabama, and, curiously enough, remained the only one in this country for twenty-five years, when New York followed in 1868. The English law was enacted in 1878, and other countries a little later.

Surgical anæsthesia, by which medicine has gained even more than dentistry, was given to the world by the younger profession. The greater honor is perhaps due to Dr. Wells, provided it is true that, in 1844, two years previous to Dr. Morton's discovery, Dr. Wells did intelligently and publicly, with full appreciation of the phenomena, perform painless operations in dentistry and surgery by the administration of nitrous oxid gas, given for that specific purpose. Dr. Morton probably knew of Dr. Wells's work previous to 1846. It is a curious fact that after the introduction of ether in 1846 and of chloroform in 1847 the use of nitrous oxid was not revived until 1862.

Among other discoveries of importance in dentistry may be mentioned the cohesiveness of gold. This was followed by improved instruments, the mallet, the rubber dam and the engine, and the preservation of teeth more and more superseded the older artificial plates. Dentistry has profited by the advances of recent medicine, and antisepsis and the study of bacteriology. To what a degree of progress the science of dentistry has arrived may be inferred from the list of papers presented to this congress.

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THE OPERATIVE TREATMENT OF PERITONEAL TUBERCULOSIS.

THE value of operation in the treatment of peritoneal tuberculosis in children has been much disputed and even yet is by no means generally allowed. The numerous cases benefited by laparotomy have been challenged as to correctness of diagnosis and the indications which predict a favorable result not thoroughly understood. The report by Conitzer[1] of seven cases operated upon for tuberculosis of the peritoneum throws some light upon the points in dispute.

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[1] Deutsche Med. Wochenschrift, No. 29, 1893.

The children varied from two and a quarter to nine years old. Four cases were of the exudative form in which there was a diffuse superficial inflammation of the peritoneum with numerous very small tubercles upon the parietal and visceral membrane and free serous fluid in the abdominal cavity. In all of these cases there was but slight disturbance of the general health. Some anorexia and heaviness and disinclination to move about were the chief symptoms. Some of the patients, too, had gray colored stools though not otherwise icteric.

The other three cases were of the dry adhesive form in which there was more general disturbance and often pain, and a considerable degree of matting together of the intestines and omentum.

The operation consisted only of an incision into the abdomen, and, after allowing the free fluid to escape, closing up of the wound. No washing or manipulation of the cavity was done in any case.

The four exudative cases all made a lasting recovery. In each, microscopic examination of the tissue showed characteristic tubercular structure, giant cells and in two cases the presence of bacilli. The three other cases all showed caseous tubercular nodules with bacilli. One case recovered from the operation and after four and a half months was still relieved from much of the pain and discomfort though not at all well. The other two cases died with little or no relief.

After discussing these cases in detail he draws the following conclusions:

(1) Peritoneal tuberculosis is spontaneously curable: the dry form in very few, the exudative form in a very large number of cases.

(2) All forms may be cured or at least relieved by laparotomy, even when other treatment, including puncture, has failed.

(3) The results of the operation depend upon (*a*) the form of the disease, the best results being obtained in the cases of effusion, (*b*) the duration of the illness, (*c*) eventual complications.

(4) The operation is contraindicated in advanced cases or those with marked tuberculosis of other organs.

(5) No explanation can be given of the reason or manner of the curative effect.

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LINGUAL TRACTION IN CASES OF SUSPENDED RESPIRATION.

THE Académie de Médecine has recently had under discussion the reports of many cases of asphyxia treated according to a method first suggested in July, 1892, by M. J. V. Laborde. At that time he reported several cases of apparent death from drowning, successfully treated by rhythmic tractions upon the tongue, drawing it well out of the mouth and allowing it to fall back again about fifteen times a minute. The result was so satisfactory that the method was tried in cases of asphyxia of the new-born, of gas poisoning and strangulation.

Since then a more general trial has been made by other physicians, and laboratory experiments to determine the physiological action of the treatment have been carried on. The results as reported to the Society[1] are full of interest. The procedure is as follows: The patient is laid upon the back with the head low or very slightly raised on an even plane from the hips. The mouth is opened and the tongue firmly seized between the thumb and forefinger, pretty well back. It is then drawn forcibly forward out of the mouth till some tension is put upon the root. It is not sufficient to draw forward the tip alone. The tongue is then allowed to fall well back into the mouth. This alternate traction and replacing of the tongue is done regularly about fifteen times a minute until the patient begins to breathe. In the cases reported as successful, the time occupied in traction varied from three minutes to two hours, according to the severity and nature of the case. When the lungs hold fluids, as water or mucus, a brief time should be spent in emptying them before beginning traction. The first sign of returning life is to be looked for in an epigastric wave caused by a slight diaphragmatic contraction. Following this a faint sigh gives evidence of a respiratory attempt. Diaphragmatic respiration returns first — then the thoracic. In severe and prolonged cases some observers found advantage in the coincident application of thoracic pressure. Many of the cases reported responded successfully to the Laborde treatment, after failure of other methods. This was especially so in cases of natal asphyxia in which the tongue traction was tried after the usual obstetrical methods had proved insufficient.

One case was particularly interesting. A girl, thirteen, was seen three minutes after apparent death from tuberculous meningitis. The body was still warm and slightly cyanotic, the pupils dilated, no breathing existed, nor could any cardiac action be made out by auscultation. Rapid traction of the tongue was tried, forty times a minute. After three minutes there was less cyanosis. Soon slight nasal dilatation was noticed; then the epigastric wave of slight diaphragmatic contraction, followed by thoracic motion. A faint murmur was heard over the heart and a small radial pulse made out. At the end of ten minutes the respiration was re-established (both abdominal and thoracic) the heart's action could be felt and both sounds made out.

This condition lasted for five minutes and then in spite of continued traction the vital processes disappeared in the reverse order of their re-appearance and the patient died permanently.

The physiological mechanism is through a reflex stimulation of the excito-motor forces of respiration. The sensory nerves of the tongue, especially at the base, are stimulated by the traction. The superior laryngeal is the most important, the glosso-pharyngeal and lingual playing a secondary rôle.

In dogs a section of the laryngeal nerves made the subsequent traction of the tongue during asphyxia of very slight effect, though previously the same dogs had responded well. The ninth nerve is second in importance. The motor nerve essential to the reflex, is the phrenic, as after section of this nerve in dogs continued and energetic traction of the tongue called forth not the slightest response.

The method promises so good results that in the official directions of the second regiment of *pontonniers*, for the treatment of persons drowned, the government has placed lingual traction as the first means to be employed.

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[1] Bulletin de l'Académie de Médecine, [illegible]

METEOROLOGICAL RECORD,

For the week ending September 2, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..27	30.08	70	75	65	[illegible]	88	[illegible]	F.	S.W.	15	12	R.	O.	0.07
M..28	30.01	78	85	70	86	87	86	S.W.	S.	14	9	O.	O.	
T..29	[illegible]	75	81	71	91	62	77	S.	S.W.	33	32	R.	C.	0.24
W..30	30.04	68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	N.W.	16	7	C.	C.	
T..31	30.14	68	78	[illegible]	[illegible]	[illegible]	58	W.	N.W.	7	5	C.	C.	
F.. 1	30.10	[illegible]	[illegible]	57	[illegible]	74	74	N.E.	S.E.	9	9	C.	R.	
S.. 2	29.90	64	71	[illegible]	86	73	79	S.E.	N.W.	14	7	O.	O.	0.37
☞	29.99		71	62			74							0.68

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 2, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal Diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	759	351	21.32	13.91	14.30	1.17	2.86
Chicago	1,438,000	521	299	[illegible]	5.89	18.62	4.94	4.75
Philadelphia	1,115,562	469	190	19.74	10.71	11.97	2.51	3.36
Brooklyn	978,394	451	251	29.04	8.80	13.98	1.54	2.64
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	245	107	27.88	7.79	19.68	1.64	3.69
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	114	42	26.70	6.23	13.35	6.23	1.78
Cincinnati	[illegible]	102	40	15.68	10.78	7.84	1.96	4.90
Cleveland	[illegible]	[illegible]	65	35.69	4.98	25.73	1.66	1.66
Pittsburg	[illegible]	94	[illegible]	39.22	10.60	18.02	7.42	6.36
Milwaukee	250,000	116	77	37.84	6.88	30.15	1.72	4.30
Nashville	87,754	41	13	21.94	9.76	10.32	10.32	—
Charleston	65,165	29	11	13.80	3.45	6.90		—
Portland	40,000	22	9	27.24	9.08	18.16	9.08	—
Worcester	96,217	46	24	41.23	2.17	34.72	2.17	—
Fall River	87,411	[illegible]	[illegible]	41.50	1.66	39.84	1.66	—
Lowell	87,191	33	24	12.12	9.09	39.39	—	—
Cambridge	77,100	22	14	31.78	9.08	31.78	—	—
Lynn	62,656	30	15	26.66	10.00	20.00	—	—
Springfield	48,684	16	5	31.25	13.00	25.00	6.25	—
Lawrence	48,355	—	—	—		—	—	—
New Bedford	[illegible]	24	15	50.00	—	37.44	12.48	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	11	7	27.27	—	27.27	—	—
Brockton	32,140	7	4	28.56	28.56	28.56	—	—
Haverhill	31,396	11	4	45.45	27.27	45.45	—	—
Chelsea	[illegible]	9	2	—	22.22	—	—	—
Malden	29,394	5	3	40.00	—	40.00	—	—
Newton	[illegible]	—	—	—	—	—	—	—
Fitchburg	27,146	8	4	25.00	—	25.00	—	—
Taunton	26,972	13	5	23.07	15.38	23.07	—	—
Gloucester	26,688	5	4	—	—	—	—	—
Waltham	22,058	9	5	22.22	22.22	22.22	—	—
Quincy	19,642	3	0	33.33	66.66	-	33.33	—
Pittsfield	18,802	5	4	60.00	40.00	60.00	-	—
Everett	16,585	6	4	33.33	—	16.66	16.66	—
Northampton	16,331	4	1	50.00	—	25.00	25.00	—
Newburyport	14,073	5	4	60.00	—	60.00	—	-
Amesbury	10,920	2	2	100.0	—	100.0	—	—

Deaths reported 3,459: under five years of age 1,717; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 952, diarrhœal diseases 655, consumption 520, acute lung diseases 204, diphtheria and croup 107, typhoid fever 91, whooping-cough 40, scarlet fever 23, cerebro-spinal meningitis 22, malarial fever 9, measles 5.

From whooping-cough Chicago 12, New York 9, Philadelphia 6, Pittsburgh 4, Washington and Cleveland 2 each, Brooklyn, Boston, Cincinnati, Milwaukee and Charleston 1 each. From scarlet fever Boston 4, New York, Philadelphia and Pittsburgh 3 each, Chicago and Cleveland 2 each, Milwaukee, Nashville, Lowell, Lynn, Woburn and Medford 1 each. From cerebro-spinal meningitis Chicago 6, Cleveland 4, New York and Washington 3 each, Brooklyn and Worcester 2 each, Lynn and Somerville 1 each. From malarial fever New York 5, Nashville 2, Philadelphia and Charleston 1 each. From measles New York 2, Brooklyn, Boston and Washington 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending August 26th, the death-rate was 21.6. Deaths reported 4,283; acute diseases of the respiratory organs (London) 162, diarrhœa 707, whooping-cough 74, diphtheria 66, measles 62, scarlet fever 55, fever 55, small-pox (London 3, West Ham, Leicester, Oldham and Blackburn 1 each) 7.

The death-rates ranged from 13.4 in Croydon to 33.2 in Blackburn; Birmingham 21.8, Bradford 26.4, Derby 17.1, Halifax 18.7, Hull 27.0, Leeds 24.8, Leicester 20.3, Liverpool 23.8, London 20.8, Manchester 24.4, Newcastle-on-Tyne 22.5, Nottingham 18.0, Sheffield 28.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 2, 1893, TO SEPTEMBER 8, 1893.

A board of officers to consist of **Colonel Joseph C. Baily**, assistant surgeon-general; **Major Calvin DeWitt**, surgeon, and **Major Henry M. Cronkhite**, surgeon, is appointed to meet at the call of the president thereof, at San Antonio, Texas, for the examination of such officers as may be ordered before it, with a view of determining their fitness for promotion.

Captain Henry S. Kilbourne, assistant surgeon, will report in person to **Colonel Joseph C. Baily**, assistant surgeon-general, president of the examining board, appointed to meet at San Antonio, Texas, for examination for promotion.

Captain Marcus E. Taylor, assistant surgeon, having been found by an Army Retiring Board, incapacitated for active service, is granted leave of absence until further orders, on account of disability.

Leave of absence for four months, to take effect on or about October 25, 1893, is granted **First-Lieut. Allen M. Smith**, assistant surgeon, U. S. A.

Captain Julian M. Cabell, assistant surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and ordered to Washington Barracks, D. C., for duty with the company of instruction of the hospital corps.

RECENT DEATHS.

Charles W. Parsons, M.D., Professor of Physiology in Brown University, died at Providence, R. I., September 2d, aged seventy years. He was the recipient of the Fisk Fund Prizes for 1848 and 1854. He was a member of the class of 1840, Harvard College.

Austin K. Gould, M.D., died at Worcester, September 8th, aged sixty-seven years. During the War of the Rebellion he served as surgeon in charge of a division hospital at Baton Rouge and at Wilderness Run. He was a prisoner for several months at Andersonville.

W. M. Graily Hewitt, M.D., Consulting Obstetric Physician to University College Hospital and Emeritus Professor of Obstetric Medicine in University College, died in London, August 27th, aged sixty-five years. He contributed many papers to obstetrical and gynecological literature. He was lately President of the Obstetrical Society of London and an honorary member of the American Gynecological Society.

BOOKS AND PAMPHLETS RECEIVED.

Pneumonia Among the Insane. By Eliot Gorton, M.D. Reprint. 1893.

Suturing the Tendo Achillis in the Correction of Deformities of the Feet. By H. Augustus Wilson, M.D. Reprint. 1893.

Therapeutical Superstition. By Geo. T. Welch, M.D., Ex-President of the New Jersey State Medical Society. Reprint. 1893.

A Practical System of Studying the German Language for Physicians and Medical Students for Self-instruction. By Albert Pick, M.D. Part II.

Sterilization of Milk at 75° C. (Pasteurization) and its Efficiency in Destroying Pathogenic Organisms. By Rowland Godfrey Freeman, M.D. Reprint. 1893.

The Throat and Nose and their Diseases. Illustrated. By Lennox Browne, F.R.C.S.E., Senior Surgeon to the London Throat and Ear Hospital, etc. Fourth edition. Philadelphia: Lea Brothers & Co. 1893.

Outlines of Practical Hygiene adapted to American Conditions. By C. Gilman Currier, M.D., Visiting Physician to the New York City Hospitals; Fellow of the New York Academy of Medicine; Member of the New York Pathological Society; Member of the American Medical Association, etc. New York: E. B. Treat. 1893.

Lectures.

MEDICAL EDUCATION IN THE UNITED STATES.[1]

BY J. COLLINS WARREN, M.D.,
Professor of Surgery in Harvard University, President of the Section

GENTLEMEN: — The work of this Section is of a character which does not usually form a prominent part in the proceedings of medical gatherings.

In almost any department of education, pedagogy or the science of teaching is a recognized specialty.

The rapid progress which has been made in medical education in this country within the last few years has brought about such profound changes in methods of instruction, and the strides which medical science is making all over the civilized globe are bringing into view so many new fields of work, that the teachers of to-day have a far more complex and difficult task than was presented to their predecessors. The art of teaching medicine has not been taught, in this country at least; the time has arrived to take up the subject.

In introducing such a subject as this, it seems appropriate to take a brief retrospective glance at the history of medical education in this country.

There lies before me as I write, a quaint little volume entitled, "A Discourse upon the Institution of Medical Schools in America," published in 1765. It bears the following inscription:

"To Doctor John Warren, Physician in Boston, This Copy is presented by his respectful and affectionate Friend, John Morgan, Philad'a, Feb. 27, 1783." This book may be safely regarded as the first contribution to the subject which we are to discuss to-day and the two dates are memorable; the former indicating the foundation of the medical department of the University of Pennsylvania, and the latter the birth of the medical department of Harvard University.

Dr. Morgan justly remarks that "medicine is a science as important in its object as it is difficult in the acquisition. It is very extensive in its researches and presupposes the knowledge of many other sciences. The cultivation of it requires no small abilities, and demands of those who engage in the arduous pursuit an enlarged and benevolent mind."

It is interesting to note that one whom we might justly look upon as the father of medical education in this country and who "had spent five years in Europe under the most celebrated master in every branch of medicine," should have taken so optimistic a view of the knowledge of medicine at that time as to say: "The industry of many centuries has already been employed to bring Physic to that degree of perfection at which it is now arrived." Fortunately he adds: "It will still require a long time to remove the obscurities which yet veil many parts of it."

Three years after this book was written, Pennsylvania held her first medical commencement and the provost justly remarked: "This may be considered the birthday of medical honors in America."

The men who started this movement had received much encouragement from across the ocean and the remark of one of their teachers, Dr. John Fothergill of London, is of special interest to those concerned in the work of this congress. Writing to James Pemberton in 1762 he recommended Drs. Shippen and Morgan as men well qualified for the work of teachers, "both of whom," he says, "will not only be useful to the province in their employment but if suitably countenanced by the legislature will be able to erect a school of physic among you that may draw students from various parts of America and the West Indies."

During the colonial period of our history it was the custom for young men who entered upon the study of medicine to become regularly apprenticed to some practitioner for a term of three or four years during which time the preceptor was entitled to the students' services in preparing and dispensing medicine and serving as an assistant in minor surgical operations. As a return for this, the physician was obliged to give the student detailed and thorough instruction in all the branches of medicine. Many of the leading men frequently had several students in their office, constituting a small class, who were drilled as regularly in their studies as they would be in college. In some instances the term of apprenticeship was extended even to six or seven years.[2]

When the medical school sprang into existence it was at first intended merely to supplement the apprentice system, and as means of communication of one part of the country with another were exceedingly limited it was found desirable to concentrate school work into as small a part of the year as possible. Hence the origin of the short term of four months which has clung so persistently to the American system.

I will not undertake to weary you with a detailed account of the history of the development of our system of education. Suffice it to say that the close of the century found schools established not only in Pennsylvania and Massachusetts but in New York, Maryland and Vermont. There were, however, in 1810 only five medical schools in existence with an aggregate number of medical students of about 650, of whom 100 received the degree either of bachelor or doctor of medicine. The bachelor's degree was given to those who had attended one full course of college instruction. It was hoped that such students after a short period of practice would eventually return to take the higher degree, but as this expectation was not fulfilled the degree of bachelor of medicine was soon wisely abolished.

A noticeable feature of the education of that early period in our medical history were the requirements for a high standard of general education. Those students who did not possess a college degree were expected to pass an examination in Latin, mathematics and "Natural and Experimental Philosophy."

To obtain the degree of doctor of medicine it was necessary that the applicant should have been a bachelor of medicine for at least three years, should have attained the age of twenty-four years and should write and defend a thesis publicly in the college.[3]

When we consider how imperfect was the knowledge of chemistry, physiology and even anatomy, and many other branches of medical science, and how little of what we now consider the foundation of medical education there was to teach — such a course cannot be regarded as a very complete and exacting one.

"Under these influences the first thirty years sufficed to cause the bachelor's degree to be abandoned by all the schools, the number of professors in each school to be double, and the length of the annual college term to be shortened one-third." (Davis.)

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[1] An Address delivered before the Section on Pedagogics of the Pan-American Medical Congress.

[2] N. S. Davis: Medical Education and Institutions in the United States of America, 1877.

[3] William Pepper: Higher Medical [illegible], 1877.

Such was the standard of education with which the present century opened. New schools continued to be created, not infrequently in connection with some university, as in 1810 at Yale University, in 1817 in Lexington, Ky., in 1820 at Brunswick, Me., in 1825 at Charlottesville, Virginia, until in 1840 twenty-six new medical colleges had been added to the list, the whole number of students in the country amounting to 2,500, the population in that year being 17,069,453.

A glance at the report of a committee to the Medical Society of the State of New York in 1833, gives a good idea of the amount of work done by the schools at that period.

In the twenty schools mentioned in this report the number of courses of lectures required was two, with one exception — that of the University of Virginia, where three courses were required; and to the credit of this university be it said, the length of each course was ten months, whereas, the almost invariable custom of the other schools was to give a course of four months' duration only. The time of study purported, however, to be in all cases three years, "including the time devoted to lectures," as is stated in most of the reports. This straw indicates that at that time the chief dependence, or nearly so, was placed upon the extra-mural instruction which was given to the student. At Yale University there was this additional requirement, namely, that the student was required to study four years "if he had not graduated," which phrase, I presume, means if he had not already taken the academic degree. This seems to be the first intimation that a longer term than the standard then set was necessary for a complete equipment for the practice of medicine.

The Medical Institution of the State of Georgia (incorporated in 1828) gave at first the bachelor's degree with one year of study, but immediately abandoned it for the usual curriculum.

In the University of Pennsylvania, to which we look for the standard in these early, as well as later days, two full courses were required, but as in many other schools one course only was demanded from those who had attended a course at some other reputable school. In addition, a course of clinical instruction in one of the Philadelphia hospitals was required.

The course was then three years in length, but as each course of lectures lasted only four months, it was expected that during the remaining portion of the first two years the student should receive private instruction.

As the period of the school term was so short, it is interesting to note at what time of the year the various courses of lectures began.

This, it will be seen, varied greatly according to the geographical position of the institution. At Dartmouth and the University of Vermont the term began in August. In Bowdoin College, Maine, however, it began in the middle of July, continuing until the middle of May, that is, the term time in the far north was in the summer or spring.

At Yale and Harvard and in Philadelphia and New York the term opened at the end of October or the beginning of November, as did also the schools in North Carolina and Kentucky. The University of Virginia, with its long course of ten months, began September 10th.

Although the term time was exceedingly short in some schools a large amount of work was crowded into the daily routine of the students. Five or six systematic lectures a day, with attendance on clinics and dissections when possible, was considered nothing more than a fair amount of work for the medical student to digest properly.

This system of teaching remained practically unaltered in 1851, if we may judge from a report to the Committee on Medical Education of the American Medical Association.[4] In regard to the private instruction which was supposed to continue during the remaining eight months of the year, the report states that a very large proportion of students simply read medicine under the direction of their preceptors. Anything like careful instruction upon the part of the teachers did not exist. The student neither while attending lectures nor while in his preceptor's office was encouraged in anything like faithful and rigid study. To remedy the defect, private schools for teaching medicine were founded by enterprising physicians and surgeons and these quiz classes which were then inaugurated, became a prominent feature of the national system of teaching. Many a distinguished professor has first won his spurs at these private schools, and many valuable experiments in medical education were carried on by these men. As the college term has lengthened, the necessity for these accessory courses has diminished, and in many cities the extra-mural instruction, whether by private school or by teacher, has passed into history. No one will, I presume, regret the departure of the year of private teaching, "by some respectable practitioner," whose certificate, purchased by a handsome fee, came eventually to have so little meaning. When this custom was first inaugurated it was the sole method of inspection, and during the long period of apprenticeship the student received a large amount of instruction of the most valuable sort. When the medical school came into existence the attempt was made to combine the two systems. The practitioner, relieved from the responsibilities of giving a complete course of study to the student, gradually relaxed his efforts as a teacher until this part of his daily work came to have only a nominal value.

According to Davis, it consisted in 1877 in little more than the registry of the student's name in the doctor's office, permission to read the books of his library or not, as he chose, and the giving of a certificate of time of study for the student to take to the medical college where he expected to graduate.

At the beginning of this century the successful practitioner gave a prominent place in his household to the medical student. I have often heard my father and many other practitioners of his day tell stories of the school life of those times. The office in the old homestead where I began the practice of medicine, then a luxurious library, was in those times a plain room with a sanded floor, occupied during the day by a small band of medical students who all boarded in the same house. The old room was the scene of many amusing stories of schoolboy life, and also of thrilling tales of escape, from the indignant pursuer, by the hero of some graveyard scrape which was rendered necessary by the peculiar laws of that period. This phase of student life has long since passed away and the equally agreeable and far more profitable experience of hospital life has taken its place. Would that I could add that such hospital experience was now the privilege of every medical student in the land.

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[4] W. Hooker, M.D., 1851.

As we approach the middle of the century, we find the nation growing rapidly in population and prosperity, and a corresponding increase in the numbers and activity of the medical profession. From 1830 to 1845 the number of medical schools in the United States had more than doubled.

At a meeting of the Medical Society of the State of New York in 1839, when the subject of medical education was brought forward, it was proposed to hold a national medical convention the following year in Philadelphia, consisting of representatives from the different schools and State societies. No response was made to the action of this society, but in 1844 Dr. N. S. Davis, then a delegate from Broome County, New York, offered a resolution that a national convention be called in 1846, and the American Medical Association thus sprang into existence, the fundamental idea, which brought about the formation of the Association, being the improvement of our system of medical education.

It was high time that some such movement should take place, as the rapid increase of the number of medical schools brought with it a constant increase in the laxity of methods of teaching.

The equipment of a new school was sometimes pathetic in its meagerness — a manikin and a few lecture rooms constituting the entire "plant" of the infant institution. It would not do to question the dean too curiously about the clinical facilities which the school enjoyed; and as for laboratory work there were few teachers sufficiently advanced in their ideas to think of criticising the absence of such instruction. There was, indeed, no time for it. Every available space in the tabular view was filled with lecture hours. Professors were asked to come from neighboring towns to assist in teaching, and often gave two lectures in the same day. This cramming process, which seems so peculiarly American in its hustling activity, is perpetuated to the present day in a limited number of schools, chiefly those situated far from medical centres. As Oliver Wendell Holmes has said, life at that time was cheap; medical visits in the country were worth only twenty-five cents apiece, and the ambitious student could not afford to make an expensive outlay for his future work.

The American Medical Association therefore justly put on record its opinion, "that the abuses which exist in the modes of medical education pursued in this country demand the serious consideration of the profession," and at each meeting it continued to sound a note of warning on this all-important subject.

One of the principal reforms which it proposed to bring about was the lengthening of the term of each year from four to six months, and you will doubtless be somewhat surprised to hear that at the second meeting of the Association, which was held in Boston, a paper was presented from the faculty of Harvard University opposing this proposition.

Tempora mutantur et nos mutamur in illis.

If Harvard was unwilling to lead in the matter of reform at that time, it is not surprising that the other schools should not have been persuaded to change their customs. To the Chicago Medical College — which was founded in 1859 — must be given the credit of having been the first to attempt to lengthen the college course and to establish the system of teaching upon the so-called graded plan.[5] The school was in fact organized for this express purpose.

Little change was, however, effected by the Association in the methods of teaching at that time, although the discussions which were constantly held were destined eventually to bring forth good fruit. During the following decade little was done in the way of reform.

Graduating from the academic department of Harvard in 1863, I had an opportunity to study personally the methods in vogue at that time and am the more competent to express an opinion as I passed one year of my course of study in Philadelphia. The old system of medical education was then in all its glory and presented a striking contrast to one who had been subjected for four years to the strict discipline of a well-conducted university.

The course of lectures in Philadelphia began about the first of November, and the day was occupied in a bewildering succession of lectures, on all of which the student felt called upon to attend, as he had been obliged to "take out tickets" for the full course. The teachers were able, conscientious, and in many cases brilliant men, and many a lesson then learned has been of value in after life. Clinical teaching was, however, largely crowded aside by the superabundance of systematic lectures. The course came to an end on the first of March, and the class — which was an enormous one — was allowed to scatter to the four quarters of the country. Many of my classmates returned the following autumn, and after attendance on a second course of lectures and having also handed in the certificate of study from the "respectable practitioner" were able to graduate in the following March; that is, after having been connected with the school less than eighteen months. This may appear to the younger members of this Section an absurdly short curriculum, but there was a considerable number of enterprising young men who did not propose to occupy so long a time in obtaining their education.

You will remember what has already been said about the period of the year occupied by the school term. At that time there were not only schools which had their college "year" in the winter, but there were spring "years" and summer "years" as well.

Several of my friends proposed accordingly, after leaving Philadelphia in March to take a spring "year" at another school, in accordance with a custom which many at that time followed. Such a student was therefore able on July 1st to show to the examining body, tickets for two full courses of lectures and a letter testifying to private instruction. It was notorious that many students at that time were able to obtain a degree after nine months only of medical study. The custom of short courses of study at different periods of the year unfortunately still prevails. This zodiacal paradox has not yet been fully eliminated from the medical calendar. The condition of teaching at Harvard was practically the same as at Philadelphia.

It is not surprising that the best class of students were dissatisfied with the opportunities, and that the number of those who found it necessary to go to Europe to complete their education was constantly increasing. Two and even three years of study was not considered too long a time to occupy in this manner.

[5] N. S. Davis, Contributions to the History of Med. Ed., etc., 1877.

It is true that spring terms of a supplementary nature were organized by most schools, and those students who chose to remain could receive instruction throughout the year. The majority of students, however, disappeared, many of them employing their time in other occupations to earn sufficient money to pay for a second course of lectures. The class of individuals who studied medicine at that time seemed far inferior to the medical student of to-day in culture and refinement. President Eliot says of the medical students of that period: "In this university, until the reformation of the school in 1870–71, the medical students were noticeably inferior in bearing, manners and discipline to the students of the other departments; they are now (1888) indistinguishable from other students."

The date which I have just mentioned marks the era of a great change in the history of medical education. The rising generation of teachers were not content with the antiquated methods of a previous century; they had learned of a new order of things in the centres of medical learning in Europe. As the old generation of teachers went out and a new one came in, the modern ways of teaching grew into a substantial system which had come to stay. Harvard adopted the graded course of three years' study, but she did also far more than that — and in this respect she stands in advance of almost every other school in the country — she lengthened her course to nine months, so that her two terms correspond with those of the other departments of the university and represent a full year's work.

I will not undertake to record the history of the reform in medical education since that time; it is familiar to most of you. The example which has been set to the rest of the country by the University of Pennsylvania and by the College of Physicians and Surgeons of New York is too well known for me to repeat them here.

While criticising, as I have done, the work of a previous generation, I ought to remind you that our forefathers accomplished what they did only by individual efforts. There were no governments, and as a rule no liberal benefactors to back them in their undertakings. Their schools had to be conducted on business principles, with a keen eye to the practical success of their venture. During the past twenty years, it is true, a number of State universities have been established. In the University of Michigan, and possibly in one or two other State universities, the medical professorships like those of other departments, are sustained by the income from the general endowment, independent of fees derived from medical students; but, as a rule, the success of the school has depended upon the patronage which it has received. It may be justly said, therefore, that the whole system of medical education in this country is the spontaneous outgrowth of the work of the medical profession, and that it is due to their public spirit and disinterestedness that so important a department in the educational development of a great nation has been brought to its present state of excellence.

The good work has, however, but just begun. The reform of medical education is still in its infancy. If we are to believe all the glowing announcements which we read in the annual catalogues of the various schools, we might be lulled into a sense of calm security for the future; but, unfortunately, the actual practice of many, I might say a majority, of the schools does not come up to the ideals which are here set forth.

The essential points in the new scheme of education have been well stated by our President, Dr. Pepper:[6]

(1) The establishment of a preparatory examination.

(2) The lengthening of the period of study to at least three full years.

(3) The careful grading of courses.

(4) The introduction of ample clinical and laboratory instruction.

(5) The establishment of fixed salaries for the teachers.

In a general way we may obtain some notion of the improvement which has been made by a study of the report of the Illinois State Board of Health for 1891. According to this report there are now 148 medical schools of all kinds in the United States and Canada. The number of those requiring certain educational qualifications for matriculation is 129.

The number of schools requiring attendance on three or more courses of lectures was, in 1882, twenty-two. In 1891 the number was eighty-five.

There has been also a gradual increase in the duration of the lecture terms from an average of 23.5 weeks in 1882–83 to 26.3 weeks in 1890–91. In 1882–83 there were eight colleges that had but sixteen weeks; the number of colleges having terms of six months or more is now 111. The number of colleges which have graduated students at the end of the second course of lectures the present year is less than 10 per cent. of the whole number of schools in the country.

There are now in the United States thirty-two examining and licensing bodies that do not give instruction. Although the work of these licensing boards is far from uniform, a great deal has been accomplished by them. There are at the present time fifteen States with Practice Acts that require an examination of all persons desiring to practice medicine in the respective commonwealths. These States include nearly 50 per cent. of the entire population. In many States the whole complexion of the medical practice has been changed by the clarifying influences of these bodies. The reports on medical education by the Illinois board, I do not hesitate to say, have exerted a more powerful influence on the movement in education than any other publication which our medical literature has produced.

The effects of these Medical Practice Acts which establish a minimum of time spent at medical lectures and provide an examination for those who wish to become practitioners, are shown in the statistics which have just been given. At the present time State examinations are required in Minnesota, North Dakota, Montana, Washington, North Carolina, Alabama, Florida, Virginia, New Jersey, New York, Nebraska, Maryland and Utah.[7]

Millard, who has had experience in framing the act of Minnesota, believes that it would be an improvement upon the Medical Practice Acts at present in existence, to separate the two functions of the board, the licensing power and the educational supervision.

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[6] Introductory Address, Philadelphia, 1877.

[7] Millard: The Necessity and Best Methods of Regulating the Practice of Medicine. Journal Amer. Med. Ass'n., July 30, 1892.

He thinks that the best interests of the public will be observed by assigning the duties of the State licensing power to the various State Boards of Health. The regulation of all forms of education should, on the other hand, be vested in a central power consisting of a single board, to be known as a State Bureau of Education, with power to regulate all educational institutions granting degrees, together with the power of granting charters and revoking the same; particularly should this apply to all institutions wishing to afford the community any of the various forms of higher or special education.

Having thus sketched the progress of medical education up to the present time, let us now glance at some features of the present system in which it is desirable that further improvement should be made.

The importance of a preliminary training for the study of medicine is a problem which has occupied the attention of our most prominent teachers. That the medical student should have received a fair amount of education goes without saying. The importance of a proper preliminary education is thus forcibly stated by that most experienced of German teachers, Professor Billroth. He says in reply to the objection to a preliminary study of the natural sciences as a basis of a medical education:

> "The educated of all nations should not fail to encourage to their utmost, knowledge and study — in all countries and stations of life they should not fail to maintain the standard which they have set up, both for themselves and others; they should not fail to support the government in all efforts directed towards this end.
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> "The physician, the lawyer, the school teacher and the clergyman form the nucleus of culture in the community; they are, especially in the country or small towns, the representatives of the educated element of society. The people seek their advice in time of need, and they are their sole source of knowledge in many things.
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> "To neglect the education of such persons, to lower their mental and scientific standard, to bring them up so that they know no better education than the tradesman, the tailor and the cobbler, would be, in my opinion, the suppression of the educational development of a nation and is a policy both corruptible and immoral in principle, as it would inevitably ruin a nation and bring it prematurely to that point of decadence where it would become the prey of others."

The importance of these views is fully appreciated in Germany, where the professional schools are integral parts of the university, and entrance to the professional schools depends upon the previous completion of the course in philosophy, a course which corresponds to that of our academic degree.

In Dr. Holmes' suggestive article[8] on this subject it is shown that while the increase in the total number of medical students has been very great during the last decade, the increase in the number of "college men" who have entered the profession has been very slight, and in some of the more prominent schools the percentage has even slightly diminished. The author says: "It cannot then be doubted that relatively a smaller number of medical students have a bachelor's degree than in 1880, though the education of the average medical student is superior to the average medical student ten years ago." Although the proportion of medical students to students of law and divinity is greater in the United States, the relative proportion has diminished in the last ten years, whereas in Germany in the same period, a period during which medicine has become more of a science and the domain of surgery has increased under antiseptic methods, the proportion of medical students to the students of other professions has greatly increased. The reason for this variation in the proportion of students in the two countries is explained by the imperfection of our system of education. Educators have not had proper control and medicine has not been placed upon that dignified scientific basis which it enjoys in Germany.

Dr. Holmes complains that the medical department is neglected by every university in the United States. "It is farmed out or left to shift for itself."

Harvard has recently made an attempt to overcome the difficulty by a modification of the academic course. As Welch points out in an article on this subject:[9] If a young man choose the medical profession he should devote at least four years to medical studies, including the preliminary sciences. If he supplements this year with a year in a hospital and a year or two in study abroad, and all this work has been preceded by a college academic course, he would not be able to enter upon the practice of his profession much before the age of thirty.

Dr. H. P. Bowditch,[10] dean of the Medical Faculty of Harvard, has strongly advocated a change which would overcome this difficulty. The average age of students who enter the Harvard academic department, as President Eliot has shown, has been gradually rising during the whole of this century until it has reached nearly nineteen years. The student who enters the medical school therefore finds himself just beginning the preparation of the real work of his life at an age when many of his contemporaries are already engaged in the productive work of their professions. In Germany the best class of students begin their professional studies at a little earlier age than that at which our young men enter Harvard College. As the course of study leading to the degree of doctor of medicine lasts five years, it follows that the German physician is ready to begin practice before he is 23½ years old.

The average age of matriculants at Oxford is 19 years, and it is perfectly possible for an Oxford student desiring to study medicine to begin his purely professional studies before the end of his second year of college life. The dean writes me upon this subject as follows:

> "There are many students in our school who have had one or two years of college life either as special or regular students, and these have entered the medical school because they have felt the necessity of getting started in their life work. These men would have been glad to take the A.B. degree if it could have been procured in a shorter time, but they consider it too dearly purchased when it involves so much delay in beginning their professional life."

It seemed, therefore, reasonable to the Medical Faculty of Harvard to make the following proposition, namely, that the academic council should consider the expediency of granting the degree of A.B. to all undergraduates who should subsequently take the longest course of study offered at the professional school after three years' attendance in the academic department — the professional degree and that of A.B. to be given simultaneously at the end of the professional course. One of the medical studies at least can be obtained in the usual college curriculum, and general chemistry is frequently "anticipated" by students who enter the medical school. It is hoped, indeed, that this course will soon become one of the "preliminary studies" to medicine. It would be a short step to place one or two more of the scientific medical studies on the list of academic electives, and a whole year could be thus anticipated. The relations of professional schools to the university are not appreciated in the same light that they are in Germany, and the proposition of the medical faculty after much discussion was finally declined. The advantages of a more intimate relation between the medical school and the university are clearly set forth by Welch in the article referred to. The duplication of laboratories is thus avoided, and men of different branches of science are brought more intimately together. The important departments of botany, zoölogy, and comparative anatomy cannot fail to have an elevating influence upon the work done in a medical school. How much more rapidly might not original investigation progress when different branches of science work in a common cause. It is here that the great strength of German science and progress takes its origin.

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[8] [illegible] Report of the Bureau of Education on Professional Education in the United States. Jour. Amer. Med. Ass'n, January 13, 1893.

[9] Some of the Advantages of the Union of Medical School and University. 1888.

[10] Remarks made at a meeting of the Academic Council, 1887.

A movement in the same direction is the establishment in our colleges and scientific schools of courses of tuition, intended specially for the benefit of those who intend ultimately to study medicine. Such a course has been planned by Professor Shaler in the Scientific School of Harvard, and a similar course is offered by the Institute of Technology.

Professor Shaler's course preparatory to medicine consists of two years. In the first year we find physics, zoölogy, botany, general chemistry, rhetoric and elementary French or German, and freehand drawing among the studies required.

In the second year there is botany, zoölogy, comparative anatomy, geology, comparative osteology, physics, qualitative analysis and themes.

It is certainly to be hoped that the medical teachers of the United States will not remain content with the very elementary examinations which are now demanded for those students who have not received a college education.

The advantage of a previous college training is shown in some statistics given by Billings [11] of examinations conducted by the examining boards of the army and navy. Of those candidates who had a college degree 34 per cent. were successful, and of those who had no such degree 28.9 per cent. succeeded. It is interesting in this connection to note that taking the medical schools of Harvard, Yale, the College of Physicians and Bellevue Hospital of New York, the University of Pennsylvania, and the University of Virginia together, 46.1 per cent. succeeded, while for all the rest of the schools in a body, 22.3 per cent. succeeded.

One of the most prominent features of the new education is the character and amount of laboratory work which is now required by our medical school. The new building of the Harvard Medical School, erected twelve years ago, showed the importance which its faculty attached to this means of teaching the student. Already the large addition of the Sears' laboratory has more than doubled the facilities of this department of the school. The University of Pennsylvania has felt the necessity of increasing the facilities of laboratory work and has received a munificent endowment for its department of hygiene. The literature of this part of our educational system is already becoming voluminous. The recent reports of Vaughan and Holmes in behalf of the work done at the University of Michigan and of the College of Physicians and Surgeons of Chicago, respectively, show the interest which is taken in this subject in some of the western schools.

General chemistry forms so large a part of the first year's work in the Harvard Medical School that it is proposed to make room for other valuable work by making this study one of the requirements of admission. This course is already anticipated by most of the college graduates. The course on embryology and histology is at present a required one, and lasts throughout the year. Students are obliged to keep books in which drawings are made of the specimens studied, and these books are examined by the teacher. Those who do not possess microscopes are provided with them by the school, and the equipment of this department enables it to handle classes of 150 students. Professor Minot, who conducts this course, urges the addition of a course on biology to the work of the first year, as it would not only enable the student to pursue many of his studies more intelligently, but would add greatly to the value of all original work done by the student or physician.

The new four years' course has been so arranged that the technique of bacteriology comes in the first year. This is a time when the student has more time for laboratory work, and it paves the way for special work in the study of these organisms in connection with pathology, which is placed in the second year. I shall leave a more detailed statement to Professor Ernst, who will have something to say upon this subject later. Bacteriology needs no special plea to-day. It cannot even be regarded as a purely scientific study. No practitioner of medicine or surgery who emerges from one of our schools to-day should be considered properly equipped for his work unless he has been trained in such a laboratory. No physician can expect to unravel the secrets of disease without a practical knowledge of the demonstration of certain forms of bacteria, and there is certainly no better school for aseptic surgery than the bacteriological laboratory.

The study of pathology at the Harvard Medical School [12] is conducted by Professor Councilman, not only by lectures, but by demonstrations, recitations and exercises in pathological histology. The latter course, which has hitherto been optional, is now obligatory. The relation of bacteria to disease is taught by the study of certain types of disease, as tuberculosis, suppuration, pneumonia, etc.

Demonstrations are given twice a week of material obtained from the hospitals and private practitioners. This is a laboratory exercise. Individual members of the class are called upon to study the specimens. They then carry them around to the other members of the class, and demonstrate and explain to them the lesions. Each student in this way has the specimen demonstrated to him. In the course on pathological histology the student is required to make drawings of the sections studied.

An opportunity is given to a certain number of men, who have gone through with their course in pathology to act as demonstrators the following year and to assist in teaching. Places are assigned in the pathological laboratory to a certain number of students who have done well in their studies, and opportunity is given them for special study or original investigation.

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[11] Ideals of Medical Education, 1891.

[12] Bulletin of the Harvard Medical School Association, No. 4.

A type of laboratory course, which I think is peculiar to Harvard, is that on the application of bandages and surgical apparatus. It is a purely laboratory course, is given to students at the beginning of their second year and is confined to a detailed study and drill in the practical part of such work. Bandaging is taught upon the living subject and upon wooden models. The feature of this course which is perhaps most valuable is the preparation and application of all the forms of stiff bandages. In this way every member of the class learns thoroughly the elementary part of this work before he begins to practise upon patients in the hospital, and no student leaves the school without becoming an adept in the application of the stiff bandage.

Another subject which is receiving more and more attention yearly is that of clinical instruction. The weakness of this feature of medical education was one of the glaring faults of the old system, and arose out of the fact that hospitals were far less numerous than they are at the present time, and that, from the necessities of the situation, the independent origin of the medical school became a custom which has continued almost unimpaired to the present day.

In Boston the medical school flourished for nearly one-third of a century before its teachers realized the importance of this problem. A circular was then issued in 1810, in which the statement was made that "a hospital was an institution absolutely essential to a medical school." Would that all teachers of that time had realized sufficiently that fact and had educated the public to recognize the necessity of such a close relation of the two. Many of the older members of this Congress can remember the old-fashioned prejudice which resented the intrusion of students into the hospital wards. The theory of the trustee of that time was: This money was given for the cure of patients and not for the education of physicians. They could not be persuaded that the two interests were identical.

The change of feeling in more enlightened times was indicated by the benefactor of the great Johns Hopkins Hospital. At the opening of that hospital in 1889, Dr. Billings showed the advantage of such a union in the following words:

> [illegible] the sick in a hospital where medical instruction is given receive more constant, careful and thoughtful attention [illegible] will note every error in diagnosis, every failure in results [illegible] and crystalizes his own knowledge in attempting to explain, [illegible] tion, and hence it is that those cases which are lectured on receive the best treatment. I need say nothing here on [illegible] instruction in such training. Johns Hopkins understood all this, and especially directed that 'in all your arrangements in relation to this hospital you will bear constantly [illegible] shall ultimately form a part of the medical school of the [illegible]

The reaction in favor of clinical teaching is becoming daily stronger, and no school can hope to compete with the great schools of the country which does not have control of what is usually called "clinical facilities." This term must unfortunately still be used; for the number of schools which have a hospital of their own is yet exceedingly small. The union between the two is in most of our large cities becoming a more and more intimate one.

Another immense advantage which the possession of a hospital gives to a faculty is the control of appointments. Most schools are now obliged to select their teachers from [illegible] in their city who have services at times of the year which enable them to teach. These individuals are appointed by laymen who have no knowledge of or regard for the necessities of medical education. Faculties thus placed are unable to select teachers of national reputation, as there is no appointing power which enables them to give such a person the material with which to teach. This is a grave defect in our system, and one which the leaders in medical education should not forget to impress upon the profession and the public.

But, while applauding the movement in favor of clinical teaching, it is perhaps well at the present time to consider whether systematic or, as it is usually inaccurately called, "didactic" teaching should be abandoned. The discussion as carried on in medical journals, appears to lean in this direction. A course of systematic lectures enables the teacher to cover ground which he would be unable to do, even in a clinic most richly endowed with material. The method of handling the subject differs entirely from that adopted at the bedside, and in a well regulated four years' course I believe the systematic lecture should still retain a prominent place. Clinical instruction should be abundant and of the most varied kind. Instruction of the class in small sections is a most desirable feature of this department. It involves a greater expenditure of time, an increase in the teaching staff and great ability as an organizer in the head of the department. It is the squad drill, however, which brings the student in most intimate contact with disease.

To carry out these ideals necessitates a "plant" far in advance of that which the average school now possesses. No such enterprise can be undertaken without that aid which has hitherto been conspicuous by its absence. I refer to endowments; the valuable paper of Dr. Bayard Holmes already referred to gives some interesting data on this subject. He says:

> "The productive funds in the hands of medical schools, both those connected with and those independent of universities in the United States was in 1889, $249,200, while at the same time there was in the hands of schools of theology productive funds to the amount of $11,939,631. The [illegible] students who paid tuitions to the amount of $763,761, while at the same time the theological schools enrolled 6,989 students.
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> "I am able to reinforce these figures by an abstract of the statistics for medicine, theology and technology as re[illegible] 937, and productive funds amounting to $611,214. Medi-

cal departments of State Universities also received State aid in 1892 amounting to $40,500, which, if capitalized at 5 per cent., would be equal to an endowment of $810,000; making a total endowment of $1,421,214. There were 16,731 medical students in attendance.

"The theological schools report productive funds amounting to $17,599,979, and stated, at the same time, the value of their buildings and grounds was $10,720,860. They had 7,672 students in attendance.

"Technological schools report productive funds amounting to $13,229,940. These institutions received from State appropriations or municipal aid in 1891–92, $747,504, which, if capitalized at 5 per cent., would be equivalent to an endowment of $14,950,080; making a total endowment for schools of technology of $28,180,020. There were enrolled in the schools of technology 10,921 students, about one-third of whom were in preparatory courses. It will thus be seen that the endowment of theology is increasing at the rate of about two million dollars a year. The technological schools are well provided for, but medicine has scarcely raised its endowment, even at the most liberal estimate, to a million and a half."

Probably the available funds possessed by our medical schools are somewhat larger than these statistics show, but they give the proportions which are needed to impress upon us how little financial encouragment medicine receives. When we realize what a valuable factor the medical man is in the rapidly increasing development of the territory of a vast and prosperous country like ours, it seems as if his claims to receive encouragement should be listened to. He does not build railroads or organize society in new lands, but he is in the foremost rank of pioneers, with the complete equipment which our teachers can give him today, and he becomes a most valuable member of society. He protects the young colony from epidemics; without him State medicine could not exist, and States could not be provided on a basis which would ensure prosperity.

These ideas should be impressed upon our men of wealth and upon the State governments as well. In the meantime it is important that we should adopt as a principle in our new departure in education that the medical faculty should have personal control of hospital wards and management. Let this work begin in a small way at first, but with a view to future development. Such a change can only be brought about by a slow process of evolution. The sooner, therefore, the principle is recognized and adopted, the better. It is difficult for a prosperous school which has abundant opportunities for bedside teaching to realize this, but it cannot develop beyond a certain point until it has established its own independence.

I cannot help believing that in this direction lies one of the greatest avenues of development of our system of medical education in the future.

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THE MISUSE OF DRUGS IN MODERN PRACTICE.[1]

BY JOHN T. G. NICHOLS, M.D., OF CAMBRIDGE.

(Concluded from No. 11, p. 264.)

LET us now turn to the brighter side of our subject, and consider some of the great advances in the art of healing in which drugs have had no part. The work which State medicine has done was ably presented to this Society four years ago, by one who has won an enviable distinction in this department. I shall draw my illustrations from those things that come home to us in our daily work.

The advance in knowledge that has come from modern discoveries in Biology has revolutionized the art of medicine in many of its aspects. The antiseptic method has so changed the practice of surgery and of midwifery, that some most fatal diseases, which to those of us now only in middle life, were frequent reminders of the limitations of our art, are almost unknown to the younger members of this Society.

Let us carry ourselves back in memory to the operating-room of the Massachusetts General Hospital thirty years ago. It was, I suppose, as complete in its appointments as that of any hospital of the time. Its surgeons were certainly the equals in knowledge and skill of those of any institution of its kind. Taking off their coats, from motives of economy, certainly not of cleanliness, the surgeons put on the garments reserved for their work, which had hung in a dark closet since they were last used. Stained and stiff with the blood of scores of patients, they were worn, perhaps, with something of the pride which a veteran soldier feels in the uniform that bears the marks of many a hard fought field. Instruments were taken from the cases, and used without further preparation. Sponges were washed in plain water, and used from case to case. Hands were washed in soap and water only. The patients were removed to the wards, to be a source of anxiety to their attendants until their wounds were healed. That this anxiety was justified the records of the hospital will amply prove. One of those surgeons in the annual address to this Society twenty-nine years ago, thus describes what happened after operations: "I remember the time, when after an amputation, or the excision of the breast, or a large tumor, it was the universal rule to bring the edges of the cut integuments together nicely with straps, compresses, and a bandage, with the full assurance of finding the wound nearly healed on the removal of the dressings. At the present day, however, such a result is rarely attained in city practice; union by first intention being, for the past twenty years, the rare exception."[24]

I need not draw the picture of the operating-room in the same hospital to-day. You are all familiar with it. The son of the man who wrote the words I have just quoted would tell you that the exception in 1864 has become the rule in 1893.

The use of dangerous drugs as disinfectants, and in protective dressings, was considered a necessary part of antiseptic treatment in its early days. Great harm, and even death resulted from their use in no inconsiderable number of cases. Now antisepsis has given place to asepsis. Heat has largely supplanted poisonous drugs, and the treatment of wounds has become much simpler and safer, and has lost nothing in efficiency. I will not weary you with illustrations of cases to which the surgeon of to day brings healing, where the physician of thirty years ago stood helpless, happy if he could give his patient an easy death.

The statistics of lying-in hospitals since the importance of cleanliness in midwifery practice was accepted by the profession, show how great a saving of life has resulted from the discovery of this truth, which was made and announced by Semmelweis, in 1846.[25] In the wards of the Vienna hospital in which students had their clinical teaching in midwifery, the mortality averaged nearly ten per cent., while in those to which only midwives had access, it was less than four per cent. Semmelweis connected this difference in mortality with the fact that the students handled dead bodies, while the midwives did not. The discovery was made, the remedy was applied. The students were directed to wash their hands in chlorinated water before entering the lying-in wards. The mortality fell from over twelve per cent. to less than four per cent. in six months, and later, to less than two per cent. The principle of aseptic midwifery was found out. Its only advance has been in its details. Chlorine still maintains a high rank in the list of modern germicides. The profession was so blinded by theory that these facts, so plain that we wonder they were not at once accepted, were lost sight of. The literature of puerperal fever grew. The treatment by drugs was always ineffective, while the real cause was lost sight of in the many theories of its nature with which the books abounded. Semmelweis died before the truth of his discovery was recognized. Now it is proposed to build a monument to his memory as the founder of aseptic midwifery.

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[1] The Annual Discourse delivered before the Massachusetts Medical Society, June 14, 1893.

[24] Recent Progress in Surgery, by J. Mason Warren, M.D., Medical Communications of the Massachusetts Medical Society, vol. x, No. iv, Boston, 1864.

[25] London Lancet, October 29, 1892.

While we accord all honor to the man who found out the cause of puerperal septicæmia, and told us how to prevent it, we should not forget that an honored member of this Society first brought before the profession facts which should have opened its eyes to the truth. More fortunate than Semmelweis, he lives to see the correctness of his views acknowledged by all. In 1843, Oliver Wendell Holmes published his essay entitled "Puerperal Fever a Private Pestilence," in which he cited many cases showing that this disease had often followed the path of individuals, while their neighbors did not meet with it. He stated its infectious nature. He declared that a physician should cease to attend cases of labor if puerperal fever occurred in his practice; that he should not go from an autopsy to the lying-in chamber; and that he should keep himself scrupulously clean in his dress and person. These views were violently opposed by some, doubted by most, acted upon by a few. To show how theory sometimes treats facts when they happen to oppose it, I quote from the essay the words of Professor Hodge of Philadelphia: "The result of the whole discussion, will, I trust, serve not only to exalt your views of the value and dignity of our profession, but to divest your minds of the overpowering dread that you can ever become, especially to women under the extremely interesting circumstances of gestation and parturition, the minister of evil; that you can ever convey, in any possible manner, a horrible virus, so destructive in its effects, and so mysterious in its operations, as that attributed to puerperal fever." [26]

Let us narrow the illustration to a single disease. Not many in this audience can go back in memory to the time when croup was supposed to be a single disease. The sudden and noisy attack which strikes terror to the mother's heart, and summons the tired doctor from his first sleep, was looked upon as the early stage of what we know as membranous croup. All cases were subjected to the same treatment. Bleeding, mercury, antimony, were freely used. Hive syrup was a domestic remedy, which still survives in the Pharmacopœia under the name of Compound Syrup of Squill. If the patient lived, drugs got the credit. If he died, friends were comforted by the assurance that nothing had been left undone. That it would have been well if much had been left undone, no one who has seen a child in the collapse of antimonial poisoning will question.

More than fifty years ago, John Ware published his investigations on the natural history of croup. He showed that at least four diseases had been included under this name. One was so insidious in its onset that it seldom came under the notice of the physician until it was well advanced. Its diagnosis was not difficult. In almost all cases it could be determined by the presence of exudation in the throat. It was very fatal, and the treatment then in vogue certainly did no good, and probably did harm. A second form resembled the first in the character of the voice and respiration, but was distinguished from it by the absence of false membrane, and its almost certain recovery. The other forms, alarming in their early symptoms, had no exudation in the throat, and got well under simple treatment.[27] Time has confirmed these results, and bleeding, mercury, and antimony are things of the past in the treatment of croup.

Time will not allow me to pursue this subject further. The gain which our art has made from increased knowledge of the natural history of disease, cannot be overestimated. It has overthrown false and harmful methods of treatment, not by substituting others equally erroneous, but by leading us on to the solid ground of truth.

I have brought to your attention some of the ways in which, as I believe, we fail to uphold in the community correct ideas of the powers and limitations of the medical art. I have tried to set forth some of the limitations to the usefulness of drugs, and to point out the great advances which have followed a better knowledge of the natural history of disease. Let me not be understood as denying the good which drugs may do as aids to nature. The practice of our art would be dreary indeed were we wholly deprived of them. But that the great activity of the chemist and the pharmaceutist in these days is leading us away from the right path, I am convinced. The history of medicine is full of illustrations to confirm me in this belief.

It needs no argument to prove that the public does not judge our art correctly. Nor is it true to say that ignorance is the only cause of this false judgment. The public is neither ignorant nor unintelligent in most matters affecting its welfare. It is well to ask if we are not responsible, in some degree, for a state of things which we cannot fail to recognize. These words of John Bell may have an application to the present day: "I have also observed, that where there exist any very singular prejudices connected with our profession, they have first arisen among the profession, though now, perhaps, they are to be found only among the vulgar; and when there have been ill-reports among the vulgar concerning the practices of medical men, they are seldom entirely void of truth." [28]

What, then, can we do to correct the false views of the powers and limitations of the medical art which still prevail?

We should teach that disease is not caused by the laws of nature, any more than the injury that the artisan sustains from the breaking of a scaffold is caused by the law of gravitation. The law is beneficent; the harm comes from violating it. If we could live in perfect harmony with the laws of nature, it is not unreasonable to say that disease would be unknown, and the end of life as natural and as painless as its beginning. This ideal condition can never, perhaps, be reached, but just as far as we have made progress towards it, has disease grown less. We have not, and never shall have the power to change the laws of health, but we can increase our knowledge of them, and declare the absolute dependence of our art upon them.

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[26] Puerperal Fever as a Private Pestilence, by Oliver Wendell [illegible] Boston, [illegible]

[27] [illegible] Ware, [illegible]

[28] The Principles of Surgery, [illegible] London, [illegible]

Sure as is the penalty of the violation of nature's laws, there is one upon which our art securely stands. It is well stated by one of our great surgeons in these words: "After a part has been changed by disease, it tends naturally to regain a perfect state."[29] Certain in its action as is this law, plainly as its working may be seen in disease, it is not fully appreciated, even in the profession. It is not strange that the public should have incorrect views of it. Recounting the advances of modern surgery, a recent writer[30] speaks of the old practice of leaving ruptures of the abdominal viscera to the unaided efforts of nature, and contrasts it with the resources of modern surgery, quoting Billroth as saying that the *vis medicatrix naturæ* is a better physician than surgeon. With equal reason might we blame nature if she failed to cure a case of pneumonia left uncared for in the street. Nature, not the surgeon, heals the wound. The old surgeon could cut as skilfully and sew as deftly as the surgeon of to-day. Ignorance of nature's laws tied the hands of the older man; a better knowledge of them enables the modern surgeon to remove the obstacles from her path.

From the standpoint of the physician, the argument still holds good. Experience proves how little we can control disease by drugs. The results of modern study point out clearly the way by which we may hope to prevent it, or to aid nature in her attempts to cure it.

We believe we have discovered in a bacillus the cause of consumption. If the seed falls into good ground it brings forth fruit. If it falls upon stony ground it withers away. How hopeless a task it is to utterly destroy the seed, a glance at a microscopic slide of tubercular sputum will convince us. How to make the soil infertile is the problem we have to solve.

If the seed falls into good ground, and brings forth an hundred fold, we still can see the working of the healing power of nature. She tries to wall off the diseased from the healthy parts. She throws off the tissues which the disease has killed. She closes the vessels which the process of destruction threatens to lay open. She tries to close the gap which is left, and she does not cease her efforts while life remains. Sometimes she succeeds in arresting the disease, and a study of these fortunate cases indicates the way our attempts to aid her should follow. The most sanguine believer in drugs will find little in this study to strengthen his faith. Pure air, good food, all things included under the name of hygiene, are the only agents in which we can put our trust.

The Cambridge Hospital has wisely chosen for the motto on its seal, these words, — "Man tends, God mends." The truth they express will only be made clearer as science advances towards perfect knowledge.

The wise general never fights on the ground his enemy has chosen, if he can avoid it. The quack takes his stand on the power of drugs to cure disease. Here he is strong. He can use the argument of *post hoc, ergo propter hoc*, more effectively than the educated physician. Restrained by no considerations of truth or humanity, his promises of cure are marred by no ifs and buts. We cannot wonder that the public, comparing his ways with ours, and finding the points of likeness I have described, should so often choose the broad way he offers, rather than the narrow way which rational medicine indicates as the only path to health.

Every man, says Bacon, owes a debt to his profession. It is given to few to be the discoverers of great truths, but the humblest of us may do his part to raise our art to a higher level. Let us give to drugs their proper subordinate place, using only those which experience has proved to be safe. Let us do all that in us lies to aid nature in her work. Slow to accept praise for our successes, let us study our failures with candid minds, and report them honestly, that others may learn from them. So shall we lend our influence to uphold in the community correct views of the powers and limitations of medical science and art, and to make clear the distinction between the regular practice of medicine, and the practice of quackery.

In thus discharging the debt due our profession, we shall best fulfil the duty we owe our patients. The relation of the physician to his patient is a sacred one. The sick man puts his life in our hands. He follows our directions without question. We have no more right to experiment upon him with a doubtful drug, without his knowledge, than the surgeon has to perform an operation without his consent. The law protects him from the operation he does not consent to; the moral law alone guards him from the drug which may be more dangerous than the surgeon's knife. "The first great law in therapeutics is to do no hurt."

And, finally, to use the words of Jacob Bigelow, "the importance and usefulness of the medical profession, instead of being diminished, will always be elevated, exactly in proportion as it understands itself, weighs justly its own powers, and professes simply what it can accomplish. It is no derogation from the importance of our art that we cannot always control the events of life and death, or even of health and sickness. The incompetency which we feel in this respect, is shared by almost every man upon whom the great responsibilities of society are devolved. The statesman cannot control the destinies of nations, nor the military commander the event of battles. The most eloquent pleader may fail to convince the judgment of his hearers, and the most skilful pilot may not be able to weather the storm. Yet it is not the less necessary that responsible men should study, deeply and understandingly, the science of their respective vocations. It is not the less important for the sake of those whose safety is, and always will be, committed to their charge, that they should look with unbiassed judgment upon the necessary result of inevitable causes. And while an earnest and inquiring solicitude should always be kept alive in regard to the improvement of professional knowledge, it should never be forgotten that knowledge has for its only just and lasting foundation, a rigid, impartial and inflexible requisition of the truth."[31]

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[29] Paget: Surgical Pathology.

[30] Rivington: London Lancet, April 1, 1893, p. 713.

[31] Medical Communications of the Massachusetts Medical Society, vol. v, Boston, 1836.

Original Articles.

TYPHOID FEVER IN BOSTON.[1]

BY J. H. McCOLLOM, M.D.

ALTHOUGH typhoid fever is not so prevalent in Boston as some of the other zymotic diseases, yet it is sufficiently frequent to demand a careful inquiry into the cause of its comparative prevalence. The influence of typhoid fever on the death-rate of Boston can be appreciated from a study of Chart A, which shows the number of deaths from twenty-five principal causes for the year 1892. The diseases generally classed among the zymotic are indicated by the broken line. From this comparative statement it is evident that typhoid fever is not a very potent factor in increasing the death-rate of Boston.

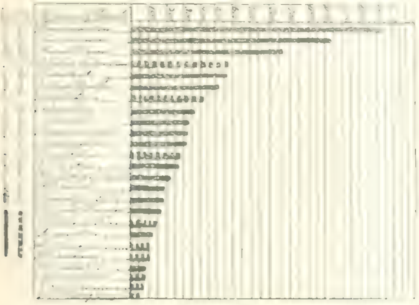

CHART A.

The effect of a good public water-supply in diminishing the prevalence of the disease is illustrated by the history of typhoid fever in this city for the past forty-seven years. A study of mortuary statistics shows that for the four years from 1846 to 1849 inclusive, when the water-supply was taken from wells the ratio of deaths per 10,000 of the living was 17.4; that after the introduction of Cochituate water in the latter part of 1848, the rate commenced to decline, so that in the semi-decade from 1850 to 1854 the ratio was 8.2 per 10,000 of the living. Since 1854, with a few exceptions, the rate has gradually diminished each year until it has fallen to 2.9, the rate in 1892. Another very interesting fact bearing on the subject of a public water-supply as compared with wells, is that in Charlestown, for the five years subsequent to the introduction of the Mystic water, 1866 to 1870, there was a very decided diminution in the ratio of deaths from this disease as compared with the five years previous to its introduction.

For the purpose of a study of the prevalence of typhoid fever in Boston as compared with the disease in ten American and six foreign cities Chart B, which shows the ratio of deaths from typhoid fever per 10,000 of the living in Boston, New York, Philadelphia, Chicago, a group of cities comprising Worcester, Lowell, Fall River, Cambridge, Lynn, Springfield and Haverhill, the aggregate population of which equals that of Boston, London, Paris, Berlin, Vienna, Glasgow and Moscow for the five years from 1888 to 1892 inclusive, has been prepared. It will be seen from this chart that the ratio of deaths per 10,000 in Boston is 3.64; that in New York the rate is slightly lower, 2.30; that in Philadelphia the rate increases to 6.49; that in Chicago the rate is 8.64; and that in the group of cities the rate is 5.11. So far as the foreign cities are concerned, it will be seen that Vienna, Berlin, London and Glasgow have respectively

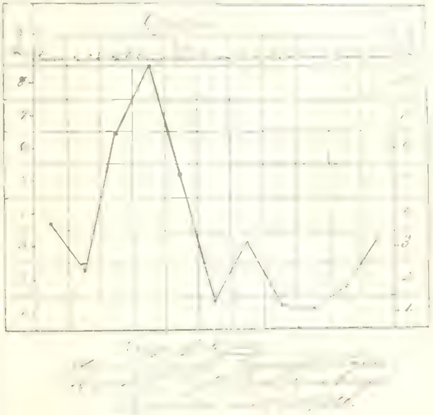

CHART B.

rates of 1.19, 1.24, 1.35 and 1.72; that Paris and Moscow have each a rate of 3.16, nearly the same as that of Boston. It should be remarked, however, that, owing to the prevalence of typhus fever in Moscow, the liability of mistaking typhoid fever for this disease is much greater than in any of the other cities, and therefore the statistics in Moscow cannot be considered absolutely reliable as far as typhoid fever is concerned. It is also evident, from a study of this chart, that in the

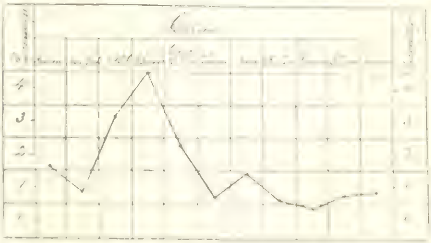

CHART C.

American cities, those having a good water-supply have a low rate, for instance, New York and Boston; that in Philadelphia and Chicago, the water-supplies of which are certainly not above reproach, the rates are comparatively high. In the group of cities it will be seen that the rate is nearly double that of Boston. While it is true that some of the cities, included in the group, have a good water-supply, it is also true that in all of them there are a greater or less number of wells which are likely to become contaminated by the discharges from typhoid fever patients, and thus prove active agents in spreading the disease.

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[1] Read before the Boston Society for Medical Improvement, May 8, 1893.

In order to avoid all sources of error in regard to the population which in some instances has been estimated and in some instances enumerated, Chart C, which shows the percentage of deaths from typhoid fever to the total mortality in these several cities, has been drawn. From this chart it will be seen that the percentage of deaths from this disease to the total mortality in Boston is 1.53; that in New York the percentage is .91; that Philadelphia and Chicago have a rate of 3.13 and 4.51, respectively. In the group of seven cities before mentioned the per cent. is 2.28. In the foreign cities it is found that London has a per cent. of .68; that in Paris the rate is 1.40; that in Berlin the rate is 1.58; that in Vienna the rate is .40; that Glasgow has a per cent of .77; and that in Moscow the rate is .83.

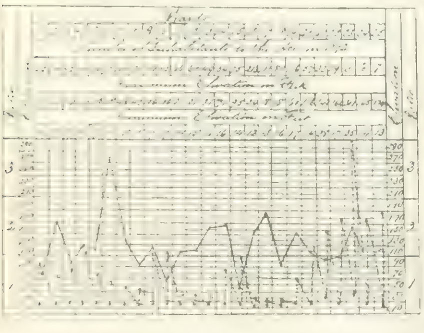


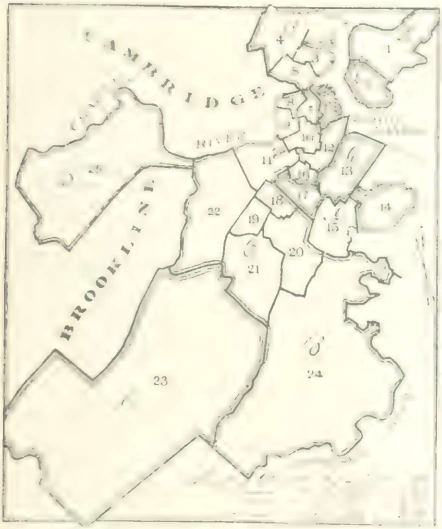
CHART D.

Chart D shows the ratio of reported cases of typhoid fever to the thousand of population in Boston for three years, from 1890 to 1892 inclusive, with the number of inhabitants to the acre in each ward in 1892, and the maximum and minimum elevation in feet above mean low water. The full line indicates the ratio of reported cases to the thousand of population, and the broken line the maximum and minimum elevation in feet. In Wards 1 and 2, comprising East Boston, it will be seen that the ratio is 1.18 and 2.11 respectively. There seems to be no satisfactory explanation of the difference between the ratios in these two wards. In this district the question of wells as a source of water-supply cannot be considered, as no wells were found where typhoid fever occurred. In Charlestown, comprising Wards 3, 4 and 5, there is very little difference in the ratios which range from 1.35 in Ward 3, to 1.69 in Ward 4. Situation near tide level is not an important agent in causing the prevalence of the disease in this locality, for the highest ratio was reached in the ward that has the greatest elevation, namely, Ward 4. The slight increase in the frequency of the disease in this ward is probably due to the fact that in this locality the majority of the population leave the city for a greater or less length of time during the summer months, and contract typhoid fever in the country. Mystic water as compared with Cochituate can have no great influence in causing the prevalence of the disease as the ratio of cases in Charlestown is lower than that of most of the other wards of the city. In the city proper, comprising Wards 6, 7, 8, 9, 10, 11, 12, 16, 17 and 18, the ratio varies from 3.20 to the thousand in Ward 6, to 1.05 in Ward 10. The average ratio for these wards is 1.77. The high rate in Ward 6 may be explained by the character of the population, which is composed of newly-arrived immigrants who are particularly susceptible to the disease, of laborers employed outside of the city in places where the water-supply is taken from wells, and of peripatetic merchants who are exposed to influences which are likely to cause typhoid fever. Ward 16, with a ratio of 1.94, the most crowded ward in the city having a population of 213 to the acre, the inhabitants of which, as a rule, remain at home during the entire year presents a marked contrast to Ward 6, with a ratio of 3.20. Concerning the other wards of the city proper, as the variation of the ratios is so little, the difference in elevation so slight, and the social conditions of the inhabitants so varied, it is impossible to draw any satisfactory conclusions regarding the prevalence of the disease. In Wards 13, 14 and 15, comprising South Boston, the highest ratio, 2.03, is reached in Ward 14, the lowest in Ward 15, .96. On general principles it would naturally be supposed, considering the character of the houses and their situation near tide level, that we should have a high ratio of cases of typhoid fever in Ward 15, and the only explanation of its comparative immunity is the fact that the majority of the inhabitants remain at home during the entire year and are not subjected to the influences of a contaminated water-supply. In Roxbury, which includes Wards 19, 20, 21 and 22, the ratios vary from 1.80 in Ward 19, to 1.44 in Ward 22. The morbidity of these four wards throws no light on the cause of the frequency of this disease. Ward 23, or West Roxbury, has a population of three to the acre, a maximum elevation of 301 feet above mean low water, and a minimum elevation of 35 feet. There is nothing in the natural condition of this ward that would seem to predispose to typhoid fever. The ward is not crowded, there is no made land in it; there are comparatively few tenement-houses, and yet its ratio of cases of typhoid fever is larger than in twenty of the other wards of the city. In only two instances during the past year have cases of typhoid fever occurred in houses where the water-supply was taken from wells, so that it is evident that contaminated wells have not been active agents in spreading the disease in this locality. In Ward 24, or Dorchester, which is not nearly so elevated as Ward 23, and in which there is a very considerable extent of marshy land, the ratio of cases to the thousand of inhabitants is 1.42, a considerable diminution as compared with Ward 23. In Ward 25, or Brighton, which is somewhat elevated and has a sandy soil, the ratio of cases to the thousand of the inhabitants is comparatively low, being 1.62.

Map E represents the city divided into sanitary districts according to the ratio of reported cases of typhoid fever to the thousand of population, for three years, from 1890 to 1892, inclusive. The districts are indicated by letters. Sanitary district A, consisting of only one ward, namely, Ward 15, has an average ratio for the three years of .96. Sanitary district B includes Wards 1, 3, 4, 5, 7, 8, 9, 10, 11, 12, 16, 18, 19, 20, 21, 22, 24 and 25. The average ratio of cases to the thousand of population is 1.53. Sanitary division C, composed of Wards 2, 13, 14, 17 and 25, has a ratio of reported cases of 2.07. Sanitary district D, Ward 6, has a ratio for the three years, 1890, 1891 and 1892, of 3.20.

The influence of defective drainage on the prevalence of typhoid fever in this city is very slight, for of the 1,537 houses where the disease occurred during 1891 and 1892, only 699 were found to have broken or improper drains. Privy vaults are so few in Boston that they can have no causal relation to typhoid fever.

It has been shown, by the fact that typhoid fever has steadily diminished in Boston the past few years, that our water-supply is above suspicion. It has been proved by the statistics of the reported cases for the past three years, that neither situation, so far as tide level is concerned, nor a crowded condition of a locality are important agents in causing the prevalence of typhoid fever. In order, therefore, to explain the frequency of the disease in Boston, it is a reasonable supposition that contaminated milk may be an active agent in spreading the disease. In the Boston *Medical and Surgical Journal* of July 19, 1888, is an extremely interesting and instructive paper by Dr. Charles Harrington, entitled, "An Epidemic of Typhoid Fever due to Infected Milk." This epidemic occurred during November and December, 1886, in the city of Cambridge. Investigation proved that 58 of 73 cases occurred in 36 families who obtained their milk from the same source. It was found that this milk came from a farm where there had been two cases of typhoid fever three weeks previous to the outbreak of the epidemic in Cambridge. As there was no local condition at this time to explain the outbreak of the disease, it therefore seems evident that the cases of typhoid fever on the milk farm were the cause of the disease in Cambridge. Prof. Wm. T. Sedgwick read a paper, January 26, 1893, before the Massachusetts Association of Boards of Health upon "An Epidemic of Typhoid Fever due to Infected Milk." After very carefully investigating the course of the epidemic, which occurred in Somerville, Prof. Sedgwick was thoroughly convinced, and with reason, that the cause of the outbreak of the disease was due to contamination of the milk by the discharges from a man in the first stages of typhoid fever. It was a significant fact that when this man was ill enough to go to bed the epidemic commenced to decline. It is unnecessary to more than allude to the many other instances on record where epidemics of typhoid fever can be absolutely traced to infected milk. As bearing on this fact, it is of interest to note that in the foreign cities where the ratio of deaths from typhoid fever is much lower than in this country, there is a most rigid and careful supervision of the milk farms both as to their sanitary condition and as to the health of the employés. In London, for instance, where typhoid fever is comparatively rare, large dairy companies have been formed whose supply of milk is based on most minute and rigorous regulations. To prevent the spread of infectious diseases by milk, the farmer is required by his contract to call a physician if any person employed in his dairy is taken ill. If the disease is infectious, the secretary of the company must be at once informed, who will indicate the measures to be taken. In the event of serious disease the delivery of milk from the farm is forbidden. Arrangements are made with local medical offices of health to obtain information as to each case of infectious disease arising in the neighborhood of a dairy. In Berlin, also, there are stringent regulations regarding persons who have come in contact with any infectious disease having anything to do with milk. Similar observations are true regarding Vienna and Glasgow. In Paris, a large proportion of the milk comes from dairies situated in the city. The employés of these dairies are subjected to a careful medical supervision, and it is very reasonable to suppose that this has a decided effect in reducing the death-rate from typhoid fever in that city. In Boston, the milk comes from so many different places and such long distances, and passes through so many hands that it would be difficult to absolutely trace the source of infection in a given case. But there can be no doubt that in Boston, as well as in many other cities, infected milk may be, and is, much more frequently than is generally supposed, a cause of an outbreak of typhoid fever. While this statement so far as Boston is concerned, may not be capable of positive demonstration, it is certainly worth the careful consideration of the members of this society.



Map F.

It is perfectly evident from a study of typhoid fever in Boston for the past few years that the disease, in the different sections of the city, is not due to a common cause such as the water-supply, for if the water was at fault we should have practically the same ratio of cases in each of the wards. Such is not the fact, however, for we find as great a difference between the wards of the city as there is between Boston and London, and Boston and Philadelphia. It may be asked if contagion is not an element in increasing the frequency of the disease. In reply to this it may be said that such a small proportion of cases could be traced to any previous exposure, that no satisfactory deductions could be reached on this point.

An attempt has been made in this paper to show:

(1) That the prevalence of typhoid fever in Boston is not due to the water-supply.

(2) That situation near tide level is not conducive to the frequency of the disease.

(3) That imperfect drainage is not an important factor.

(4) That, as the germs of typhoid fever can be easily and readily conveyed by milk, it seems reasonable to assume that the comparative prevalence of the disease in this city is due, in a great measure, to infected milk.

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THE SANITARY CONDITION OF BOSTON.[1]

BY S. H. DURGIN, M.D.

THE sanitary condition of the city may be estimated in a variety of ways and with a greater or less degree of satisfaction. A superficial view of surfaces and surroundings may give sufficient evidence to one; the lack of prevailing bad odors, the want of a high death-rate, the absence of epidemic diseases or the existence of a well-ordered and equipped health organization may be satisfactory evidence to another, that the sanitary conditions are good.

All of these conditions might temporarily exist and furnish presumptive evidence of a good sanitary condition, while a careful investigation beneath surfaces and within doors, would alone furnish data upon which a positive statement could be made. A clean dry surface, a clean well-drained soil, good public and private sewerage, immediate destruction or removal of all decomposable wastes, good food and water-supplies, and a good surveillance over all, would constitute favorable conditions for a healthful city.

For the purposes of this brief paper, I shall confine myself to a statement of a few of the principal out-door and in-door conditions as they appear to me. We cannot do better, perhaps, than to inquire as to how many of these favorable conditions we can lay claim to.

The area of the city now measures about 37 square miles, or 23,707 acres. Of this area, 1,812 acres are included in parks and public grounds. There are 558 miles of streets, of which 51 miles are paved, 204 miles are macadamized, and 282 miles are formed of gravel.

There are 56,809 dwelling-houses, and of this number there are 10,763 tenement-houses of three or more families each. A portion of the remainder of the city is occupied by various out-buildings for business purposes, leaving large tracts of unoccupied land, especially in the outlying districts.

The parks and public grounds for the most part may be said to represent good sanitary conditions. Some of the parks are not wholly completed but are rapidly approaching that desired end. The condition of some of the ponds will be improved by time; the pond on the public garden needs grading and paving for sanitary purposes. The paved streets have been greatly improved in the last two years, and, for the most part, are kept in a cleanly condition. Some of them, for the want of better paving, are very difficult to keep clean. Most streets in all cities present an unclean and offensive surface. This condition may be due to a faulty pavement, want of pavement, or a lack of care supported by a popular notion that an unclean and muddy condition of the streets has no appreciable effect upon the public health.

The macadamized streets, where much used, are unclean and offensive at least six days in the week. It would be in the interest of the public health, a cleaner atmosphere, greater public convenience and economy if all the macadamized streets, within the built-up portions of the city, were paved with asphalt or hard brick with close joints.

There are large tracts of vacant land in the outlying districts and some lying nearer the centre of the city. Some of this land is at a low grade, and in portions of it are found creeks and ponds of more or less stagnant water. This water becomes offensive and troublesome when found within the neighborhood of dwellings by becoming mixed with drainage or other foul matters.

Difficulty has been found in various ways in securing a total abatement of many of these nuisances. A resort to the courts and the use of the city's money has resulted in the abatement of the larger and more serious specimens of this class of nuisances; but there are still many delinquent owners under orders, or whose cases are in court at the present time. An improved law for use in securing the filling of such lands to a proper grade is now under consideration at the State House. It would be difficult to say to what extent this class of external or distant nuisances affect the public health, but they are unsightly, noisome, sometimes extremely offensive to smell and, doubtless, to some extent, prejudicial to the health of those within their immediate vicinity.

A very large part of the occupied area of Boston, exclusive of Dorchester, Roxbury and Brighton, has been made by raising the grade of marshes and by filling on tide-water flats. This made land is found particularly in South Boston, Charlestown, East Boston, and at the so-called North, South and West Ends of the city.

This made land is occupied principally for dwelling purposes with a dense population, and partly for business purposes. The grade of the streets in these sections is from twelve to eighteen feet above mean high water, while the cellars are below average high water, are frequently wet, and many of those in the business sections are so low as to require boxing to keep out the tide and surface-water.

It does not necessarily follow that a territory will be unhealthy because the land is made by filling and reclaiming it from tide water. A healthful residence upon such soil depends rather upon the height of the surface of the soil above the ground water-level, the character of the soil between those levels and the exclusion of the soil air from the cellar. The cellar, situated near the ground water-level and in the unclean soil, must continually receive unclean and damp air from such a soil, unless provided by special means to prevent it. Portions of this land have been made with the refuse and dirt of the city, while other portions have been filled by clean gravel from suburban hills. The cellar in one case gets the foul and damp air from the soil, and in the other it is a question of shutting out the dampness from below. For the most part, the soil of the higher elevations of the city is damp and wholly without artificial drainage, while the filled portions are at too low a grade to exclude dampness without extraordinary means.

The alley-ways of the city are numerous, occupying no insignificant portion of the city's area, and are an important part of the city's conveniences. Until recently, there has been no definite understanding as to who should take care of them. This care has been exercised in part by the city and in part by the abutters, and the condition has been most unsatisfactory. For the most part they have been unpaved, uncleaned, and a source of much complaint. It has recently been decided, however, that the city will do no more cleaning in these private ways, and the Board of Health has undertaken to secure the proper care of them by the abutters who, alone, hold the fee in them and are responsible for their condition. These places should first be well paved, and then their cleanly condition may be secured at a trifling cost.

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[1] Read before the Boston Society for Medical Improvement, May 8, 1893.

The cleaning of private yards and spaces about dwellings is a matter requiring the utmost vigilance of the health inspectors. There is no law or power known to the Board of Health by which certain people can be made to keep their premises clean for more than a few days at a time.

The old privy vaults and cesspools, with their accumulations of filth which were once so common, are now rapidly disappearing from the city. Nearly 7,000 of the privy vaults have been demolished in the last few years, and the few remaining, where a public sewer abuts the premises, are under orders to go. The yard cesspools, which are also common nuisances, are being changed from receptacles for sink and other house drainage, to those for surface drainage only.

The public sewerage is mainly good, including the improved intercepting system. More sewers are needed in many parts of the city where accumulations of filth are now being stored in vaults and cesspools, and are causing considerable annoyance. Many of the old sewers at the North and West Ends of the city are in a dilapidated condition, are very foul, and should be rebuilt without delay. The whole sewage of Cambridge, Somerville, Charlestown, Chelsea and East Boston still discharges into the Charles River and upon the flats in those sections, creating a most serious nuisance.

We see no remedy for this state of things except in the completion and use of the metropolitan intercepting sewer, which is still under construction and which ought to be completed at the earliest practical moment.

Private drainage in our city, like that in most cities, is unsatisfactory, the cause of an immense amount of inspection, complaint and annoyance, and, undoubtedly, the cause of much ill health.

To relate all that need be said concerning house drainage or plumbing in our city would make a very long story, which need not be told to-night. We have statute laws and city ordinances which specify the method, material and workmanship necessary in constructing house drainage. Plans for construction and repairs are submitted to, and the work approved by, the Inspector of Buildings. The Board of Health is called upon to find defects and to order repairs. Such repairs number each year about 4,500.

For the purpose of ascertaining to what extent defective conditions of plumbing exist, and to what extent traps are supplied and water-closets substituted for vaults, we have taken a large number of blocks of dwellings, both new and old, each season for thirteen years, and made house-to-house inspections with the following results:

Want of traps first five years, averaged 50 per cent.; during thirteen years 32 per cent.; and during the last year 22 per cent.; defective conditions of plumbing, first five years, averaged 49 per cent.; whole thirteen years 39 per cent.; and last year 34 per cent. Use of privy vaults, first five years 28 per cent.; for thirteen years 14 per cent; last year three per cent. This means not only a very poor state of plumbing, but a want of commendable progress in the substitution of a better condition, in other words, it indicates poor construction and inefficient repairs.

The removal and disposal of refuse material has become a very serious question to the city as a corporation, and to the individual citizens. At present, it is stored for a time about the dwellings, then removed by the city carts through the streets at a cost of about $170,000 per annum, and afterwards sold to the farmers to create nuisances elsewhere.

The street sweepings, house dirt, ashes, and a great variety of rubbish and refuse material, including some of the garbage, to the amount of 2,500 loads, or 100,000 cubic feet per week, are dumped in the harbor. It has always seemed to me that the kitchen waste should, by some special provision in the stove, be disposed of as soon as it is made. By this means all subsequent nuisance and expense would be avoided. In regard to the other wastes of the city which are now dumped in the harbor or upon vacant lots for filling, we are of the opinion that such material should first be burned and then used for filling.

Tenement and lodging-houses are objects for constant attention. Poor people and our newly-made citizens from abroad are much inclined to crowd into small spaces where they soon create a most unhealthful condition of things if left to themselves. We have vacated many of the worst of these buildings, have cut down and limited the number of occupants in others, burned much of the bedding, disinfected the remainder, and are enforcing a better degree of cleanliness, light and ventilation in both tenement and lodging-houses. This work can only be regarded as a most incessant and aggressive one in certain quarters of the city.

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MASTOID MEASUREMENTS.

BY W. F. [illegible], HARVARD MEDICAL SCHOOL.

I RECENTLY examined 400 crania at the Peabody Museum in Cambridge, with the view of determining (1) the relative frequency of the asymmetric mastoid processes, and (2) whether the mastoid process being small or the digastric fossa deep made any difference in the depth and direction of the lateral sinus.

I found that out of the 400 crania examined 13 (or 3.25%) had asymmetric mastoid processes; only marked differences such as could be plainly seen were taken.

This examination shows that in 96.75% the mastoids were symmetric; of the 400 crania examined 164 had either a small mastoid or a deep digastric fossa. Out of these 164, 136 (or about 83.3%) had a very deep lateral sinus coming up towards the mastoid antrum.

This percentage shows that where the digastric fossa is deep, or there is a small mastoid process, the lateral sinus is almost invariably deep, coming up towards the mastoid antrum and encroaching on the mastoid cells, so that in operating on the mastoid, if we find it small, or the digastric fossa deep, great care must be taken lest the lateral sinus be wounded.

Clinical Department.

FRACTURE AND INJURIES TO THE HEAD.

BY DAVID DANA SPEAR, A.M., M.D., FREEPORT, ME.

CASE I. A young man, age seventeen, fell upon a large broad belt, and was carried over a drum making some two hundred revolutions per minute. Thrown against the side of the building, striking his head against the rusty end of a clapboard nail, about one-third of the nail was driven through the left parietal bone and broken off flush with the surface. He was alone at the time of the accident, but was found face down upon the floor, unconscious, with stertorous breathing. The pulse was full and slow, pupils dilated — unconsciousness was complete. He could not be made to swallow anything placed in the mouth. It was impossible to remove the nail by forceps; and, of course, the only remaining thing to be done was to remove a disk of bone including the nail with a small trephine. This was done, with almost immediate return to consciousness. In about six weeks the young man returned to his work, complaining only of slight headaches when he became tired. This case occurred in the early part of my practice, previous to the days of antiseptic surgery, and may be only of interest in connection with the other cases following as illustrative of what happens to fall to the lot of village and country practice.

CASE II. Two children were coasting down a steep hill, their ages respectively six years and nine years. The sled struck against a tree; and the youngest child was dashed against it, striking the left side of her head with sufficient force to fracture the entire upper two-thirds of the parietal bone. The line of fracture was easily felt. When summoned, I found the child lying in bed, completely unconscious. Her limbs would remain in any position in which they were placed; the respiration was quiet and feeble; the pulse was feeble, frequent, and intermittent; the pupils were contracted. On placing any liquid in the mouth, it would be swallowed. I decided not to attempt any operative procedure at this time, but waited, carefully watching my patient's condition.

At the end of eleven days consciousness gradually returned; and at the end of four weeks she had so far recovered as not to need constant care and attention. During the first eleven days, ice was applied by means of a bladder placed upon her shaven head. The bowels were moved every alternate day with salines; and iodide of potassium was given in three-grain doses four times daily. At the end of six weeks recovery seemed permanent; and over the now intervening space of twelve years there have been no serious symptoms attributable to the injury.

CASE III. R. R., aged nine years, fell from a bridge a distance of fifteen feet, striking his head and left shoulder upon the rocks below. He was picked up insensible, and carried home on a mattress by several men. A physician was called, and pronounced the injury necessarily fatal. I saw the little patient about half an hour later. A fracture was found in the left parietal and frontal bone. One straight fissure extended from the lambdoid suture to the orbit, terminating a few lines internal to the supra-orbital foramen. The line of fracture crossed the coronal suture at right angles; and the whole line of fracture was three-fourths of an inch external to the median line of the vault. There was also a stellate fracture covering the upper half of the temporal bone; and the bone was so broken in three places as to allow the fragments to be driven down firmly upon the dura mater. The pupils were widely dilated, and the eyelids were closed. It was impossible to arouse the little patient. The respiration was quite full and noisy; the pulse was full but slow; deglutition absent, and any liquid placed in the mouth flowed out of it. Upon making an incision external to the fracture and around it, I was able to remove the pieces from the dura mater, to raise the depressed portions of the parietal, and to trace the first-described line with the supra-orbital foramen to the orbital portion of the frontal. The cellular tissue about the orbit was inflated, and the condition of emphysema obtained, showing that the frontal sinus had been opened.

The operation was carefully made, and with antiseptic precautions. The hair was cut from the head; the head was washed thoroughly with soap and water, and finally with a 1 to 1000 solution of bichloride. The instruments used were all sterilized, the hands washed in bichloride solution, and the sutures were of chromatized catgut.

An hour after the operation the boy became conscious. The second day the pulse reached 140; but the temperature never exceeded 99° F. After the second day the pulse became normal, and the recovery has been rapid and apparently perfect, without a single unfavorable symptom.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting Monday, May 8, 1893, the President, DR. C. F. FOLSOM, in the chair.

DR. J. H. MCCOLLOM read a paper on

TYPHOID FEVER IN BOSTON.[1]

DR. CHARLES HARRINGTON read a paper on

THE PRESENT CONDITION OF THE BOSTON WATER SUPPLY.

DR. S. H. DURGIN read a paper on

THE SANITARY CONDITION OF BOSTON.[2]

PROF. T. M. DROWN: The subject of the water-supply of Boston is one I am much interested in. I do not know that I can add anything to what Dr. Harrington has said with regard to this water-supply. I agree with him that the water-supply is good and is not growing worse, that it is growing better. I, too, have been asked scores of times whether the Boston water is fit to drink, and my answer has always been that it is good water. Those who prefer spring water on æsthetic grounds because it is colorless, have a right to their preference; but those who say there is danger in drinking the Cochituate water are simply ignorant of the conditions under which the water-supply of Boston is collected and stored. I regard it as safer drinking-water than many of the spring waters which are sold. It is impossible to get a supply of fifty million gallons a day from an uninhabited region unless we go to a great distance. A near-by supply to a great city will always have upon its borders a greater or less population. The collecting area of the Sudbury River, about 75 square miles in extent, has a population of about 350 to the square mile. Lake Cochituate has a small drainage area of 19 square miles and a population of about 850 to the square mile, the combined water-sheds having a population of approximately 450. The Mystic supply has about 850 to the square mile. By comparison it may be mentioned that the Croton water-shed in New York has 70 to the square mile.

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[1] See page 295 of the Journal.

[2] See page 298 of the Journal.

The way in which house drainage usually reaches a stream is important. If sewage enters a stream directly and the polluted water is delivered promptly to the consumer, we have the maximum of danger. Where there is no sewerage system and the water gradually soaks into the ground and reaches the reservoir or collecting basin only after prolonged filtration the danger is reduced to a minimum. Many of you may have heard of the care that is supposed to be taken with the Croton water-shed. In one of the reports of the New York State Board of Health may be seen a great number of photographs of all the houses on the water-shed. There is very little said about the care of the Boston water-shed; but I know that there is as careful supervision of it as in New York. The superintendent, Mr. Fitzgerald, has a record of every house, barn and stable, on the water-shed, and of the changes which take place from year to year. Inspection is done very thoroughly and completely to detect accidental or intentional pollution.

The drainage of South Framingham, Marlborough, and Westborough, which formerly went indirectly by soakage, through the ground into the Cochituate supply, is now entirely removed by systems of sewerage, and goes outside the drainage area. The result of this is that the drainage of a very large population on the Sudbury water-shed has no more relation to the Boston water-supply than if it were in the western part of the State.

There is another ground for safety in the Boston water-supply and that is the large size of the reservoirs and the long time it would take for any disease germs entering these reservoirs to reach the consumer. I suppose it would take any matter entering Lake Cochituate by Pegan Brook (which drains Natick) two months before it reached the consumer in Boston, and more likely it would be a much longer time. The same may also be said of the reservoirs on the Sudbury River. But to make security doubly sure filters are now being constructed to filter all the water of Pegan Brook before it enters the lake.

Few are aware of the great purifying power of porous ground. A familiar instance in this vicinity is the filter gallery on the shore of Horn Pond in Woburn. This pond is highly polluted with the drainage from tanneries, yet the filtered water in the gallery which is one hundred feet or less from the pond, is almost perfectly purified as far as organic matter is concerned. Now the ordinary ground-water of a region like the Sudbury and Cochituate water-sheds has, on the average, been filtered a great deal more thoroughly than the water of Horn Pond. Moreover, the efficacy of filtration, both in nature and in artificial sand filtration, in the removal of bacteria is very great, so that the possibility of the passage of disease germs into a water-supply after a long passage through the ground is very remote. When a drainage area becomes very densely populated, it naturally becomes unfit for a source of water for drinking. In such case there is the alternative of artificial sand filtration or the seeking of a new supply.

Prof. W. T. Sedgwick: In listening to the speakers to-night the first feeling that I had was one of satisfaction, as a citizen, that the interests of the city of Boston are in the hands of people who are studying the subject with so much apparent intelligence as we see in these papers. If any one will take the trouble to ask what is going on in some other cities of our country and to see the class of people who have charge of their sanitary interests, I think he will return home with a good deal of satisfaction. Unfortunately I lost a portion of Dr. McCollom's paper, but what I heard of it interested me very much. It is a fact that we have more typhoid fever than some other cities in proportion to our population, less also than many others; and the question naturally arises, What does it mean? I have given no special study to this side of the subject, and was therefore very glad to hear what Dr. McCollom had to say; and it seemed to me that on general principles any one interested in sanitary science must heartily agree with most of it; for if there is anything clear nowadays it is that broken drains *per se*, new-made land, bad smells, etc., are not the principal causes of typhoid fever, if, indeed, they have anything whatever to do with it. Dr. William Budd showed, years ago, that pig-sties, dung heaps and the like could exist in a country town without causing any typhoid fever. When once this was introduced, however, it might flourish in such towns more than in others similarly situated. I was interested to hear Dr. McCollom speak of the wells. I have been studying some epidemics of typhoid fever; and although I have seen a number of them, involving possibly five hundred cases, I have not yet seen a single epidemic of typhoid fever or any cluster of cases of it which I could trace to a polluted well. I earnestly believe that polluted wells have occasionally produced typhoid fever, but I think that we have laid too much stress on these; and the experiments of the Lawrence Experiment Station have taught us much in that regard. A few feet of good filtering material will effectually protect against the germs of typhoid fever and ordinary bacteria.

The State Board of Health has been making in the last three years an interesting series of experiments of epidemics of typhoid fever, and some of the conclusions that have been arrived at may be stated in this way:

One of the leading causes of typhoid fever is polluted water-supply.

The next, perhaps, in importance, or one of the next, is polluted milk-supply — I mean here infected as well as polluted. If anything stands out clearly, it is that ordinarily polluted water will not produce typhoid fever. The city of Lowell is drinking very dilute sewage all of the time, but it is only now and then that it has epidemics of typhoid fever. One of the wells in Lowell is so bad in its chemical and bacterial analysis as to stand out conspicuously among all the wells we know, and yet careful investigation has shown that people using that water are not suffering from typhoid fever more than their neighbors who do not use it. The reason is simply that it is not infected.

The third cause, and probably throughout the State the principal cause of typhoid fever, is secondary infection, not usually direct contagion but in any one of the many ways in which indirect infection may arise; and as this is less well recognized than it might be by physicians and sanitarians, it may be worth while to say just a word or two about it. One case was discovered in Provincetown in which the family consisted of ten persons. Typhoid fever was introduced into the family probably through one of the children who had been playing with the children of a neighbor's family in which there was typhoid fever. These families were Portuguese. You know how such people live. On the table of the common living-room there often stands the greater part of the day the beginning or the end of a meal — pieces of bread, cake, etc. The children come in from play. One or more of them is in the early stages of typhoid fever. They visit the privy, come back, finger the bread and cake, eating some and leaving some. Other children come in and eat of the food, and by some such vehicle as this one of the children of this family brought the germs of the disease from another family. Just two weeks from the date of the first case two more of the family of ten came down with typhoid fever. Two weeks later more came down and there were in all five successive crops of typhoid during which nine out of the ten in that family had typhoid fever at intervals of two weeks. There was no reason to suspect the sink-drain, the well or the privy — as these latter were used in common by other families. This particular family then had five successive crops of typhoid fever two weeks apart almost to a day.

The State Board of Health has collected other examples of the same sort and I think it may be safely said that the three causes which I have mentioned are the principal causes of typhoid fever.

It seems to me that it is pretty safe to conclude with Dr. McCollom that the water-supply of Boston is not productive of the typhoid fever of Boston. It seems to me, however, that it should be borne in mind that typhoid fever has been declining as the water-supply has been improving; and in the present state of our ignorance of the duration of the life of typhoid-fever germs, while we believe that such germs do not come through the water-supply of Boston, it may be wise to keep an open mind in that direction. I do not believe, however, that the typhoid fever of Boston is to be connected with the water-supply. With regard to the milk-supply, it seems to me much may be said. We have a most efficient milk inspector; but milk comes from all over New England, and no one knows the source of it exactly. Before we can decide that milk gives us this extra amount of typhoid fever, we must inquire whether our milk-supply is worse than that, for example, of New York, which has less typhoid than we have. I do not think that it is; and yet I do believe that there is a loop-hole here. I believe that some of the cases of typhoid fever in Boston are due to infected milk. Then there is the point of the people going out of town. I believe that this is a serious point. I believe that Boston, surrounded as it is with suburbs and not far from infected districts, such as Lawrence and Lowell, necessarily suffers through imported cases. Finally, there comes the matter of secondary infection, in the efficacy of which, I most firmly believe. I know of some cases in Boston in which secondary infection can be clearly traced. No one of these principal causes is in itself, probably, sufficient to account for the whole. What little excess there is, however, is probably chiefly due to the geographical situation of Boston and the migratory habits of the inhabitants. Boston is a place near regions of polluted water-supply, a place with milk-supply not entirely under control, and last and probably not least, there are abundant opportunities for secondary infection.

DR. F. W. DRAPER: The papers we have heard and the remarks we have had are full of suggestion to the sanitary student, and it is difficult to select out of the mass of material supplied, a single theme for further discussion. What I shall say will be in the line of reinforcing two points, one in Dr. McCollom's paper and the other in Dr. Durgin's. I want to emphasize what has been said by Dr. McCollom with reference to the milk-supply as a menace which should be watched continually and which has not received, it seems to me, in sanitary administration, the attention which it deserved as a probable potential source of the typhoid fever which we have in Boston. I think it is perfectly clear that the water-supply of Boston is above reproach in that matter and that we must search in other directions for the explanation of the etiology of the disease here. The milk-supply, it seems to me, presents a fair field for discussion in that relation. Occasionally, as we know, the matter has been discussed in this and other societies, but the practical results have been extremely small and not in proportion to the importance of the subject. The various epidemics that have been studied by Professor Sedgwick and others, are a demonstration that this menace is not imaginary but real. There is one other source of danger which has not been mentioned to-night in the discussion of the causation of typhoid fever, and perhaps an insignificant one from one point of view, and yet it ought not to be left out of view. I refer to the transportation of the typhoid infection by insects. The domestic house-fly is not a fastidious creature, either in its food or its habits. It can travel far and fast, and I think it quite probable that the house-fly can be the means of transporting to food from exposed typhoid stools the typhoid bacilli, and the practical lesson is in the nursing care of all typhoid patients, to promptly and thoroughly disinfect the stools so that they shall not be a source of danger.

One point suggested in Dr. Durgin's paper was the wasteful and highly improper method of disposing of the refuse of a great city. He has graphically described the method used here, and it seems to me one reform that can be inaugurated and carried out with propriety, is that the waste of the city should be more economically disposed of than at present. Cremation is the proper method and the sooner the City of Boston establishes a proper plan for that purpose, the better will our interests as a community be served and the safer will our public health be.

DR. S. W. ABBOTT: I have been much interested in these papers, particularly in the first upon typhoid fever, and I may add that during the past year or two I have made especial analyses of the whole State upon this subject, grouping the cities and towns according to the rate of deaths from typhoid fever to the population, for a period of twenty years (1871–1890). We do not know much about the reported cases except in the cities.

In the final grouping I find that Dr. McCollom's statement in regard to overcrowding is fully borne out, and that is, that typhoid fever is not a disease which is due to overcrowding. On the other hand, in seven other diseases which were considered, measles, scarlet fever, diphtheria, small-pox, cholera infantum and phthisis; in each one of these overcrowding and density of population did much to contribute to their spread; but in typhoid fever we had the highest death-rate in the more sparsely-settled districts. The Connecticut River valley seemed to be more affected than any other part of the State.

PATHOLOGICAL SPECIMENS.

Dr. Richardson: The first specimen is an enormously dilated vermiform appendix, containing two large fæcal concretions. The patient, a young woman, presented the usual symptoms of a severe localized peritonitis of five days' duration. In the right lumbar region a marked dulness was found that extended towards the median line and gradually became lost in the normal abdominal resonance. Great tenderness and pain in this region indicated unmistakably an acute inflammatory process starting, probably, in a perforated appendix situated behind the ascending colon. The local conditions demanded immediate exploration. A very small amount of fetid pus was found behind the cœcum, the posterior wall of which was apparently the seat of a very great inflammatory thickening, and through which there was a small perforation. Further search, however, showed the tip of the appendix adherent to the under surface of the caput cœci, and situated so as to point towards the bladder. On separating the presenting end of the appendix with the finger, it was found that the thickened mass was the appendix itself, slightly adherent throughout its distal portion, and inseparably grown to the bowel along its proximal half. The body of the appendix was as large as the small intestine, and contained two slender and smooth concretions, one an inch and a half and the other an inch in length. There were two perforations, one at the tip and the other near the base. By an incision through the latter, the appendix was removed close to the cœcum and the parts tamponed with gauze. The patient is doing well.

It is unusual to see a specimen like this. Appendices may be very long or very short; they may be slender or thick, but it is remarkable to find one over an inch in diameter, even when inflamed.

Recent adhesions may be separated safely and easily in this disease, but it is always dangerous to make violent or prolonged efforts to break up the adhesions of long-standing inflammation.

In this instance the peritoneal cavity was opened — a complication much to be deplored whenever unnecessary, some authorities to the contrary notwithstanding. I was gratified in reading Senn's remarks to-day in support of this view (Chicago *Clinical Review*, vol. II, page 86).

The second specimen consists of several gall-stones of unusual shape and outline, resembling blackberries. All, found in a normal gall-bladder, made their presence known by occasional attacks of biliary colic, varying in direction and intensity. For the first time, having closed the gall-bladder with interrupted sutures, I left it in the abdomen, without drainage, — the so-called ideal operation. Convalescence was unusually brief.

The third specimen, closely related to this subject, is a dissection of the cystic, common, and hepatic ducts. The internal surface of the cystic duct shows numerous transverse folds of mucous membrane, with sharp edges, which prevent the passage of an instrument in either direction, even when by tension the canal is made straight. Much more difficult, if not impossible, would be the passage of a probe when the cystic duct is in its normal position of double curve. The hepatic and common ducts present no such obstacles to instrumentation. Even the normal constriction at the duodenal orifice permits the passage of a probe of considerable size.

These peculiarities, hitherto little if at all studied with reference to surgical interference, have become of very great importance in the progress of surgical art; they illustrate the necessity of teaching, in addition to the regions of classical surgical anatomy — limited as they have necessarily been to the extremities chiefly — the relations of those deep parts which are now the field of surgical progress.

During the past two years I may have had occasion to apply a knowledge of the anatomy of the carotid and jugular, or of the parts in Scarpa's triangle half a dozen times; during the same period I have needed a familiarity with the parts about the foramen of Winslow twenty, and about the vermiform appendix at least fifty times. The surgeon of to-day must be able to recognize, therefore, arteries, veins, and other structures in regions hitherto demonstrated only by the pathologist or by the pure anatomist. The field of anatomy, therefore, taught as an applied science, may be said to include the whole body; and the student who expects to keep up with the progress of surgery must know not only the surgical anatomy of the bend of the elbow, the axilla, or the groin, but also the cerebral convolutions, the foramen of Winslow, or even the spinal cord.

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Recent Literature.

Forensic Medicine and Toxicology. By J. Dixon Mann, M.D., F.R.C.P., Professor of Medical Jurisprudence and Toxicology in Owens College, Manchester, etc. Philadelphia: P. Blakiston, Son & Co. 1893.

The literature devoted to legal medicine is not so full as to render a genuine addition to it unwelcome or superfluous. A book that shows real merit; that is not written with a purpose merely to gratify the writer's vanity, or simply to advance the publishers' commercial enterprise; that represents recognized authority; that gives new and attractive treatment to old themes; — such a volume will always win its way to favor. Judged by these tests, the work of Dr. Mann is a valuable contribution to modern medico-legal writings. Clear and didactic in style, judicial in spirit, concise yet comprehensive, it is a volume that can cordially be admitted to fellowship with older writings relating to forensic medicine and that will find congenial association with the masterpieces of Taylor and Casper and Beck and Orfila. Its primary merit is that while it discusses the usual variety of topics which are included under medical jurisprudence, it discusses them with an intelligent purpose to give them a modern and fresh flavor. It thus results that it is an attractive exception in its class; it is not a mere rehearsal and re-issue of old and familiar facts, grouped and studied by a new author; nearly all the citations are dated within the past decade and while ample justice is given to older authorities their teachings are reviewed in the light of the latest experience and observations. The tone of the book is therefore distinctly original and progressive.

It is fair to state that the chapters show some inequality in merit. The section on Wounds, for example, is clearly inferior to that on Infanticide and the Proofs of Living Birth, and to that on the Signs of Death, Cadaveric Rigidity and Putrefaction. It would seem that some themes stimulated the author's zeal and industry more than others and that, while not indifferent to any parts of his work, there were certain portions which, he felt, he could discuss with relatively greater authority and ability.

An occasional lapse from smoothness and grammatical accuracy has escaped the notice of the proof-reader of this first edition and it is to be hoped that these signs of heedlessness will not appear in later issues. The critical reader, who reasonably looks for absolute freedom from error in a treatise on forensic medicine, feels a little shock of surprise when he comes on such expressions as these: "a goodly array of examples are at hand"; "neither the one nor the other are discoverable"; "the vulva are open and tumid"; "both cornuæ of the hyoid bone"; "pregnant sufficiently long as to render possible the birth of a living child"; "there was no blackening, neither round the wound, nor on the neck, nor face." Such words, too, as "quieten," "negligible," "disposedness," "unrespired," are novelties without standing in the dictionary.

But these isolated and infrequent departures from rhetorical rectitude are not mentioned to throw discredit upon a book which can justly lay claim to recognition as a reliable and attractive treatise to which the student and practitioner of legal medicine can turn with confidence that it will offer wise and trustworthy counsel for safe guidance.

Fonctionnement de la Maison d'Accouchements Baudelocque, Clinique de la Faculté, dirigée par le Prof. A. Pinard: Année 1892. Par Dr. G. Lepage, Chef de clinique. 8vo, pp. 107. Paris: G. Steinheil. 1893.

This work is the annual report of the labors which have taken place during the year 1892 in the Baudelocque Clinic. This clinic is freely used for purposes of teaching, 224 students and numerous French and foreign graduates having received instruction during the year. The principles of asepsis are rigidly taught and enforced, as will be seen by the record of septic deaths, namely, three only in 1,834 cases, or 0.16 per cent., — a very creditable showing in a clinic so freely used by students.

The report is carefully classified, and will be useful to teachers and writers for statistical purposes. Chapter VI will be of especial interest at this time for its record of the results in the clinic with the revived operation of symphyseotomy. This operation was performed in thirteen cases, which are reported in detail. The mothers all recovered, although in several cases the convalescence was pathological; of the thirteen infants, all were born alive; but two died on the second day, and one on the third.

As a whole the report is highly creditable to the clinic; but we cannot forbear pointing out, as we have so often done, that the value of all obstetrical writings is greatly enhanced by the use of a uniform nomenclature. We cannot understand why the French obstetricians adhere to their old nomenclature. Had the new nomenclature been introduced by a German, we should not have expected the French to have adopted it; but as it was brought forward by a Scotchman at a Congress held in the United States, and as it was adopted for general use by a representative, international body, we fail to see why it should not be universally adopted, to the great convenience of all.

Elements of Human Physiology. By Ernest H. Starling, M.D., (Lond.), M.R.C.P. Small 8vo, pp. 437. Philadelphia: P. Blakiston, Son & Co. 1892.

This is an American reprint of the excellent little book by a lecturer on the subject at Guy's Hospital. It is the best *small* physiology known to the reviewer. Almost all purely histological matters are very properly omitted. Nearly every topic treated shows careful consideration of the freshest researches, there being perhaps, here and there, a tendency to lay a little too much stress upon the work of certain British experimenters. The illustrations are generally well selected and instructive. Naturally there is some disproportion of space allotted to the various topics but this is a necessary evil of small books about a big subject. The book is well calculated to supplant all "quiz-books" and "compends" as a syllabus for following lectures or for use in the cramming process which is sometimes unavoidable. The only criticisms which a somewhat cursory examination suggests are: a little weakness in the portion devoted to the chemical constituents of the body (especially as to starches and sugars); a somewhat "step-motherly" treatment of deglutition; and the statement that the residual air "amounts to about 2,000 c. c."

The Chemical Basis of the Animal Body: An Appendix to Foster's Text-Book of Physiology. Sixth edition, pp. 288. By A. Sheridan Lea, M.A., D.Sc., F.R.S. New York and London: Macmillan & Co. 1893.

This new edition of the "Appendix," the first for some ten years, will be welcome to all. It has grown into an independent work, being about four times as large as formerly, and is correspondingly better, good as it was before. In fact, there is no equally good account of the chemical side of physiology in English at the present time. Its convenient size and the fact that the part is sold separately at a reasonable price, must commend the book. Its pleasing freedom from obscuring technicality makes it an excellent book for medical students and for the practitioner who may wish to get an idea of the present views concerning ferments, ptomaines, proteids and so on. The new light recently thrown upon the composition of the sugars is briefly, but perhaps sufficiently reflected. The extensive references to the literature (quite complete to 1891) will be very useful to the student.

A slight defect is the neglect to note the synonyms of the various ferments. For example, the fat splitting ferment is now called "pialyn," but no intimation appears to be made of the existence of another name, "steapsin," which had already come into quite general use. Pialyn is also a particularly unfortunate innovation on account of its close resemblance in sound to "ptyalin," which it in no respect resembles. "Rennin," to which Foster had already committed himself, is also retained in preference to the much more suitable "pexine" of certain French writers — at least more suitable except possibly for its likeness to "pepsin."

The Creation of God. By Dr. Jacob Hartmann, M.D., St. Louis Medical College; M.B., Toronto University; M.B., Trinity College, Ontario; Member of the College of Physicians and Surgeons, Ontario; Licentiate of the Royal College of Physicians and Surgeons, Edinburgh, Scotland; Member of the County Medical Society of New York, etc., etc. New York: The Truth Seeker Company. [No date.] Pp. viii, 432.

This little volume gives Dr. Hartmann's views as to the way God was created. It will not commend him (the author) to Presbyterian synods and general assemblies, but contains an immense fund of information concerning the universe and other matters. It is illustrated by a curious "map of the intellectual faculties" and their distribution over the convolutions, which will be very instructive to students of modern views of localization. There is also a useful "map of the deluge and Garden of Eden" at the other end of the book. The thoroughness of the author's physiological training will be seen by a glance at his account of the "third nerve, motor acuti," the "hyperglossal" nerve, and of the way in which "the spinal accessory supplies some muscles of the back" (p. 236), and also of "the centre through which the vagus (pneumogastric) influences the secretions of pancreatic juice, and possibly of the other digestive juices" (p. 237). The regenerative character of his learning is also indicated on p. 304 from which we quote two sentences: "Vegetable chemical compounds, organic substances, can be produced only under certain vitalizing conditions and influences," "wherever upon the surface of this earth, the sun's rays produce a certain degree of heat, temperature, CHO may combine and evolve vegetable life."

Occasionally poetry is introduced. As it is mostly without quotation marks, we may be permitted to infer that the exhausting and extended reading of our author has not altogether prevented occasional dalliance with the muse. One sample must suffice:

"No soul you will ever find,
Trust not in it [illegible] death,
[illegible] the mind,
Oxygen is the life's breath."

Medical Pocket-Atlases. — Obstetrics: Part I. Labor. Delineated in 98 plates. By O. Schæffer, M.D., Assistant at the University Frauen-Klinic in Munich. Translated and published under the supervision of J. Clifton Edgar, M.D., Adjunct Professor of Obstetrics in the University of the City of New York, etc. New York: L. Hydel. 1893.

This little volume is the first of a proposed series of medical pocket-atlases, which are "intended to illustrate clearly and succinctly the entire field of medicine." In this atlas Dr. Schæffer has aimed to represent "the various obstetric presentations step by step in a continuous series of diagrams, which, though partly schematic, show the delivery of the child and placenta in a scientifically accurate way." The text, which is intentionally brief, is printed under each figure. There are seven folding sheets, each containing fourteen figures; the size of the book is convenient for the pocket.

Plate I is devoted to the first vertex position (O. L. A.) and its natural development; Plate II, to the varieties of the first vertex position and their normal development. Plate III treats the first face position, its natural and its operative development by version. In this latter operation Schæffer's figure makes the operator bring down both feet; we believe it is better practice to withdraw only one foot in podalic version, leaving one leg to protect the funis from pressure during the extraction. Figure 42 in this plate shows admirably the proper method of manual extraction of the placenta.

Plate IV portrays the first oblique position (transverse presentation) and its natural development by spontaneous version and by spontaneous evolution; and Plate V, the first breech position (S. L. A.), its natural and its operative development by extraction. Figure 64 makes the operator prefer the posterior groin for digital traction: the anterior buttock is almost invariably the lower and more accessible. Figures 69 and 70 picture the introduction of the operator's finger into the child's mouth in the extraction of the after-coming head: we think it is better practice to obtain, when possible, and it generally is possible, a *point d'appui* on the upper jaw, as there is always some risk of injury, from traction on the lower jaw, either to the jaw itself or to the soft parts in the mouth.

Plate VI figures various versions in oblique presentations, development of the incomplete footling presentation, and corrections of cephalic presentations. Many useful obstetric manœuvres are portrayed in this plate.

Plate VII is devoted to the application of forceps: some of the figures are excellent; but others will be less valuable to American students, as the nomenclature employed is not always that with which they are familiar.

In a work of this character the labor of the translator is inconsiderable. Although we have not the German edition at hand, we have no question that Dr. Edgar has performed his task with accuracy and success. The printing was evidently done in Germany, or, if in this country, by printers unfamiliar with English. Doubtless the occasional typographical errors will be corrected in subsequent editions. We believe the atlas will be found very useful by medical students, and we welcome it as a useful addition to the teacher's armamentarium.

Nursing: Its Principles and Practice. For Hospital and Private Use. By Isabel Adams Hampton. Illustrated, pp. 475. Philadelphia: W. B. Saunders. 1893.

This book, written by the Superintendent of Nurses and Principal of the Training School for Nurses, Johns Hopkins Hospital, shows wide and thorough acquaintance with the details of institutional nursing and instruction. Much space is given to the methods of carrying on the nursing in a large hospital and to the best arrangement of the studies of the nurses. It will prove of especial use in arranging the work in the many small hospitals now being established. For a nurse in private practice it is less useful though it contains many useful facts and hints. There is a good deal of theory and practice of medicine in the book and a few good, though rather unnecessary, illustrations.

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IMPROVEMENTS IN THE REGISTRATION OF CAUSES OF DEATH.

A COMMITTEE of the British House of Commons was appointed in March, 1893, "to inquire into the sufficiency of the existing law as to the disposal of the dead, for securing an accurate record of the causes of death in all cases, and especially for detecting them where death may have been due to poison, violence, or criminal neglect."

This Committee has held twenty-one sessions, has taken much evidence, and has made its report. This report, dated September 1, 1893, shows that there are still many defects in the registration laws of Great Britain, the class of deaths to which these defects refer being mainly those which are due to violence or to suspicious causes.

A prominent principle is brought out in this report, which is probably true everywhere, though not always in the striking degree which prevails in the crowded cities of England and Scotland. It is expressed in the following quotation: "The percentage of uncertified deaths is at its minimum at the period of life when men and women are self-supporting, when their lives are economically most valuable as bread-winners, namely, between twenty and forty, and that it increases on each side of that age-period precisely as childhood or old age renders the deceased, as a class, a burden on their friends." The percentage of uncertified deaths in England is at present about 2.7 per cent. of the total mortality, and in Scotland is as high as 5.8 per cent., and in some small districts much higher.

The coroner's system comes in for a share of criticism in this inquiry, and as usual proves to be sadly wanting, as compared with the systems of investigation in use in most Continental countries as well as in Massachusetts.

The Committee expresses itself in no doubtful language with reference to the need of reform in the matter of uncertified deaths. "We are much impressed," they say, "with the serious possibilities implied in a system which permits death and burial to take place without the production of satisfactory medical evidence of the cause of death. It is a most important duty of society to guard its members against foul play, and it appears to your Committee, that, as far as may be, it should be made impossible for any person to disappear from his place in the community without any satisfactory evidence being obtained of the cause of his disappearance. Your Committee, fortified with the weighty opinions of the witnesses who have appeared before them, have arrived at the conclusion that uncertified deaths, should, as a class, cease to exist, and that means should be devised whereby a medical certificate should be obtained in every case not certified by a registered medical practitioner in attendance."

In Paris and in other large French cities, a "Médecin Vérificateur" views every dead body, and an order for burial cannot be given till his report is made. If he finds the cause of death to be violent, suspicious or doubtful, he reports the case to the Mairie, who orders an official examination through the Procureur de la République. The proceeding in Germany is also of a like nature.

The Committee suggested, as an improvement in this direction, that medical officers should be appointed, who should investigate all causes of death which are not certified by a medical practitioner in attendance. It was also their opinion that this duty should devolve upon the medical officer of health of each district.

The Board of Health of Boston has taken the commendable course of requiring all cases of death from doubtful or unknown causes to be investigated by a competent physician; if found to be due to violence, such cases are referred to the medical examiner for further investigation. In its report for 1892 it appears that 557 deaths were thus investigated by the Board, and their causes determined. The ends of justice would be much better served if the Board of Health of every city and large town should follow the same example. A statute providing for such action would prove a useful amendment to the existing law.

Prominence is given to the fact that the true cause of death is often concealed, because the attending physician is tempted to defer to the feelings of the relatives where death has resulted from some cause which might reflect discredit upon the family, as in cases of death from delirium tremens, syphilis, insanity, etc. Hence some other cause is assigned. This disadvantage may be partially avoided by requiring that the certificate of death shall not be handed to the representatives of the deceased, but sent directly to the registrar.

The report shows that pit-burial is not uncommon in the densely crowded old cities of England; it being a common practice to dig large pits in which from fifty to sixty bodies are buried, such pits remaining open from four to six weeks, until they are filled.

With reference to other modes of burial, the Committee alludes to the subject of cremation, and states as the only objection, the liability to destruction of the evidence as to the cause of death in case of poisoning. As a remedy it is suggested in the report, that with the careful precautions adopted by the Cremation Society, there is little probability that cases of crime would escape detection, but as these precautions are voluntary, they should be made the subject of legislation.

With reference to the undertaker's fad of embalming all dead bodies, the Committee suggests that since such process introduces poisonous substances into the body and thus may hide the evidence which is essential to legal investigation, it should, therefore, be made necessary to obtain proper authority to deal with a dead body in this manner. An attempt to secure such a law was made before the Massachusetts Legislature a year ago but it was defeated.

The following is a summary of the recommendations of the Committee:

(1) That in no case should a death be registered without production of a certificate of the cause of death signed by a registered medical practitioner, or by a coroner after inquest, or in Scotland by a procurator-fiscal.

(2) That in each sanitary district a registered medical practitioner should be appointed as public medical certifier of the cause of death in cases in which a certificate from a medical practitioner in attendance is not forthcoming.

(3) That a medical practitioner in attendance should be required, before giving a certificate of death, to personally inspect the body, but if, on the ground of distance or for other sufficient reason, he is unable to make this inspection himself he should obtain and attach to the certificate of the cause of death a certificate signed by two persons, neighbors of the deceased, verifying the fact of death.

(4) That medical practitioners should be required to send certificates of death to the registrar, instead of handing them to the representatives of the deceased.

(5) That a form of certificate of death should be prescribed, and that in giving a certificate medical practitioners should be required to use such form.

(6) That it should be made a penal offence to bury or otherwise dispose of a body, except in time of epidemic, without an order from the registrar stating the place and mode of disposal, which order, after it has been acted upon, should be returned to the registrar who issued it.

(7) That it should be made an offence to retain a dead body unburied or otherwise legally disposed of beyond a period not exceeding eight days, except by permission of a magistrate.

(8) That the practice of burial in pits or common graves should be discontinued.

(9) That still-births which have the stage of development of seven months should be registered upon the certificate of a registered medical practitioner, and that it should not be permitted to bury or otherwise dispose of the still-birth until an order for burial has been issued by the registrar.

(10) That, subject always to the discretion of the Crown Office, the result of precognitions taken by the procurators-fiscal in Scotland, or the precognitions themselves, should be communicated to the representatives of the deceased when application is made for the same.

THE PHARMACOPŒIA OF 1890.

It is a pleasure, on account of its excellence, to announce to the readers of the JOURNAL the appearance of the new Pharmacopœia, which will be official on January 1, 1894, and this seventh decennial edition puts the medical profession again under obligation to the Committee on Revision. It differs from that of 1880 in various ways. Ninety articles, formerly official, have been wisely omitted and among these may be mentioned the abstracts, preparations that have never justified themselves. Nearly as many articles have been added to the official list and the Committee have shown much discrimination in the selection of them. The following illustrate the character of their choice: cocaine hydrochlorate, strophanthus, vegetable cathartic pills, which cannot produce the serious symptoms sometimes following the continued use of compound cathartic pills, a ten-volume solution of hydrogen peroxide, here called hydrogen dioxide, the strength of which is so determined that this solution is the equivalent of a twenty volume solution as it is at present estimated in the United States, suppositories of glycerine, salts of strontium.

The Committee have adopted the metric system, using in most cases weights for solids and measures for liquids; they did not see fit to adopt the newly-proposed spellings, such as bromin and iodid for bromine and iodide; but they have introduced a change in chemical nomenclature, already widely accepted, in the designation of such chemical compounds as salts and oxides; by this change chloride of sodium becomes sodium chloride, nitrate of silver, silver nitrate. Likewise a number of alterations have been made in the official Latin titles; if we wish to be correct, we must write, after January 1st, opium deodoratum instead of denarcotisatum; the old term "mixtura" has been discarded and the new term "emulsum" substituted therefor in certain liquid preparations, which are properly speaking emulsions. Mixtura asafœtidæ, for instance, will therefore read emulsum asafœtidæ.

Certain changes have been made in the strength of the pharmaceutical articles and the more important of these have been tabulated so that their differing strengths in the present and the preceding Pharmacopœia may be compared at a glance. By the new method the stronger liquid preparations of opium are required to yield, on being assayed, 1.3 per cent. to 1.5 per cent. of crystallized morphine. In calx chlorata 35 per cent. instead of 25 per cent. of available chlorine is required, in liquor sodæ chloratæ 2.6 per cent. instead of 2 per cent. is required.

The tables of atomic weights, of thermometric equivalents, etc., are of especial use to pharmacists; unfortunately the very useful table of solubilities which the Pharmacopœia of 1880 contained is here omitted.

Substances which can be produced only under a patented process or which are protected by proprietary rights are not mentioned.

The profession will be repaid for familiarizing themselves with this revision.

MISDIRECTED SATIRE.

It seems that Mark Twain has recently come across a Dictionary of Medicine published about one-hundred and fifty years ago, and has proceeded to make fun of it in his characteristic style. This has aroused the indignation of an English contemporary, who considers that antique medicine is too serious a subject to be trifled with. Our contemporary allows that Mark Twain succeeds in finding prescriptions in the work, which, "read by the light of recent clinical experience, may be pronounced as tentative, crude, and even risky"; but believes that he has erred in making "no allowance for the comparatively immature physiology and pathology of the days preceding biological chemistry and the microscope and the thousand and one aids to diagnosis elaborated in the intervening century and a half of time, which have strengthened the hands of men far inferior in native ability to the author of the literary fossil referred to."

The author suspects that Mark Twain has heard of Bonetus only in this dictionary, and grieves that his treatment for a pain in the head, namely, local bloodletting, should be the occasion of his misdirected and ill-inspired ridicule. "It may be news to Mark Twain to hear that Théophile Bonet (in Latin, Bonetus) was for his time an exceedingly able and accomplished physician, the medical adviser of the then Prince of Neufchâtel, and that he has an honourable niche in every great History of Medicine, including the quite accessible article in the 'Encyclopædia Britannica,' and by every philosophical student of scientific progress is regarded as a link, and a not inconsiderable link, in the chain of medical evolution. Nothing but the implication that his readers were as unenlightened as himself could have warranted the American humorist in making fun of a well-known figure in the gallery of medical portraits." Mark Twain is warned that he "could have found much more legitimate targets for his undoubted command of the risible susceptibilities of his readers in the country of his birth than any fossil which he has succeeded in extracting from the once useful but long superseded Dictionary of Medicine at which he levels so much misdirected satire."

Although the wit of Mark Twain has often amused the British public, this looks as if he were not entirely understood in England. We doubt whether any American would expect him to make allowance for the "comparatively immature physiology and pathology of the days preceding biological chemistry," or expect him to read up an article in the "Encyclopædia Britannica," on Bonetus, before criticising his prescriptions.

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MEDICAL NOTES.

Cholera. — The cholera throughout the Mediterranean countries has declined during the last week. Russian statistics give no increase in the number of cases in St. Petersburg or Moscow, and point to a diminution in the number of cases through the provinces, but the official reports are not to be relied on. Roumania and the lower Austrian districts have no material change. In Antwerp there have been no new cases reported, but the disease appeared in Hamburg this week with a total of twelve cases up to date. Naturally considerable alarm has been felt by the people. In England another death has occurred in Hull, one in Grimsby and two cases have been reported from London. No new cases have occurred in New York or Jersey City and the quarantine against the port which was declared by Portugal has been removed. The disease is said to have appeared in Rio Janeiro, but no confirmation of the report has been received.

Small-Pox. — Four new cases of small-pox have occurred in New York, and five cases in Brooklyn. The new cases all occurred in a tenement-house occupied by about fifty people.

Immigration via Canada. — The request of the United States Government to be allowed to inspect all immigrants landing at Canadian ports, with a view to preventing the introduction of contagious diseases has been emphatically refused by the Canadian authorities. As the number of immigrants entering this country through Canadian ports is several thousand a month, the danger of infection is by no means slight; and a quarantine inspection of all trains coming from Canada is as important as that at our own seaports, though much more difficult.

Passage of a Thermometer through the Alimentary Canal. — The swallowing of a clinical thermometer by an insane patient at Besançon recently was not without its usefulness. The thermometer, a self-registering one, was entirely of glass and 113 mm. long. No disturbance was noticed, and nine days later it was passed at the anus. The scale registered a maximum temperature of 38.7° Centigrade, but a subsequent verification of the instrument reduced this to 38.1°. The axillary temperature which had been taken twice a day during the passage of the thermometer was never higher than 37.2°.

Rhinoceros' Urine in Hindu Medicine. — Rhinoceros' urine is a much approved remedy among Hindu physicians for chronic fevers and splenic enlargements and the Calcutta Zoölogical Garden derives so considerable a revenue each year from the sale of the water passed by its rhinoceroses, that men are detailed to collect the urine as it is passed. It is a very pale urine with a specific gravity of 1,000, slightly alkaline reaction, abundant phosphates and free ammonia.

NEW ENGLAND.

Hospital Bequests. — Among the bequests in the will of the late Margaret Capen is one of five thousand dollars to the New England Hospital for Women and Children, and one of fifteen thousand to the Perkins Institution for the Blind.

Five Unbroken Generations. — There is in this city a household with five full generations all living. The descent is by the female line in each case so that there are the great great grandfather and mother both over ninety but well and active, the great grandmother and her husband, the grandmother and her husband, the mother and father and the daughter, nearly two years old.

NEW YORK.

THE PUBLIC SCHOOLS. — On September 8th the public schools were reopened after the summer vacation, and the names of 162,000 children were registered. Before admission to the schools each child must present a certificate of vaccination, and since the day of opening the health authorities have been vaccinating pupils at the rate of three hundred a day. Four new school buildings have been opened this season, and the sanitary condition of the older school-houses is said to have been considerably improved. A number of new features have been introduced in the school system. Among them there is a more general and thorough course of instruction in physical culture, and Dr. J. Gardner Smith is to have the direction of this department. To many of the primary schools the kindergarten system will also be added.

THE WESTCHESTER HOSPITAL. — An excellent free hospital has recently been opened at Westchester, the first institution of the kind in that town, and the citizens have been very generous in offering donations of money and supplies. On the consulting staff of the hospital are the following New York medical men: Physicians, Drs. J. E. Ellis, Frank W. Jackson and W. B. James; Surgeons, Drs. Joseph B. Bissell, Arnold Naudain and Z. E. Lewis; Gynæcologist, Dr. Clement Cleveland; Pathologist, Dr. J. S. Thatcher.

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Miscellany.

EARLY NOCTURNAL PAIN IN SYPHILITIC SPINAL DISEASE.

CHARCOT[1] calls attention to a symptom of syphilitic disease of the spinal cord which is of value in localizing the seat of the lesion in its early stage. The occurrence of nocturnal pains in the cervico-dorsal or dorso-lumbar regions of the spine at a regular hour, usually in the latter part of the night, is a marked symptom of early syphilitic spinal meningitis. The duration is usually a few weeks, and the pain is a precursor of the paralytic phenomena by several weeks. Careful observation of this symptom may be of great importance in treatment of the patient.

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DOCTOR LAILLER.

THE death of Dr. Lailler — "Père Lailler" as he was fondly called by his fellow townsmen — which occured a fortnight ago in the little village of the Eure, closed the career of a most interesting man. Few probably have heard of his name, not even those who owe indirectly the most to his ingenuity.

Shortly after the cholera epidemic of 1848 when Lailler had shown the greatest daring in his work among the sick came the occasion which marked the beginning of his valuable labors. At that time the only portrayal of skin diseases was by hand-colored drawings. Passing by the Opera one day, Lailler met an Italian lad selling wax fruits. At once a brilliant idea came to the enthusiastic physician, "Come to-morrow to the Hospital St. Louis, and I will give you a hundred sous to model a hand." The first attempt of the young modeller was a failure; but the physician saw the possibilities of his pupil, and taking him into his service educated him in this new line of work.

Such was the beginning of the great dermatological museum of the Hospital Saint Louis to which Lailler devoted all his energies until its establishment was accomplished, and he saw it the first and greatest of its kind, with its models copied for many foreign museums. Medicine was to him not a road even for honest fame, but a work of priestly sacrifice and well doing, and he refused to allow his name to be given to this museum he had founded.

The Commune found him at his post; and when the insurgents driven by the army of Versailles reached the walls of Saint Louis where they wished to make their last stand, Lailler prevented the Director from opening the gates to them and boldly appealing to the mob to spare the sick and wounded whom he was caring for, the risk of massacre in the fight, persuaded them to keep on as far as Père-la-Chaise. A few minutes later the men of the Versailles army met the same brave opposition. On seeing the decoration of the Legion of Honor on the officer's coat, Lailler tore his own cross off and threw it to the ground, refusing to wear a decoration which was also borne by men who attacked hospitals. In all the after days of peace he kept his word, and was never seen again with the red ribbon on his coat.

On the establishment of peace, this earnest opponent of the empire, who had given time and money for his cause, retired from public life to a quietness which was almost oblivion, even his friends scarce hearing of his death.

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A CASE OF WASP STING WITH RAPID CONSTITUTIONAL SYMPTOMS.

A CORRESPONDENT sends to the *British Medical Journal* the following account of a case of wasp-sting:

On July 18th, at 5.30 P. M. I was called to see Mr. A., who, less than an hour previously, had been stung on the nape of the neck by a wasp. To soothe the pain, which was somewhat severe, he applied bicarbonate of soda. Some fifteen minutes later he felt his eyes watering but not painful. Getting worse he looked at himself in the glass and found his face somewhat swollen and his eyes bloodshot. He felt his body getting itchy, and taking off his clothes found his chest and abdomen covered with a red rash. Half an hour after being stung his condition became aggravated, his eyes watered much, the face was so swollen that he could scarcely see, and he noticed cyanosis of the lips and round the eyes. His wife also remarked how swollen and blue his face was, and this caused them to send for medical assistance. When I arrived the following was his condition: On the nape of the neck and to the right side was a white well-elevated wheal, ovoid in shape and about almond size, where the wasp had stung him. The face was flushed and showed slight cyanosis, but almost all traces of the previous swelling had disappeared. The conjunctivæ were markedly congested and the flow of tears increased, but the pupils were of moderate size and otherwise normal. The neck and whole trunk, back and front, were covered with a deep scarlatinal-like rash, showing a slight mottling, disappearing on pressure but at once returning. The left palm was likewise reddened but the limbs were otherwise quite free from any rash. All the parts affected with this rash — trunk and palm of left hand — had been very itchy, but this was now passing off. The left axilla was swollen but not tender to pressure, and the patient himself remarked that it was curious the left armpit should be swollen and the left palm red when he had been stung on the right side of the neck. The left hand had not been stung and showed no wound. The temperature was 98° F., pulse 60, regular and of medium tension. The patient, beyond feeling alarmed at his condition, was conscious of no other symptoms. Four hours later the rash began to fade, and next morning he was quite well.

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[1] Rev. de Clin. et de Thér., June 28, 1893.

THE MENTAL SYMPTOMS OF MYXŒDEMA.

The mental disturbances usually seen in cases of myxœdema are those of lessened activity and a gradual deterioration of the intellectual powers. There are cases, however, in which mental symptoms of a severer and more active character occur, which may amount to actual insanity. At the recent meeting of the British Medical Association, Dr. Clouston reported nine cases of myxœdema, one man and eight women, who had been sent to an asylum on account of their insanity.[1]

The mental symptoms of these cases differed greatly. One case had the symptoms of suicidal melancholia, one was simple melancholia, and the other seven were classified as mania on their first admission. Two of them after their discharge were readmitted as cases of melancholia. The symptoms of the mania differed greatly in different cases and in the same case at different times, from general simple, mental exaltation, systematized delusions of grandeur, to inability to understand simple questions and delirious incoherence of speech. They had all begun by slowness of mental action and lethargy; most of them had then been somewhat depressed, next there had appeared irritability, morbid suspicion, and loss of self-control. Under the discipline and life in the asylum four of the seven earlier cases had improved so much as to have been discharged as "recovered," that is, no longer technically insane. Two of these had relapsed and were readmitted. The cases that lasted long showed signs of general enfeeblement of mind after the early acute symptoms had passed off. Before death, a very striking hebetude and mental torpor had come on. Three of the cases had died in the asylum. The two last cases admitted had been treated with thyroid extract, and had made satisfactory recoveries, both from the myxœdema and the insanity; one of them had died at home on the tenth day after discharge, from syncope, after overexertion and whiskey. An analysis of the symptoms in the nine cases showed that in seven of them sensation was blunted, the memory was affected in eight, the normal power of attention was diminished in all the cases, with an accentuation of the attention on disagreeable things and on delusions in six cases. There were hallucinations of the senses of sight, hearing and smell in four cases. In every case the affective faculty was abnormal, natural affection being diminished in all, and, in most, hatred set up instead of love to near relations. There was depressed emotion in five cases and exaltation of feeling in three cases. The intellect was affected in all by slowness of working and by delusions, mostly of suspicion, in six cases. Volition and the originating faculty was impaired in some way or other in all the cases. The effect of the thyroid treatment was manifest within the first month of treatment in mental improvement. One of the cases treated had been for one year markedly insane, the other for three years. The myxœdema had existed for over five years in both. Both were enfeebled in mental power, this having succeeded exaltation, morbid suspicions and excitement at the beginning of the attacks of insanity. One case was cured in four months, and the other in six. A slow intermittent treatment by small doses — one-sixteenth of a thyroid twice a week — was found to be, on the whole, the best. The mental improvement went on *pari passu* with the disappearance of the bodily symptoms until the general enfeeblement disappeared; the general sense of well-being became normal, the memory improved, the delusions disappeared, the affections returned, and the volition and originating power became gradually normal.

THERAPEUTIC NOTES.

Rectal and Gastric Absorption. — Lemanski and Main have reported to the Therapeutic Society their experiments upon the comparative absorbing powers of the rectum and stomach for certain drugs. Iodide of potash, given by rectum, appeared in the saliva at the end of ten minutes while the same amount given by the mouth required fifteen for its elimination to begin. In the same way salicylate of soda appeared in the urine ten minutes sooner when given by the rectum than when taken by mouth. Methyl-blue, on the other hand, was more than three times as long in appearing when given by enema. Salol requiring the action of pancreatic fluids for its decomposition was detected forty minutes after injection and thirty after ingestion. Turpentine was apparently not absorbed at all by the rectum as no violet odor was detected in the urine after enemata. As far as their experiments went, it seemed as if soluble drugs were more quickly absorbed from the rectum than from the stomach.

Thyroid Feeding in Psoriasis. — At the last meeting of the British Medical Association Dr. Byrom Bramwell read a paper on the influence of thyroid feeding on the nutrition of the skin, especially in cases of psoriasis. His attention had been drawn to the improvement of the skin in patients under thyroid treatment for myxœdema and hoping to aid the nutrition of the skin in psoriasis he made trial of this remedy in selected cases of long-standing psoriasis. To thoroughly test the treatment all other remedies were omitted and a small dose of the thyroid given daily. In all his cases a visible improvement occurred after a few days' administration. The inflammatory redness was lessened and there was considerable desquamation of cuticle over the affected parts. In one patient the eruption grew worse, in two there was no benefit, but in every other instance there was marked and continued improvement. In one case only has there been a slight relapse. "All the patients who were thus treated had the disease in a chronic and obstinate form, and had been subjected to all kinds of ordinary treatment, but without success." Dr. Arthur Davies also reported independent observations on two cases of psoriasis which had improved very rapidly under thyroid treatment, one reaching a complete cure. The uncertainty of obtaining permanent results in treating psoriasis should restrain undue confidence in this new remedy, but the careful selection of cases and the exclusion of other treatment during the trial, lends force to Dr. Bramwell's report — and further trial will be watched with interest.

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[1] British Medical Journal, August 26, 1893.

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Correspondence.

LETTER FROM CHINA.

HANKOW, CHINA, June 17, 1893.

MR. EDITOR: — Six hundred miles from Shanghai, up the Yang-tse at junction of Han River, this city of some seven hundred thousand, one of three, reminding one of the "New York, Brooklyn and Jersey City" triopolis. Hanyang forms the second member, adjoining Hankow; Wuchang the third, lies opposite, on the south side of the great river nearly a mile in width: it is the provincial capital, where thousands of aspirants for the mandarin dignity come to the scholastic examinations. This is indeed the tea city *par excellence*. Pictures of long ago take moving form, the traditional typical two "tea boxes" perambulate the fine foreign-made streets, supported on the shoulders of a placid-faced Oriental, with saucer-shaped hat.

More interesting perhaps to you than the language or the wonderful great tiger skins which cost only about sixty silver dollars, will be a short account of the medical and hospital arrangements here.

In connection with the Wesleyan Mission Dr. Hodge has a hospital accommodating thirty men and fifteen women. A room for "opiatics" would contain five. Several victims to abuse of the *papaver somnifera* have been treated. The general plan is tonics and nourishment, with occasional nervine sedatives. The consensus of many missionary physicians hereabouts is to the effect that excessive smoking is "very injurious" owing to the scanty vegetable diet of the people and the resulting lowered vital resistance.

The London Mission Hospital (near the settlement), in charge of Dr. Thomas Gillison, now undergoing repairs and enlargement, has beds for about fifty males and fifteen females. A daily average of fifty or more receive care in the out-patient department. These people smile when the surgeon asks them if they are not afraid that he will take [illegible] or devilish [illegible], for such are the stories, with which the populace sometimes are [illegible] against the [illegible]. I have myself seen the famous *Hunan* (a province) Chinese book with pictures showing how the eyes of children and breasts of women are being removed for poisons, medicines, etc. The Chinese text tells that the foreign devil does such things for selfish and wicked purposes. In commercial ports, however, where there is much intercourse with Europeans, such ideas are of less force. They dislike amputations from religious ideas, the body being thus multitated.

Women physicians are doing good work. "The Daughters of Charity," an Italian Roman Catholic Mission have been about twenty years in Hankow, though the present structures are of a few years more recent origin. A thousand Chinese are recipients of their loving ministrations; five hundred living outside, the remainder finding homes within the walls of the institution. These latter are of both sexes and all ages. Many of the small girls have been saved from a castaway's death, and here are practising profitable trades. Others grown older in this home are married from this haven.

In connection with the "Daughters of Charity" is an excellent hospital building of two stories, accommodating about one hundred Chinese, with rooms for ten or more foreigners. Dr. Begg, the physician, sees about sixty outdoor patients every week-day. Many of them will attribute a lame back, headache or pain to a blow received four or ten years before. The average mind is filled with witchcrafty superstition; this idea governs the location and outlook of buildings, the conduct of various enterprises, and ordinary life. There were many cases of dyspepsia and lying was not infrequent. An early sign of leprosy was a smoothing out of face wrinkles and lines in a man about thirty years of age. The doctor showed an amputation of *membrum virile* for *lupus*. He first cut the integument, and drew off the skin; then incised the corpora; the urethra, the last divided, formed a sort of apex to an irregular cone. When healed, the meatus would *not* be found at the bottom of a hole — often covered with skin — but quite on a level, or slightly projecting from the other tissues. The stump was rather less than an inch in length. The surgeon wished to remove the entire structure deep down with convexis; but the mother and consort of the man decided otherwise.

The examination season is drawing near, when it is wise for foreigners to keep away from the scenes of contest — such crowds of *patriots* there do congregate, — as a later day missionary of university education casually remarked.

F. B. STEPHENSON, M.D., *Surgeon U. S. N.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 9, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	[illegible]	[illegible]	[illegible]	[illegible]	10.14	18.07	[illegible]	[illegible]
Chicago	[illegible]	—	—	—	—	—	—	—
Philadelphia	1,115,562	[illegible]	15[illegible]	15.90	14.8[illegible]	10.80	[illegible]	[illegible]
Brooklyn	[illegible]	—	—	—	—	—	—	
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	[illegible]	13.16	16.92	.94	6.11
Baltimore	[illegible]	—	—	—	—	—	—	—
Washington	[illegible]	[illegible]	47	[illegible]	10.34	13.16	[illegible]	[illegible]
Cincinnati	[illegible]	[illegible]	32	14.28	14.[illegible]	7.14	—	4.76
Cleveland	[illegible]	[illegible]	45	33.33	9.52	23.80	[illegible]	[illegible]
Pittsburg	[illegible]	—	—	—	—	—	—	—
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	23.00	[illegible]	11.[illegible]
Nashville	[illegible]	26	7	[illegible]	15.40	19.25	—	—
Charleston	[illegible]	32	[illegible]	15.65	15.65	6.26	[illegible]	
Portland	[illegible]	13	[illegible]	7.69	[illegible]	7.69	—	—
Worcester	[illegible]	38	27	42.[illegible]	[illegible]	[illegible]	—	—
Fall River	[illegible]	44	32	60.[illegible]	2.2[illegible]	[illegible]	[illegible]	
Lowell	[illegible]	32	20	12.52	9.[illegible]	[illegible]		[illegible]
Cambridge	[illegible]	29	[illegible]	[illegible]	3.45	13.80	[illegible]	—
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	—	17.64	—	—
[illegible]	[illegible]	22		[illegible]	[illegible]	9.10	—	—
Lawrence	[illegible]	—	—	—	—	—	—	—
New Bedford	[illegible]	20	[illegible]	[illegible]	[illegible]	25.00	—	—
Holyoke	41,[illegible]	—	—	—	—	—	—	—
Salem	32,233	14	[illegible]	[illegible]	[illegible]	14.28	—	—
Brockton	32,140	[illegible]	4	14.28	[illegible]	14.28	—	—
Haverhill	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		
[illegible]	[illegible]	[illegible]	5	30.00	—	[illegible]	—	
Malden	[illegible]	10	[illegible]	[illegible]	10.00	[illegible]	—	—
Newton	[illegible]	11		—	9.09		—	—
Fitchburg	27,146	[illegible]	[illegible]	[illegible]		33.33		—
Taunton	26,972	16	[illegible]	[illegible]	18.75	[illegible]		—
Gloucester	[illegible]	[illegible]	[illegible]	—	11.11	—	—	—
Waltham	[illegible]	11	[illegible]	36.36	27.27	36.36	—	—
Quincy	[illegible]	6	[illegible]	—	16.66	16.66	—	—
Pittsfield	[illegible]	2	[illegible]	—	—	—	—	—
Everett	[illegible]	[illegible]	2					—
Northampton	16,331					—	—	
Newburyport	[illegible]	[illegible]	1	—		—	—	
Amesbury	[illegible]	6	[illegible]	50.00	16.66	33.33		—

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers), 558, diarrhœal diseases 377, consumption 240, acute lung diseases 136, diphtheria and croup 84, typhoid fever 37, cerebro-spinal meningitis 21, whooping-cough 17, scarlet fever 12, malarial fever 6, measles 2, small-pox 2.

From cerebro-spinal meningitis New York 10, Washington 3, Worcester 2, Cleveland, Lynn, Somerville, Chelsea, Quincy and Amesbury 1 each. From whooping-cough New York 7, Philadelphia 3, Cincinnati 2, Boston, Washington, Fall River, Cambridge and Chelsea 1 each. From scarlet fever Philadelphia 4, Milwaukee 3, New York, Boston, Cleveland, Lynn and Somerville 1 each. From malarial fever New York and Charleston 2 each, Philadelphia 1. From measles New York 2. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending September 2d, the death-rate was 20.6. Deaths reported 4,075; acute diseases of the respiratory organs (London) 138, diarrhœa 677, diphtheria 73, whooping-cough 73, measles 63, fever 62, scarlet fever 48, small-pox (Bradford 4, West Ham 3, London 2, Birmingham 1) 10.

The death-rates ranged from 15.5 in Norwich to 31.5 in Hull; Birmingham 20.4, Bradford 23.8, Croydon 19.1, Halifax 18.2, Leicester 17.2, Liverpool 26.6, London 19.0, Manchester 23.2, Newcastle-on-Tyne 23.0, Nottingham 20.1, Sheffield 20.9, Sunderland 26.0.

METEOROLOGICAL RECORD,

For the week ending September 9, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 3	29.95	58	68	47	72	58	65	W.	S.W.	6	10	C.	C.	
M.. 4	29.92	60	67	52	59	60	60	N.W.	W.	14	6	C.	C.	
T.. 5	29.87	66	80	51	73	[illegible]	[illegible]	S.W.	S.W.	6	9	C.	C.	
W.. 6	30.02	64	70	59	72	52	62	W.	N.W.	12	9	O.	C.	
T.. 7	29.98	60	68	51	64	100	82	S	N.W.	6	29	F.	R.	0.02
F.. 8	30.04	62	67	56	74	63	68	N.W.	N.W.	17	5	C.	C.	0.32
S.. 9	30.05	62	74	[illegible]	78	74	76	W.	S.W.	14	16	F.	C.	
☞	29.99		71	58			69							0.34

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 9, 1893, TO SEPTEMBER 15, 1893.

Leave of absence for one month, to take effect on or about October 1, 1893, is hereby granted Lieut.-Col. J. V. D. Middleton, deputy surgeon-general, U. S. A., with permission to apply for an extension of fifteen days.

First-Lieut. Champe C. McCulloch, Jr., assistant surgeon, is relieved from duty at Fort Sam Houston, Texas, and ordered to Fort Ringgold, Texas, for duty, relieving Captain James E. Pilcher, assistant surgeon.

Captain Pilcher, upon being relieved, ordered to Fort Niagara, New York, for duty, relieving Captain Rueben L. Robertson, assistant surgeon.

Captain Robertson, upon being relieved, ordered to Fort Omaha, Nebraska, for duty.

Captain Louis A. LaGarde, assistant surgeon, will, upon the completion of his duties in connection with the World's Columbian Exposition, report in person to the commanding general, Department of the Colorado, Denver, Col., for duty as attending surgeon and examiner of recruits in that city.

First-Lieut. Henry R. Stiles, assistant surgeon, is relieved from duty at Fort Omaha, Nebraska, and will report in person to the commanding officer, Fort Meade, South Dakota, for duty at that post.

By direction of the Secretary of War, the leave of absence granted Captain Charles E. Woodruff, assistant surgeon, is extended four months.

The leave of absence granted Captain Junius L. Powell, assistant surgeon, is extended ten days.

Leave of absence for one month is hereby granted to Major J. Van R. Hoff, surgeon, U. S. A.

Leave of absence for one month, to take effect about the 5th inst., is granted Colonel J. C. Baily, assistant surgeon-general.

Leave of absence for one month, to take effect between the 25th inst., and the 5th proximo, is granted Major Charles L. Heizmann, surgeon, Fort Douglas, Utah.

Leave of absence for one month is granted Major David L. Huntington, surgeon, U. S. A.

Leave of absence for two months, to take effect from August 25, 1893, is granted Lieut.-Col. Charles R. Greenleaf, deputy surgeon-general, U. S. A.

SOCIETY NOTICE.

Medical Society of the State of New York. — The following business committee has been announced by the President of this Society, Dr. Herman Bendell, of Albany; Dr. Henry Flood, of Elmira; Dr. L. Bolton Bangs, of New York; Dr. Edward Clark, of Buffalo, to whom all communications regarding papers for the next meeting of the Society in February, 1894, may be addressed.

F. C. Curtis, M.D., *Secretary*, Albany.

RECENT DEATHS.

Lyman B. How, M.D., of Manchester, died at Hanover, N. H., September 15th, aged fifty-five years. He graduated from Dartmouth in 1860 and from the medical school in 1863. He was for twenty-five years professor of anatomy at Dartmouth and held the position until this year, when his failing health obliged him to give up work. He was a member of the American Academy of Medicine and at one time President of the New Hampshire Medical Society.

H. B. Millard, M.D., of New York, died in Paris, September 14th, of typhoid fever.

Edwin Colt, M.D., died in Brooklyn, N. Y., September 15th, aged eighty-three years. He was one of the founders of the Eastern District Hospital and the Eastern District Industrial Home.

W. T. White, M.D., died in New York, September 17th, aged sixty-four years. He was Recording Secretary of the Academy of Medicine for seven years, and one of the founders of the New York State Medical Association. He was also editor of "The Medical Register of New York, New Jersey and Connecticut" for fifteen years.

E. Warren Bey, M.D., a well-known American physician of Paris, died in that city September 16th. He was in practice in Baltimore before the rebellion, served as surgeon in the Confederate Army, and was later a professor in the Baltimore Medical College. Subsequently he was offered a commission in the Egyptian Army, in which he rose to the rank of surgeon-general. Later he practised in Paris, where he spent the remainder of his life.

BOOKS AND PAMPHLETS RECEIVED.

Local Boards of Health in the State of New York. 1893.

Circumcision; its Advantages and how to Perform It. By M. Clifford, L.R.C.P., London, M.R.C.S., England. 1893.

Experiences in Pelvic Surgery. Peritonitis from a Surgical Standpoint. The Technique and Management of Pelvic Surgical Cases. By A. V. L. Brokaw, M.D., St. Louis, Mo. Reprints. 1892-93.

Inguinal Hernia in the Male. Analysis of One Hundred and Thirty-three Cases of Hernia Operated Upon for the Purpose of Radical Cure. By Henry O. Marcy, A.M., M.D., LL.D., Boston, Mass. Reprint. 1893.

Medical Report of the Philadelphia Dispensary for Skin Diseases Covering a Period of Ten Years and Nine Months (February, 1880, to November, 1890). By the attending physician, Henry W. Stelwagon, M.D.

Traitement du Pied Bot Varus Equin par l'Ablation de la Plupart des Os du Tarse. De l'Emploi des Essences et Surtout de l'Essence de Cannelle ou Cinnamol Comme Topique en Chirurgie. Par le Dr. Just Lucas-Championnière. Extrait. 1893.

Twenty-ninth Report of the Trustees of the Boston City Hospital; with Report of the Superintendent, the Medical and Surgical Statistics, Rules for Admissions and Discharges, Prospectus of Training-School for Nurses, Rules for the Convalescent Home, etc., for the Year, February 1, 1892, to January 31, 1893.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XVI.

INJURIES OF THE SPINE.

It is hard to believe that there can be such a thing as simple concussion of the spine producing lasting consequences. Of course, the spine may be shaken up; but that it can be shaken up in such a way as to produce permanent injury, without positive lesion to other parts, seems difficult to believe. The spine is in a water-bed; floats; cannot swing much from side to side; it is in the midst of a bony column which is linked like a chain; and is not stiff. It is buried beneath a mass of strong muscles; lies in the centre of the body almost. You are surprised to see in the dissecting-room when you cut away the muscles of the back how far the spinal column is in toward the centre of the body. It is wonderfully protected from shocks and jars; so that the delicate nerve-tissue of the spinal cord itself can hardly be damaged very much unless the parts near it are broken in a certain way. Now it is surrounded by a copious blood-supply. The rachidian veins which are developed in and between the membranes are very numerous. If you look in Bourgery's plates of anatomy, which are rather highly-colored, but still pretty true to nature, you will find how extremely vascular the parts around the cord are. It is much more probable that a blow or accident, which happens to the spine, not severe enough to injure the bones or detach them, but severe enough to jar the parts, — it is much more probable that it should rupture some of these numerous dilated rachidian veins, than that it should shake up and lacerate the cord itself, floating in its water-bed as it is; so that it seems to me improbable that concussion of the spine, as such, amounts to much, unless it is also accompanied by the same sort of injuries that happen in the brain. We have seen that simple concussion of the brain was rare; that where any symptoms persist they are due to positive lesions; and those lesions we call contusion of the brain; we have little vessels ruptured and miliary extravasations. Now I believe, and I think pathology supports it, that injuries of the cord which are supposed to be concussions, but from which the patient does not promptly recover, are due to a positive lesion. That lesion generally is the rupture of a vessel and the subsequent symptoms produced by a clot. Now a clot between the membrane and the spinal cord must act very differently as regards compression from a clot in the cerebral cavity. In the first place, it will gravitate, and it trickles down between the membranes and perhaps lodges about the points of exit of some of the nerves and compresses local portions of the cord; and gives rise to local changes of nutrition or motion, or sensation, but not affecting the whole of the body below where the injury is received. That is the history of moderate injuries of the spine. Either they amount to nothing at all; or if they amount to anything, they are followed by local, limited paralysis, due to effusions of blood.

One will see, on the other hand, a good many people get shaken up in the back, who are lame, stiff, and are weak and incapacitated for a good while; and yet they do not have any local paralysis. How are such symptoms as that to be explained? Apparently the consequences of a very large number of these injuries are external to the spinal cavity itself; that is to say, they are about the ligaments of the vertebræ, the fasciæ, and the muscles around them. You can remember how fully these parts are supplied with ligaments; how many articulations there are; how many ligaments there must be to support them; how much the erector spinæ and other sets of muscles are made up of fascia. The amount of ligamentous tissue and fibrous tissue throughout the whole back is very much larger than in any other part of the body. Bruises, blows and sprains are extremely slow to recover from. We know that when we sprain the wrist or ankle, or twist some part, that the sprain is slower to be recovered from than a broken bone. Undoubtedly many of the cases of railroad concussion, so-called, are cases of sprains and ruptures of the ligamentous tissues of the back. These are slow to repair. The back remains stiff. A form of rheumatism sets in. Pains located there are hard to distinguish from pains located in the cord itself; and, if the patient is at all of a nervous temperament, a neuralgia is set up, or other symptoms due to what we call hysteria; and owing to the long series of aches, and pains, and disabilities, the observer is led to think that there must be an injury to the cord itself. Frequently there is nothing of the kind. We can test that in two ways. First, by the lapse of time; inasmuch as if the cord is injured, it will undoubtedly go on to further inflammatory and degenerative changes; and a few months will make the patient much worse, and show symptoms which will be decisive. We can test it in case it has gone on some months without any change one way or the other, by electrical tests; and see whether the contractile power of the muscles is diminished.

Most shakings up of the back are due to injuries outside of the cord. Those which are more severe produce hæmorrhages; and the hæmorrhages are positive lesions, and require time for their recovery; but they do finally get well. Finally, we have the extreme class of injuries where in the spinal column, the bones are injured; and where positive fracture, dislocation, compression, meningitis, softening of the cord, etc., follow.

The cases which are due to the effusion of blood into the spinal canal are pretty easily diagnosticated after a few days. The symptoms are localized, persistent, and they can hardly be mistaken. Partial paralysis of one arm, partial paralysis of one side of the neck, or any portion of the body indicates that certain nerves have been compressed, and compressed within the spinal cavity where they emerge, by a clot. This may be so extreme in some cases as to produce paraplegia. A man receives a severe blow in the small of the back. No evidence of fracture or dislocation occurs. The patient is apparently paralyzed below the pelvis and remains so; but after six or eight weeks begins to recover sensation and motion; and after some months recovers perfectly. Such a case is undoubtedly due to effusion of blood; compression of the cord occurs; afterwards it is absorbed, and finally gets well. The milder class of cases give rise to local paralyses; and when we find them we have reason to give a good prognosis, after sufficient time has elapsed. It must be borne in mind, however, that recovery from this sort of injury is excessively slow. It is not to be measured by weeks, but by months; sometimes a year or two, before the patient gets the parts finally restored.

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[1] These [illegible] printed from the [illegible] reports. [illegible] They were delivered to the third and fourth [illegible] as part of the regular course.

Now in sprains, bruises and twists of the ligaments about the back the patient is often benefited by having an immobilizing apparatus put on. He is better off to lie in bed, and have on a light plaster, and keep the parts perfectly still, just as we would treat a badly sprained ankle. Subsequent to that he needs light massage; frictions and liniments, and electricity, the continuous current, etc., until he finally recovers.

Fracture and Dislocation of the Spine. — Now we pass to the very serious class of cases called fracture and dislocation of the spine. They almost always go together. It is hard to conceive that the spine can be dislocated without fracture taking place. It is rare; and usually fracture and dislocation are combined.

The symptoms produced must be immediate. There cannot be any waiting for the formation of a clot of blood here. Whatever happens, happens at once. The patient receives his injury; is immediately paralyzed below the seat of the injury; and the amount of the paralysis depends on where the injury is. In the middle of the back he has paraplegia, and also begins to have phenomena of impaired respiration and digestion; and if still higher up, still more startling phenomena appear. Bear in mind that the most common place for the structure to give way is where the neck joins the body. We have here, just above the vertebra prominens, a movable part, the neck, attached to a comparatively immovable part: which comprises the thorax, ribs and sternum, and an injury received upon the back is transmitted above. Fractures and dislocations are most common above the vertebra prominens. If the injury occurs up by the atlas and axis, the odontoid process is thrown forward on the medulla, and instant death is the result; death I presume more rapid than from any other form of injury, except by an extremely strong electrical current.

Between the third and fourth cervical vertebræ come out the filaments which form the phrenic nerve, which supplies the diaphragm with its pumping power in carrying on respiration. If fracture involves that nerve death is very speedy. If, as is frequently the case, fracture and dislocation take place about the fourth and fifth, fifth and sixth, or sixth and seventh vertebræ, then we have a very curious class of phenomena. The patient is paralyzed below the nipples. The chest is fixed. The inspiratory power of the serratus and intercostals is wholly lost. The patient can breathe only with the uninjured fibres of the phrenic nerve; and respiration has to be purely diaphragmatic. The chest does not rise in respiration. He lies on the back, incapable of moving, with the chest as fixed as in a marble statue. He breathes, however, fairly well. There is no suffering. The patient regains consciousness to a perfect degree. He cannot believe he is so seriously hurt; cannot understand that he is fatally hurt. He is sure to die; and in about thirty-six hours, sometimes forty-eight. Death is bound to occur from two causes: one is the compression on the diaphragm from the accumulation of gas in the paralyzed bowels; gas accumulates and is not passed on, fills up the abdomen, enormous distension takes place, the diaphragm is pressed up against the lungs, the lungs cannot expand, and are slowly compressed from the force underneath. Meanwhile another change takes place in the lungs themselves, which is still more dangerous, that is that the elastic power of the bronchi to expel mucus is wholly lost, and the lungs fill up with the secretions of the bronchial tubes. The patient is unable to cough, or expectorate. Between compression below and filling up above, at about the end of twenty-four hours he usually begins to be dull and cyanotic, and his finger-nails to grow blue; and he grows a little colder; becomes stupid, and gradually dies by slow suffocation; by a merciful form of death, since he is rendered unconscious.

We recognize the injury by these terrible phenomena when we see the patient. We can hold out but very little hope when the injury has been so high up that the respiratory power of the intercostals and serratus is lost. The patient breathes wholly with his diaphragm; is holding on to life by a very feeble thread; and he is almost sure to die in the way I have described.

If the injury occurs a little lower down he breathes better, but he is paralyzed. A little lower down, and he has no disturbance of the heart or lungs; has paralysis of the functions of the rectum and bladder, and paraplegia, and lives indefinitely. The broken backs and dislocated backs, in the middle of the dorsal region, live sometimes months or several years; once in a while recover, but very rarely.

The most important point for us to consider is whether we can do anything in these cases. The symptoms are so marked that we cannot help making a diagnosis; and we are occasionally assisted in the diagnosis, but not always, by an evident distortion in the line of the spine. In the neck it is not very easily recognized, however. The muscles are thrown into tension. The neck may be set back or forward a little; but it is difficult to feel displaced vertebræ in the neck, often. We frequently may be deceived as to the gravity of the injury, at first, by the fact that feeling the point of injury we find crepitus and broken bone. That usually means nothing at all; means a spinous process broken off; but it is the occurrence of all these symptoms of paralysis at once, with or without distortion, which indicate what has taken place.

Nature can do very little. The question is whether man can do anything to help. The most tempting field would seem to be to cut down upon the part; to use antiseptic precautions; saw out and trephine the laminæ of the vertebræ; remove depressed fragments; restore the cord to its natural position and circulation just as we do the brain when a bone is driven in upon it; and occasional instances of cure have resulted; but unfortunately they are very rare; and the reason is this: when this dislocation and fracture of the spinal column takes place the bodies jump over each other, and compression of the cord is almost always on the anterior portion, where it is out of reach of the surgeon. He may uncover the cord, meanwhile the vertebræ are locked over each other in front, and compression is still going on in front. I do not say it is not justifiable to make these attempts sometimes; but the latest statistics I have seen seem to show, on the whole, that up to this date, the percentage of recoveries was better in cases that were not interfered with, than in cases that were. The encouragement to interfere; to trephine the spine is very small. If we cut away considerable, we may relieve the symptoms; but the patient will be, in the future, dependent on an apparatus to hold up his head.

Is there anything else we can do? Efforts have been made with occasional success to pull the fractured and dislocated vertebræ into place by traction; and once in a while, there has been a brilliant case; just as you read, once in a while, of that romantic and typical case, where a man has a piece of bone driven into the brain while in the midst of a conversation; loses consciousness; the bone is removed, and he rouses up and resumes conversation where he had left off; so you read occasionally of cases where reduction of dislocated vertebræ has been accomplished. It is a fair thing to try. How shall it be tried? The most efficient way is to suspend the patient in a tripod just as if about to put on Sayre's plaster-jacket for caries of the spine. The objection to the suspension is that the agony inflicted on the patient, and the constitutional symptoms produced, are very severe. The patient can hardly undergo it without ether; and while he is etherized and hung up, extreme care has to be taken lest he stop breathing, and die in the apparatus. In the child, young person, person not weighing very heavily, it is fair to try it; but in the heavy man, the chances of inflicting terrible suffering, and perhaps killing the patient, are something. On the other hand, it is claimed that efficient extension and counter-extension can be made with the body in the horizontal position, if you have plenty of assistants, and the body arranged on an angle; so that you can draw both ways, and draw the vertebra down into place.

We may trephine with a very limited chance of success and of recovery, probably followed by inability to walk, or move. We may extend by the tripod if the patient is not too heavy; we may extend more mercifully by doing it horizontally.

There remains only one other method of treatment, which should be applied to all cases, and can do no harm, and often does a good deal of good. After you have done what you can to draw down the parts; namely, to immobilize the spine; and that is done best by the plaster apparatus; the patient can be encased in plaster, and kept on a bed. One or two little precautions are very valuable. Turn the patient over often if you can, for otherwise he is sure to have a bed-sore. In the plaster-jacket you can turn him over; and it is a part of the nurse's business to turn him at least twice a day. Be very careful of the subsequent care of the bladder. Many of these patients die of subsequent cystitis; and if you can preserve the catheters and catheterization from sepsis, you may avert cystitis for a very long while.

Some of these patients live for months or years; and some of them waste away and die from affections of the bladder, and degeneration of the kidneys, and other organs.

INJURIES OF NERVES, MUSCLES, BURSÆ, ETC.

You will be at a loss sometimes perhaps to explain why it is that a moderate blow, from which the consequent bruising, which appears under the skin, has long since passed off, remains so painful and disables the parts so much. That is the case where a nerve has been bruised, and where the inflammation in its sheath cannot show outside through the skin and tissues, and shows only in its effects.

The effect is long-continued pain, lameness and inability to use the part. The treatment is strictly local. In the first place, the limb must be put at rest on a splint. The bruised nerve at first must be treated by laudanum fomentations, and later by more active treatment. In the later stages the application of iodine, or a blister, does a great deal of good; and finally the trouble subsides, after a good while.

When an effusion has taken place in the sheath of the nerve, and it becomes compressed; or when a nerve is wounded and its transmission of nervous influence is impaired, then some other phenomena come on which are characteristic, that is, reddening, glazing and blistering of the skin, especially on the tips of the fingers, along the inside of the fingers, on the palm of the hand. In these patients you will find not only the hand cooler than natural; less sensitive than natural to the ordinary touch, but also the skin vesicating, rubbing off, the knuckles frequently of a bright cranberry color; and the part excessively painful, and very easily affected by cold. This peculiar condition of the skin is a pretty good diagnostic mark of a nerve injury.

In these cases rest on a splint, opiates, local applications, time, etc., will bring the part round in a very large proportion of cases so that it may recover. It is known, also, very well that nerves that are cut have recovered their function after a certain time; that is, nerves of moderate size. It is one of the commonest observations that the branches of the facial on the face, cut so frequently in small operations about the face, entail at the time a great deal of paralysis, but it is not a permanent one. It is finally recovered from. This takes a long while, — four, six, eight months. Even the smallest growth or wen, anything of that kind, cannot be cut from out the cheek, from the side of the face or about the jaw, without cutting off some half-a-dozen or more filaments of the facial nerve. The muscles of expression of the face are so minute, and the changes which they undergo from want of innervation are so marked, that even these little incisions, destroying a few branches of the nerve, will give rise to a visible paralysis, and change of expression in the features. It is then important to warn the patient, who is to have a slight operation about the face, that he will have a temporary paralysis about the face for a little while, but that it will eventually recover.

Now after large trunks are cut off, unless the parts can be held perfectly still in apposition, their reunion is not so hopeful; but in these antiseptic days the stitching of the nerves together has been done with great success. It is said that you must stitch the sheath, or the neurilemma. That is very easily said, but is very difficult to do with ordinary instruments and needles without involving some of the nerve filaments and cells in the sutures. In fact, I believe it is practically impossible to stitch the neurilemma of the nerve and sheath close to the other divided end without more or less mutilation. Apposition of the ends, however, is what is needed. They should be snugly stitched together by antiseptic sutures. Put the limb on a splint so as to relax the nerve a little; dress the wound antiseptically; hope for union by first intention, and for union of the nerve.

The sensibility will not usually return for some weeks; but comes back very gradually as the nerve gets healed; and the nervous influence is re-transmitted across the space.

Partial cuts, then, will heal. Cuts of small nerves will repair themselves. Cuts of large nerves, as a rule, will not repair unless they are sewed together by the surgeon.

Another class of affections and injuries of the nerves which are very troublesome, is when the nerve has not been cut off itself, but happens to get tied down in a cicatrix. This is a very distressing class of cases. It may occur in the continuity of a nerve, in the brachial or sciatic, that cicatricial tissue gets formed around the nerve, binds it down, compresses it, makes strong and elastic adhesions, and the nerve is held in this way until it gradually loses its own nutrition, withers, becomes changed in tissue, and so finally loses its use and function permanently. Unfortunately this change is almost always accompanied with a great deal of pain; and, inasmuch as most of the nerves have sensation as well as motion as part of their function, the pinching of the cicatrix, while it destroys the motor power of the nerve, at the same time inflicts severe pain on the sensitive portion; so that the tying down of a nerve in the cicatrix is one of the commonest causes of persistent neuralgia, or pain in the nerves. This, of course, is all relieved by cutting open the cicatrix, relieving the pressure, and sometimes by stretching the nerves, which may be done with blunt forceps.

Unfortunately there is another class of cases where the relief given is very doubtful indeed, and that is in case of neuromata or nerve tumors. They are not nerve tumors in the strict sense of the word. They are rather fibrous growths from the sheath of the nerve, which expand into little fibromata, in and among whose elastic fibres the nerve fibres get entangled and squeezed, apparently; and, although it appears as if there was a growth from the nerve itself, it is really fibrous tissue entangling the nerve in it. These neuromata, if single and occurring on single nerves, are curable, but when they occur in stumps, on the ends of divided sets of nerves, and occur in clusters, they are frequently incurable. The difference I do not know how to explain; but such is the fact.

Of the first class of cases is what is called the painful subcutaneous tumor. This means nothing more than a little neuroma, which is small, subcutaneous, and always implanted upon some cutaneous nerve. A favorite site seems to be on the peroneal regions about the fibula; also the arm. Wherever the cutaneous nerves are stretched pretty well over the bone, there occasionally comes what is called the painful subcutaneous tumor, which is nothing more than a little neuroma upon a cutaneous nerve-filament.

These little tumors are peculiar. They can barely be felt beneath the skin. They are little larger than bird-shot; are sensitive to pressure; and they are the seat of terrible neuralgia. The patient walks about for a while, or labors for a while, and as the day goes on this particular point begins to ache, and continues to ache until the limb is put at rest; and next day recurs again.

Now these troubles once recognized are perfectly curable by excision. The cure is complete; and there is no probability of a recurrence.

On the other hand, the class of neuromata which form on the divided ends of nerves in stumps after amputations, are multiple, and not only very painful, but they are very difficult to extract without recurrence. This is a very peculiar condition, which, as I say, we are at a loss to explain. On the brachial plexus, for instance, after a high amputation of the humerus, in the stump there begin to be formed painful spots which grow worse and worse until the patient is driven to have the stump reopened, the diseased points sought for and removed. On opening the stump, there is found on the brachial plexus a bunch of neuromata looking much like a bunch of small grapes. They grow out from the terminal ends of the cut nerves in distinct little fibrous masses. Of course, the surgeon endeavors to remove them all. He cuts short all the stumps of the nerves as far as possible and allows them to retract into the tissues, and the part heals up; but unfortunately, although this cures sometimes, it does not always do so; and recurrent pain comes on. The same series of changes take place higher up in the brachial plexus; and I know one patient where the pain finally went to the suprascapular nerve and the infrascapular, although removed about the axilla. This is a form of nerve affection which is not curable.

We see another class of cases distinctly curable, and that is where the end has got pinched in the cicatrix of the stump. You may have the bone a little too long. The flesh and skin of the stump are drawn tightly over the end, and then at some little nerve end you may have an exquisitely sensitive point where, if you touch it with the finger, the patient will scream out with pain, and which is always the seat of neuralgia. That is the case of a nerve imprisoned in the cicatrix, and that is curable. Cut away the cicatrix; shorten up the stump of the nerve, let it retract among the tissues and the difficulty is removed. In view of this danger, it seems to be a very important point in amputating to make sure that the nerves are cut short; and that you should not allow them to appear in the stump. If they appear relaxed and hang out, you had better draw out the nerve as far as you can, snip it far up, and let it draw back among the soft tissues where it cannot come anywhere near the surface, or be exposed to irritating adhesions.

Chronic inflammations of the nerve itself in the form of multiple neuritis are sometimes operated on, and sometimes they are temporarily relieved, but not always permanently relieved. The trifacial nerve is especially the seat of these cases of great suffering; and special names are invented for the affection. The inferior dental branch and infraorbital branch are the most frequent; the supraorbital not so often.

These nerves have frequently been cut down upon, the jaw and bones trephined, nerves excised, and sometimes they have been excised and pursued even up to the foramina through which they escape from the skull.

Permanent relief has been given in a few cases; temporary relief in all cases, pretty much. But the trouble is apt to recur; and sometimes operation after operation is done without procuring final relief. In this case, of course, we must conclude that the trouble finally becomes central: is in the central nervous system; and that the seat of the neuralgia is beyond the reach of surgical interference.

Now, the most practical points about all this — the most practical points surgically — are these: when a patient has had a blow, and, although the part looks well, when he insists upon it that it is always painful; that he is not comfortable; that the arm aches all the time, although nothing can be seen, you may conclude with great reason that a nerve has been bruised, and that he is having an effusion into its sheath that will not get well without treatment: that the treatment should be total rest, application of opiates, etc., until the effu sion has gone. When you see a patient with these peculiar cranberry-colored knuckles and scaling off of the skin, you may conclude that, whatever that injury has been, a nerve has been badly damaged in some way. Then you would be mistaken in directing the treatment at all to the extremity of the hand and fingers where the trouble appears, but seek for the tender points above, and apply rest, splints, fomentations, etc., until you get the inflammation subdued. When you cut a little nerve on the face in doing any little operation, you will have more paralysis produced than you expected. You will be rather dismayed at the appearance of the face afterwards. You may, however, reassure the patient that the nerve will reunite in six to eight months. When a large nerve is divided, it will not, as a rule, reunite unless stitched together; and it is not possible to stitch the neurilemma without bruising nerve fibres; and that practically makes no difference provided the operation is done antiseptically and the wound heals by first intention. Great relief can be given to nerves caught in cicatrices by dissecting them out, and shortening them. A single neuroma has only to be recognized to be treated successfully by cutting it out, and it always gets well. A painful nerve caught in the stump can be cured by cutting it out. It is a good practical rule in amputating to cut the nerves short and allow them to draw back. The multiple neuroma is frequently incurable. We cannot promise cures. We can give temporary relief. The excisions of nerves for neuralgia always give relief lasting for months or years; but occasionally the trouble comes back beyond the foramina in the skull; becomes central; and the patient is the victim of permanent neuralgia beyond surgical aid.

Injuries of Muscles. — Now we pass to the injuries of muscles which are very few in number. The principal one is rupture of the muscle. Bruises and hæmatoma, of course, we expect will absorb and get well without suppuration, as a rule. The rupture of a muscle is a very troublesome affair. The partial rupture is not of very great consequence, but a complete rupture entails entire loss of function of the part. The biceps humeri and quadriceps extensor femoris are frequent instances; the most common of all, probably, the plantaris. The plantaris is merely the analogue of the muscle which in the bear pulls upon the plantar fascia as he walks. It is practically of very little use in man; and yet, when it is ruptured, it gives rise to quite serious lameness for about ten to fourteen days. As you may remember, the muscle starts with a very fine muscular bundle at the condyle, then becomes developed into a thin, long tendon which runs along the sheath of the soleus and gastrocnemius by the side of the tendon of Achilles, and finally is inserted into the os calcis. This snaps and ruptures in violent efforts, sometimes. The patient is not aware of what has occurred; but is almost always convinced that he has been struck. Something has hit the calf from behind; is compared by him to the blow of a whip-lash, or sharp stick, and he feels lame; immediately begins to manipulate the calf, and expects he has been bruised. In a little while, if you see the case, you will find a minute extravasation of blood has taken place in the skin and is gravitating down along the sheath of the plantaris tendon. That may not come out until the following day, or longer, but shows itself plainly; and when you see it, it is quite diagnostic of the affection. Meanwhile, the calf swells, the ankle swells a little. The patient walks not at all, or with great difficulty. He preferably takes a cane or crutch; and the trouble lasts one to two weeks. Nothing can be done in the way of repair. The injury is irreparable. The extravasation of blood along the sheath of the tendon makes the diagnosis clear. The diagnosis is strengthened by the age of the patient. This accident rarely takes place before the age of forty-five to fifty; and preferably in women of lax fibre and rather fat; occasionally in men. It usually occurs in consequence of some sudden and unexpected exertion; such, for instance, as trying to get hastily on a horse-car; trying to get up on a very high step; missing the step; getting off a curb-stone and coming down into the gutter; and, as I say, it occurs only in a person whose muscular fibres have become degenerated, is fat and lax; and the sensation is attributed to a blow from behind.

It is a good plan to treat it, because it gets well quicker. In the first place, if the patient is willing, he should lie still and have the calf fomented a day or two; a flannel bandage from the foot to the thigh applied, and kept on about two weeks. In addition to this, the patient must use crutches, or a cane. After about two weeks the trouble gets well.

Tearing away of the muscular fibres of the quadriceps extensor femoris from the tendon of the patella above makes a complete disability, just as complete as rupture of the ligament below. The muscle goes up in a mass, and the patient is practically helpless with regard to standing, and especially with regard to extending the leg.

Rupture of the biceps humeri makes an equally great deformity; but is not so marked in the disability it entails, because we always have the other muscles, the brachialis anticus and coraco-brachialis, to assist, so that the function of the biceps is not so missed as the function of the quadriceps extensor femoris.

It is a question in my mind whether it is not justifiable in these cases, if seen early, to cut down upon the part antiseptically, and try to sew the fibres together, put the limb in a state of relaxation on a splint and endeavor to promote adhesion. As a rule, the trouble is not fully recognized; tearing takes place gradually. The patient does not seek the surgeon until some time has elapsed; then the contractility of the muscular fibres is so great that the muscle is drawn so far beyond its place that it cannot be got down, and the trouble is practically hopeless of remedy except by position and bandaging and time.

Tendons rupture occasionally, but not very often. The most familiar mode of rupture is when the patient gets caught by the fingers; generally children, boys, getting caught on a fence or pickets, and having the finger caught, are temporarily suspended by the fourth or third finger. That tears the muscle in the forearm, and out come the tendon and muscle, the whole thing sometimes many inches in length, from the lacerated wound on the finger. These long tears of the muscles, of which there are a number of instances in the museum, are irremediable, of course. There is nothing to do but to extract and cleanse the part, and try to make it heal antiseptically, having forever lost the use of that particular tendon. Repair is impossible.

Tendons slip out of place sometimes; slip off from attachments about the ankle, the peronei especially; and also occasionally, it is said, the long head of the biceps. This, however, is difficult to prove anatomically when it occurs; and it is perhaps not worth while to waste much time over it, as its existence even has been doubted. But the peronei about the ankle, and occasionally one of the ham-strings, slip out of place and have to be treated by bandage and apparatus to hold them in place.

The *Bursæ* are developed outside of the joints as a rule, little synovial sacs intended to relieve friction; and, as you know, they become developed by the use and friction of the part, in so much that certain trades are marked by peculiar bursæ. The miner has a bursa over the olecranon due to picking with his elbow raised so much against side walls. The bursa over the patella is the common one, as you know, which becomes inflamed and aggravated by work upon the knees, as in the case of women who scrub floors; and also largely in these later times, when hard-wood floors are used so much, in carpenters who work planing and polishing. The carpenter has what used to be called the housemaid's knee by this development of the bursa over the patella.

The only point we have to speak of in this part of the subject, in regard to bursæ, is their injuries. When they are wounded they give exit to an albuminous-looking fluid like the synovial sacs. They, of course, should be treated by cleanliness and rest, antiseptics, etc., until they can heal.

There are certain ones, however, which, when wounded, are extremely dangerous. For instance, there is a bursa developed about the semi-membranous tendon at the back of the popliteal space. This bursa is not very uncommon. It occasionally gets wounded, and unless treated carefully, entails serious consequences, because it very frequently communicates with the synovial sac of the knee-joint; consequently double care must be taken to wash out all dirt, cleanse and bandage it, and employ rest a good while, to avoid ill consequences.

The other class of bursæ which sometimes get injured, and sometimes are operated on surgically, are what are called ganglia, an improper name; they are also called, sometimes, weeping sinew. They form as little synovial sacs on the sheaths of the tendons at the wrist, especially on the extensors, sometimes on the flexors.

It is of the last importance to recognize a wounded joint and especially any synovial sac. The joints most frequently injured are the knee and elbow, especially the knee. The synovial sac of the knee is very large, extending far up above the patella. The punctured wound driven in above the patella is sure to injure it, and that is the favorite location for wound of the knee-joint. It may be a minute puncture. Nothing may attract attention to it unless we observe carefully, and then we shall see a little clear white, opaque, albuminous-looking fluid is coming out, not like blood, not like anything else. This is synovial fluid, and indicates puncture of the synovial sac; and it is extremely dangerous unless treated antiseptically, and by rest, inasmuch as destructive synovitis is likely to come on, if any dirt gets into the sac.

"WHAT a pretty dimple that boy has," said a lady visitor, as she patted the doctor's hopeful. To which the infant replied: "You think that is a pretty dimple? Well, you dess ought to see the one on my tummick."

Original Articles.

SIMULATION IN TRAUMATIC NERVOUS DISEASES.[1]

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A HEBREW psalmist, in the days of the Maccabees, said in his haste that all men were liars. Two thousand years of further observation have led mankind to repeat the statement after due deliberation. The mysterious periodical illnesses that attack the schoolboy at eight in the morning and are well by ten, the bronchial affections that render exposure to the air of the college chapel deadly to the student, the diseases of military life that have given "sogering" its special significance, the complaints that prevent our jurors from serving, and the many ills which are to be found in our prisons at sick-call, are examples of the psalmist's words, and show that man is ever ready to lie about his health, as well as about other things, if it be to his advantage. So also in cases where a claim for damages has arisen, a powerful motive for lying exists, and it can hardly be thought improbable, when the pension agent and the "coffee-boiler" league together to get a pension for corns or baldness, that the victim of a railway accident, the "shyster," and perhaps the physician should also form a triple alliance to divide the spoil of the railway company.

That there are men who are willing to do this I freely admit, and I grant that there may be a considerable percentage of them among those who present themselves before the claim agents of the railway corporations seeking for damages for personal injury. In litigation cases, however, there is a constant process of selection. Cases of gross fraud are detected at once, and either withdraw or content themselves with the pittance which the company may offer to avoid the expense of a suit. The "shyster," too, no matter what his morals may be, is averse to spending his time and strength for nothing on a hopeless case; or, if he be fully committed to a scheme to defraud a company, he will seldom risk calling upon a physician of good standing, fearing lest his fraud may be discovered. Consequently I believe that few cases of deliberate simulation are likely to reach the neurologist, and experience serves only to strengthen that belief.

Nevertheless "railway spine" has become a byword; there is a widespread opinion, not only among the laity but among the medical profession, that a large percentage of litigation cases are fraudulent, and simulation is the stock defence in the majority of cases that come into court. Singularly enough, if simulation were as common as it has been maintained, the alleged fraudulent cases have been reported chiefly by surgeons and general practitioners, and it is only within the last three years that, so far as my knowledge of the literature goes, there has been any considerable support for this opinion coming from neurologists.

The chief discussion of the subject has been in Germany, although before that, Walton,[2] in this country, had decried the importance of many of the symptoms observed and maintained the possibility of successful simulation, and Seguin[3] had in part assented to his views. In 1890, J. Hoffmann[4] reported a series of twenty-four cases, eight of which he claimed were fraudulent. Soon after, at the International Medical Congress in Berlin, a heated discussion took place, and Schultze,[5] Seeligmüller[6] and Mendel[7] took practically the same position, claiming that from one-fourth to one-third of all cases were fraudulent. Eisenlohr and Reinhard[8] have also held similar views. These views have been fiercely attacked by Oppenheim,[9] supported by Dubois,[10] Möbius,[11] Strümpell,[12] Bruns,[13] Wernicke[14] and others. The cases of alleged simulation published by Hoffmann and Seeligmüller have been subjected to destructive criticism by Dubois, Möbius and Oppenheim,[15] while Oppenheim and his supporters have not hesitated to assert that those who find simulation so common have not a thorough knowledge of nervous diseases, especially of hysteria, and to quote Kühn's[16] statement on the simulation of insanity, to the effect that the number of simulants seen by the physician is usually in inverse ratio to his psychiatric knowledge. It is, moreover, of some significance that, in a second series of cases, Schultze[17] has found only ten per cent. of simulants, instead of thirty-three as in his first series.

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[1] Read before the American Neurological Association, July 27, 1893.

[2] Boston Med. and Surg. Jour., December 19, 1889; Jour. Nerv. and Ment. Dis., July, 1890.

In the study of traumatic nervous affections we run great risk of error, and we are liable to decide incorrectly that the patient is simulating, if we are not governed by the same principles which we apply to cases not of traumatic origin. Even in this latter class of cases we often see harsh and unjust judgment pronounced. If the patient have a disease of the imagination or of the will, it does not mean that the disease itself is imaginary or voluntary; yet, unfortunately, the majority of neurasthenic and hysterical patients are exposed to this reproach. The opinion is almost universal among the laity that patients with these disorders are "merely nervous; if they would only exercise a little will power they would be all right." There is much to warrant such a slur. The neurologist knows that the patient's statement that she has not slept a wink all night means that she has been awake an hour and a half out of the nine hours in bed, but the friends and the family physician are too often unable to make the proper personal equation and call the patient a liar. Tender regions in a hysterical patient may lose their tenderness or become much less tender if the patient's attention be diverted; analgesia may be associated with exaggerated sensibility to touch, or exquisite tenderness to touch may be associated with comparative indifference to deep pressure. A woman who vows that she cannot set foot to the floor may be led, either by the vigorous personality of the physician or by the "patter" and passes of hypnotism, to walk across the room. In many cases we find that some profound stimulus will rouse the enfeebled will power and that under the influence of the stimulus, the patient can do many things which before were impossible. Moreover the condition of the patient varies remarkably from day to day, and many symptoms, such as the extent of anæsthesia or the degree of limitation of the visual field, undergo pronounced changes.

In hysteria especially, there are many curious conditions which, to a layman, would be conclusive proof of simulation. For example, hysterical amblyopia affecting one eye, as Pitres[18] has shown, may exist only in monocular vision. When, for example, the right eye was closed, one of his patients with the left eye could hardly tell light from darkness; but, with a prism over either eye, she saw two objects, and, with a screen vertically before the middle of her face, she read letters on both sides of the screen, but, with the right eye closed, she saw no letters at all, and with the left eye closed she saw only the letters on the right of the screen. In such a case it is no wonder that a distinguished oculist should have told Pitres that he believed all cases of hysterical amblyopia were fraudulent. Janet,[19] too, has shown, and I have observed it myself, that if, in hysterical anæsthesia we touch the affected part, and then tap the "hidden self," we find that the patient has actually felt the touch. With pronounced contraction of the visual field, moreover, it is probable that the patient sees in the alleged blind region, for such patients go about without difficulty, a thing which has been frequently observed in cases where there was no litigation or thought of simulation, yet a thing which to some seems proof of simulation. Again, a patient may not be able to walk, yet examination will show that the sensibility, the nutrition, the power of co-ordination, and the muscular strength in the legs are normal, and the same patient can hop about the room perfectly well on either foot, or get about on all fours or with a tragedian's stride — and yet astasia-abasia may be a genuine affection. Other movements may be possible as co-ordinated movements, which cannot be performed by a distinct voluntary effort; just as an aphasic may sometimes sing a song when he cannot repeat the individual words; the lower centres being able to perform their functions perfectly when the higher cortical centres are powerless.

Hysterical and neurasthenic patients, moreover, may be very suggestible. In some cases the manipulations of an examination may be of influence, and may lessen or increase a sensory disturbance; the manipulation of a paralyzed arm may lead to muscular contractions, and when it is raised to a horizontal plane it may stay there under the influence of suggestion instead of dropping as would naturally be the case.

We have not disproved the existence of paranoia when we have demonstrated that there are no wires carrying electrical influences into the walls of the patient's room, and, in like manner, when we prove that the patient, under a powerful stimulus, can do what she says she cannot, that her pain is most marked when her attention is called to it, that her condition varies from day to day, that many of her complaints are due to a perverted imagination, and that much of her disability is due to a weak will — even if we prove all this, we do not disprove the existence of hysteria or neurasthenia. Neurologists, of course, are familiar with all these conditions and they can judge of them correctly, but the profession at large are, unfortunately, still ignorant of them, and hysterical or neurasthenic patients are often misjudged in consequence, while the laity often think them deserving of the dark house and the whip once used for the insane.

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[3] [illegible]

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[12] [illegible]

[13] [illegible]

[14] Neurolog. Centralbl., May 1, 1893.

[15] [illegible]

[16] [illegible]

[17] [illegible] Zeitschr. f. Nervenheilk., [illegible]

[18] [illegible]

[19] [illegible]

It is impossible, as I have already said, to judge correctly of traumatic nervous affections without a thorough knowledge of nervous diseases in general. No man can become an expert simply by reading Erichsen, or Page, or Charcot, or Oppenheim, or all together. All these seemingly fraudulent conditions which I have spoken of, and many more, may exist in traumatic cases, and the chances are ten to one that they will be set down as proof of simulation — yet they may be genuine and the demonstration that the symptoms are not what they are claimed may be no proof at all of fraud. Suppose, for example, that a case of astasia-abasia were to come into court. Hundreds of physicians capable of making a careful and fairly thorough examination would find no defect and would swear that the case was fraudulent, yet the few men familiar with the affection would admit the possibility of its genuineness. The proofs of simulation, therefore, are not absolute and cases that seem palpably fraudulent to the ordinary practitioner become genuine or, at least, doubtful, the wider our knowledge of hysteria and neurasthenia becomes.

Bearing these points in mind we will usually find, by a thorough examination, that there are various symptoms which put simulation pretty well out of the question. I have already [20] gone into the question of methods of examination at considerable length, so that I shall here touch upon only a few points.

Setting aside the question as to the frequency with which contraction of the visual field occurs, I believe it to be a sign of great value when it is found, and the few experiments which I have been able to make on healthy subjects have led me to believe that it is very difficult, if not impossible, to simulate successfully a definite limitation, especially if that limitation be slight. Wilbrand and Sänger [21] confirm this opinion, and show how, by certain variations in the method of testing, such as testing on the arc of a much larger circle, simulation can be readily detected. If Förster's shifting type (Verschiebungstypus) of contraction be present, the genuineness of the symptom, according to König,[22] becomes still more pronounced.

Anæsthesia I believe to be an important symptom. Where the boundary is definite it is safe to assume that the symptom is genuine. Some people can determine with considerable accuracy whether they are touched to the right or the left of the median line, but if the boundary be to one side or pass more horizontally about the body or limbs it becomes much more difficult to tell on which side of the line the touch is made. Where there is much anæsthesia an unexpected and severe painful stimulant will elicit an expression of pain. Pitres [23] gives an instructive case of a man who came to the hospital to get a place to live in. He had for years played the part of the anæsthetic man in a show who stuck needles all over himself, and hence he feigned anæsthesia as a part of his fictitious disease, but the unexpected application of painful stimuli at once exposed his pretensions. This I believe to be the rule. If the prick be expected, any man can control himself so as not to express any feeling, but, for reasons which I shall speak of later, no man can keep constantly on his guard to repress emotion from an unexpected painful stimulus.

A simulated tremor can readily be detected because voluntary trembling is always of unequal rhythm and the movements vary in extent. If a fairly regular voluntary tremor be produced in the way Walton has suggested, by resting the hands on a table, it will require but little acumen on the part of the examiner to detect it. Of other motor disturbances, paralysis and contracture, I will speak later on.

The condition of the reflexes is of much importance. A difference in the skin reflexes on the two sides in cases of hemianæsthesia will establish the existence of anæsthesia beyond dispute, and the exaggeration of the knee-jerks so often met with, although not beyond the normal limits, is often suggestive of neurasthenic conditions.

Finally the condition of the circulatory apparatus is often important. A rapid pulse when the patient first presents himself for examination is, as Walton has shown, a very common thing in all sorts of cases; but a persistent rapid pulse is of more significance. Evidences of defective circulation are also frequent. Mannkopf's test of the increased rapidity of the pulse from pressure on painful regions has justly been accepted by Schultze as positive evidence of absolute value, and I have proved its importance in many cases.

All these symptoms may fairly be regarded as objective evidence of morbid conditions, and careful examination will reveal some of them in almost every case.

Let us consider now the ordeal through which a simulator must pass in order to deceive a skilled neurologist.

Of course, it may be admitted that if he complain of one subjective symptom, such as headache, it will be a difficult matter to prove the truth of his statements; but, if he present the symptom-complex of hysteria, neurasthenia, or any of the forms of traumatic nervous disease which are now recognized, the case is different. Let us suppose him to be wise enough to describe his symptoms in a subdued tone, to complain of moderate pain, of partial paralysis, of slight limitation of the visual field, of slight anæsthesia, instead of painting everything in vivid colors the way the ordinary prison malingerer does. Let him study any approved monograph on the subject — and he must know a foreign language to get at the best — and let him have a fairly skilful medical coach to train him in his feigning. With all that he is at an enormous disadvantage. The chances are that no man of high professional attainment would become a partner in such a scheme, so that his coach must be inferior to the examiner. The examiner knows all the monographs he has studied and more besides; he has the foundation which the simulator has not of a thorough knowledge of nervous diseases, and he has had experience in examining hundreds of cases and familiarity with instruments of precision. Even if the simulator be well-trained it is no very difficult matter for an expert to find the flaws in his acting; but if the examiner, as is so often the case, be a man without special training in nervous diseases, the simulator may succeed and the examiner will be likely to fall into error. This condition, however, which I have just described, demands that the simulator have learning enough to profit by his study and wit enough to play the part. It is needless to say that in the majority of cases that we see such attributes are lacking. Simulation of mental symptoms is especially difficult.

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[20] Boston Medical and Surgical Journal, December 19, 26, 1889.

[21] Ueber Sehstorungen bei functionellen Nervenleiden.

[22] Berliner klin. Wochenschr., No. 31, 1891.

[23] Op. cit., i, 79.

Another point must be borne in mind, to which attention has seldom been called. Recent investigations in psychical research have shown that it is possible for a man to keep his attention steadily fixed on any one subject only for a very short time. This is the secret of the prestidigitator's success. In every trick there is some one movement necessary to its success, which is done in full sight of the audience. Even if they know what the movement must be, it is impossible for them to keep a continuous lookout for it, and when by the many needless flourishes and the continual "patter" their attention is diverted for half a second, the movement is made and not more than one in a hundred has seen it. If it be thus impossible to keep the attention fixed on one thing, it is much harder to keep it fixed on half-a-dozen things at once; just as a man who plays a fair game of chess may find it impossible to play half-a-dozen games at once. When, therefore, a man tries to feign paralysis, anæsthesia, tremor, hyperæsthesia, and contracted visual field, granting that he could feign each one fairly well for a few minutes, it becomes impossible for him to keep it up for an hour or two before a man who is watching to take him off his guard.

I believe, therefore, that the successful simulation of any of the more complex forms of traumatic nervous affections is practically impossible if the examining physician be a trained neurologist, familiar with nervous and mental disease and with the methods of special examination.

I will cite very briefly three cases where the plaintiff was alleged to have simulated disease in the hope of obtaining damages.

Mrs. R. was said by all her neighbors to be a fraud, and it was alleged that she and her husband were planning to swindle the railroad company, but no special evidence of their suspicions could be elicited. Two surgeons of high standing had examined her a year and a half before and found nothing to lead them to think she had any serious trouble. They reported that she would get well when the case was settled. One of the lawyers for the road was positive that she was a fraud. I found general diminution of sensibility, great muscular weakness, absence of knee-jerks and of the abdominal reflex on one side, diminished faradic reactions, and Mannkopf's symptom. Three days later she died.

M. H., a very stupid day laborer, was regarded as a fraud by three physicians of high standing. He was seen out of doors, but when the doctor came he hurried into the house and got into bed. Examination in the presence of the counsel for the defence, however, convinced him of the genuineness of the patient's complaints, and he settled the case. The man had hemianalgesia with normal tactile sense, exaggerated knee-jerks, and Mannkopf's symptom, and he was besides, very pale and wretched looking.

In the case of E. R., the charge of simulation was hotly maintained. The patient complained of complete paralysis and anæsthesia on the right side. About half the adult population of a little country town swore that they had seen him use repeatedly the paralyzed arm and leg; the other half swore they had never seen him do so. The visual field was slightly contracted, and the blue field was smaller than the red. There was complete and sharply defined hemianæsthesia, and the strongest faradic current conveyed through a needle-pointed electrode, when unexpectedly applied, did not cause a start. The pulse was not quickened by driving pins under the finger nail. The tendon reflexes of the paralyzed arm were exaggerated, and the plantar reflex was absent in the anæsthetic foot. The paralyzed hand was cold and congested, and there was a diminished growth of hair on it. The right arm was nearly three centimetres smaller round than the left, which the defence claimed was simply atrophy from disuse, but they attempted, in order to disprove the paralysis, to show that he had repeatedly used the arm. Finally electrical examination showed degenerative reaction in the arm.

In going over the records of fifty consecutive cases which I have examined with reference to determining the degree of injury and to giving an opinion to be used in settling the claim for damages, I find that the percentage of simulation is very small. The cases, it may be said, were of all sorts, from simple traumatic lumbago to fracture of the vertebræ with complete division of the cord.

Of these fifty cases, thirty-eight were undoubtedly genuine, and were due to the injury. In these cases there was little special exaggeration, not much more than the ordinary extreme statements of an invalid. In six there was old chronic disease, but in five of the cases I was able to convince myself that the injury had clearly produced certain symptoms which aggravated the disease. One of the five cases was a case of tabes who had a traumatic lumbago. He had previously had merely the initial pains of tabes which he called rheumatism, and the result of learning that he had tabes had a very bad mental effect. In the sixth case I could find no evidence of fresh disease on examination, and nothing to corroborate the patient's statements, which were vague and contradictory.

In five cases there was distinct exaggeration, usually, however, involuntary. One patient, in whom I found nothing on examination, admitted that she had nearly recovered, but her statement as to previous suffering seemed out of all relation to her present condition. Another man was seriously injured, but made a good recovery, yet, perhaps from hypochondriasis, perhaps from the continuance of litigation, he made no effort and complained a good deal, until, after a second examination, I assured him that he was well, when he promptly improved, before the litigation was ended. Two other cases thought they had received an electric shock, and they imagined all sorts of ills in consequence. In one case certainly the assurance that no harm had been done had a speedy beneficial effect. Such hypochondriacal conditions are very common in cases where there is neither traumatism nor litigation, and it is certainly unjust to regard their morbid fears as a mere pretence.

Two of the cases were in children. In Walton's series of eighty-two cases he found none in children under fifteen. I have seen five cases in children, three of which are included in this series, but one was a case of coarse mechanical injury — fracture of the spine. In one of the cases physical examination revealed nothing except a very apathetic condition, but the mother's statement as to the mental condition was confirmed by disinterested observers. In the second case the parents made extravagant claims, but no complaints could be elicited from the child, and examination revealed nothing abnormal except a slight peculiarity in going up and down stairs. The child was only seven, so that the guilt of simulation must rest more upon his parents than upon him.

Out of fifty cases, therefore, I find only two where simulation seems at all probable — one case of pre-existing disease and this child — and in neither of these cases is deliberate, conscious simulation proven. Exaggeration is more common, but even in extreme cases it may be due to perfectly natural causes, and not to an attempt deliberately to deceive. Men will simulate if they can, but ignorance cannot contend against knowledge. The charge of simulation is a favorite defence in suits for damages, but I believe it can seldom be substantiated, and that it rests more upon the ignorance of the examining physician than upon any conscious volition of the patient.

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THE STUDY OF THE ANATOMY OF THE CENTRAL NERVOUS SYSTEM.

BY EDWARD WYLLYS TAYLOR, M.D.,
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It is probable that no single province of scientific medicine is, at present, demanding more critical study from so large a number of skilled investigators, than is that of the finer anatomy of the central nervous system. The reasons are not far to seek. First, human anatomy, excluding the nervous system, is, generally speaking, a closed chapter. If certain details yet remain to be added, it may still be said that the finer histological structure of the organs and tissues of the body, as well as its grosser form, is adequately understood. The topography of the brain, spinal cord, and peripheral nervous system, at the beginning of this century had also been thoroughly studied, so that little remained to be added. The histological character, on the other hand, remained completely obscure, for the reason that no methods of preparation had, as yet, been found by whose aid the observer could distinguish its various elements. In the second place, the nervous system, corresponding to its dignity in the organism, stands at the head of the tissues in complexity of arrangement and therefore was naturally the last to demand scientific investigation. Finally, with the growth of the spirit of exact observation, the feeling has developed that the interests of physiology and psychology, as well as those of anatomy, demanded a most thorough-going investigation of the finer relations of the physical elements, which we recognize as inseparably associated with our mental life, in its broadest sense. To the physiologist, it is a matter of the utmost theoretical importance to determine the exact anatomical conditions under which sensory and motor conduction, for example, take place. For the psychologist, also, who has taken his place among empirical investigators, the physical substratum of the psychical processes, which are his main interest, is no longer a matter of indifference. In the psychologist's training, anatomical and physiological knowledge have, in great measure, taken the place of metaphysical speculation. For the anatomist, finally, the subject has become of absorbing interest on its purely scientific side — the facts, simply as facts, are interesting enough to demand his faithful study.

The fact, then, that the histology of the nervous system was not understood and the fact that in the interest of physiology and psychology, as well as in that of anatomy for its own sake, it demanded investigation, may be looked upon as ultimate reasons of the enthusiastic research of the last few years. If, however, such causes have been at work with peculiar force during the past two or three decades, it is equally true that the means of satisfying the scientific curiosity have grown as rapidly, until now, with the aid of the wonderfully improved methods of microscopic research, it is, at least, possible to look forward to the time when the anatomical relations of nervous tissue will stand in the same category of exact histology, as do the component elements of the lung or kidney or liver. How this change has been brought about, and how, step by step, our knowledge has grown, a glance at the history of the study of brain anatomy will show.

Aristotle's conception of the nervous system was, that the brain is without sensation and without blood, and that its function is to precipitate mucus. The spinal cord he regarded as different in character from the brain; the function of the nerves he failed utterly to understand. Galen, in the second century after Christ, was able to give a description of the cranial nerves, which, in some small details, corresponded with the facts. During the Scholastic period the study of anatomy remained as neglected as every other department of knowledge, but with the beginning of the Renaissance the interest revived, and Vesalius, Eustachio, Varoli, Fallopia stand as leaders in arousing an interest in the study of the central nervous system. In the seventeenth century appeared, for the time in which they were written, accurate descriptions of the topography of the brain in the writings of Willis, Vieussens, Sylvius and others. Toward the end of the last and the beginning of the present century the work of Sömmering, Vicq d'Azyr, Rolando, Spurzheim, Gall, Riel, Burdach and others had brought the descriptive anatomy of the brain practically to completion; the relation of fibre systems to each other and to the various ganglia, and in general the finer structure remained, however, almost completely uninvestigated. In 1819 appeared Burdach's book, entitled, "Vom Bau und Leben des Gehirns," which is to be regarded as the completest work on the subject up to that time.

It is interesting to note the methods of research employed. At first, hardened bits of the brain were roughly torn apart with forceps, until, in the third and fourth decades of the century, with the discovery of nerve fibres and ganglion cells, the necessity of a less crude procedure brought about the method which Stilling first regularly used, namely, of preparing thin sections serially, so that the brain might be again reconstructed from the separate pieces. The value and, in fact, necessity of such a method is being more and more recognized for an adequate understanding of the rélations of the various parts of the brain. From its introduction dates a most decided advance in our knowledge. Stilling himself seems fully to have recognized the significance of his procedure. Of a section through the hardened spinal cord he, in substance, writes: "When I brought the section under the microscope, with a power of fifteen diameters, and saw the beautiful transverse fibres, I knew that I had found a key which would unlock the chambers of the marvellous structure of the spinal cord."

With the introduction of the microtome and the improved means of hardening nervous tissue came a new step in advance, but it was not until 1858, when Gerlach introduced the method of staining with carmine, that a really adequate differentiation could be made between the nerve fibres of the white matter, and the cells and connective-tissue of the gray matter. This method, by which the medullary sheaths of the nerve fibres were left practically unstained, while the ganglion cells, axis-cylinders, and neuroglia tissue took on a red color, was for many years the only one used and even now must be looked upon, as, by all means, one of the most valuable we have, and one which should never be neglected in the investigation of pathological changes. From the introduction of carmine as a staining agent dates a new era in the study of the finer anatomy; relations of gray and white matter became at once evident, which in fresh preparations could, at best, be but imperfectly distinguished. Other methods of staining followed, as, for example, that with nigrosin, and much valuable work was done by their aid, both anatomical and pathological, but there was still need of a method, by means of which the medullary sheaths of the nerves might be stained and so the course of fibres be more adequately followed. This service Weigert, 1884, rendered in the development of his "hæmatoxylin method," a method which has been one of the most valuable and significant in its results in the whole field of nervous anatomy. By it, the finest medullated fibre is stained black or deep blue, its course is thus easy to follow, and relations of fibre systems are revealed, which carmine had failed to make evident. Through a combination of the two methods, "carmine" and "Weigert hæmatoxylin," the essential characteristics of nervous tissue were brought into clear light.

Space does not permit even an enumeration of the different methods which followed close upon Weigert's publication. Three of the more valuable are: Pal's modification of Weigert's method, again a medullary sheath stain; Freud and Flechsig's gold-chloride axis-cylinder stain; and Exner's osmium-acid stain, especially for peripheral nerves.

Much as these various methods revealed of histological structure the all-important questions still remained entirely obscure — of the relations of nerve cells to each other, the relations of nerve fibres to cells, and the ultimate origin and ending of nerve fibres in the central nervous system. This knowledge none of the methods heretofore mentioned were able adequately to disclose.

The view which excited most controversy and yet seemed to approach nearest to the facts was advanced by Gerlach in 1871, after a careful series of investigations with the gold-method. Six years before, Deiters had arrived at practically the same results. They were, however, worked out by Gerlach with improved methods and in greater detail. Gerlach's conclusions, in brief, were as follows: that, in addition to its axis-cylinder prolongation, each ganglion cell gives off a large number of so-called protoplasmic processes, which soon after leaving the cell-body divide, anastomose with similar offshoots from other ganglion cells, thus forming a dense network, so that finally all the nerve cells of the brain are brought into direct relations with each other, "per continuitatem." As an explanation of the origin of nerve fibres which do not spring from the axis-cylinder prolongation, it was maintained that by the reuniting of certain of the protoplasmic branches, other axis-cylinders were constituted, and that, finally, the nervous system, as a whole, might be regarded as a unit, made up of an infinite number of connected cells and fibres, the connections being, for the most part, effected by the protoplasmic processes.

Discussion arose, but in general the theory of Deiters and Gerlach remained unassailed until the appearance of Golgi's main work, Padua (1885–6). Golgi employed an entirely new method with silver, whose advantage over all previous ones lay in the fact that the stain was selective. The extreme complexity of the network of fibres described by Gerlach no longer obscured the destination of the finest endings of the protoplasmic processes, since in each section, for some as yet obscure reason, only certain cells or fibres took the stain. A simplicity was introduced into the microscopic picture, which evidently detracted nothing from its truth, and yet showed relations which the previous unselective stains had merely tended to obscure.

In the hands of Ramón y Cajal in Spain, the Golgi method received a new impetus, so that now it is certainly not too much to say that it has proved itself to be one of the most significant contributions to histological study of this century. Its teaching is little short of revolutionary, and necessitates a complete reconstruction of our conception of the histology of the nervous system. In its main features the theory advanced by Golgi and substantiated by all those investigators who have employed his method has received universal acceptance. It holds that the relations which Gerlach had supposed to be anastomatic and direct are, in reality, in every case, indirect, that no nerve ending or protoplasmic process connects "per continuitatem" with any other, and that the only relation which exists is one of contact, "per contiguitatem." From this it follows that the nervous system, instead of being a unity of connected elements, is rather a plurality of separate elements, so-called "Nerven-Einheiten" or "Neurone." Each "neuron" consists of a cell, an axis-cylinder (if it have one) and protoplasmic processes. Such a nervous element is a unity, absolutely complete in itself, and bearing no relation, excepting that of contiguity to other equally independent nervous elements. A multiplicity of such distinct units makes up the nervous system. This, in briefest outline, is the essence of the modern view.

The distinction between the old and the new idea is so far-reaching in consequences, that, at the risk of repetition we venture once more to compare them. The old view, represented by Gerlach, maintains — first, that each nervous element stands in *direct* relation to other nervous elements through anatomical continuity, and secondly that the nervous system represents a *closed* unity, each part of which is connected anatomically with every other part. The new theory (Golgi, Ramón y Cajal) holds, on the other hand, that each nervous element is *absolute*, *independent*, stands in *no* direct relation to any other nervous element, and that the nervous system, as a whole, is therefore made up of a plurality of anatomically *unconnected* elements.

The details of technique, the mass of interesting points of dispute which the new disclosures have revealed, the physiological question of nerve conduction by contact, instead of by continuity of structure, do not enter into the scope of the present article. Too much stress, however, cannot be laid upon the extreme significance of a method of research, which has so far altered our preconceived conceptions, and which is likely, in the near future, to introduce clearness into a subject, which heretofore has eluded most conscientious investigation.

Lack of space prevents anything more than a passing allusion to the services of Henle, Meynert, Waller, Türk, Ehrlich, Flechsig, Charcot, Westphal, Gudden, Waldeyer, Lenhossék, His, Kölliker, Gowers, and many other investigators, all of whom have materially advanced the knowledge of the finer anatomy of the nervous system.

It is natural with the renewed interest which recent research has aroused, that special laboratories should have been established. The subject has already grown far beyond the scope of a general anatomical and pathological course; its literature is increasing almost daily, and the microscopic technique, required for the successful preparation of specimens, has developed into a special study. In view of these facts a number of laboratories have been opened, whose general object is to offer courses of instruction in the methods of hardening, imbedding, cutting, and finally staining and mounting of nervous tissue, according to the various more or less complicated processes, already alluded to. Of such laboratories the best known are those of Obersteiner in Vienna, of Weigert and Edinger, who work together in Frankfurt am Main, of Mendel and of Oppenheim in Berlin. Each of these laboratories is devoted solely to the study of the normal and pathological anatomy of the nervous system. With certain restrictions in the case of the Weigert-Edinger laboratory, they are all open to students. Original work with the publication of results is, in general, desired, but of course is in no sense compulsory, the main object being to provide adequate instruction in methods which are essential to a correct understanding of the finer anatomy of the nervous system. It is probable that, within a short time, a third laboratory will be opened n Berlin under the direction of Professors Jolly and Siemerling; a better indication than this of the enthusiasm which the work is arousing could hardly be given.

In addition to such practical instruction, Professors Waldeyer, Mendel and Siemerling each offered during the last winter "Semester" a course of lectures, extending through the entire term on the normal anatomy of the central nervous system. It goes without saying that the lectures were most amply illustrated by dissections of the fresh brain, by hardened preparations, diagrams, enlargements of microscopic specimens thrown on the screen, and the free use of sections that were taken serially in various directions and through various regions of the brain and cord; the finer anatomy, nuclei of the cranial nerves, and especially the course of fibres, in every case, receiving a large share of attention. To the special student the value of such courses of lectures supplementary to practical microscopic work is self-evident. The crowded lecture-rooms are, however, but another evidence of the widespread interest which the general medical student and physician, as well as the specialist, feel in a subject, which a few years ago they would have left almost completely out of their medical training.

Without drawing comparisons, or prying into causes, it is, at least, interesting to note the fact of the contrast between the English-speaking countries and the continent of Europe in this matter of the scientific investigation and teaching of brain anatomy. Reasons aside, it is evident that England and especially America are so much behind, as scarcely to be able to claim any recognition. Of 175 references to the literature in Lenhossék's latest publication ("Der feinere Bau des Nervensystems," Berne, 1893,) only four or five English names appear and but one American — a disparity which is, unfortunately, evident enough in many departments of scientific work, but which in this case is more than usually conspicuous. It is most earnestly to be hoped that the immediate future may see a change, and that a subject, which, on the face of it, is of the utmost scientific and practical importance to physiology and psychology, as well as to pathology, may have a small place, at least, in the optional laboratory training of the American medical student.

Clinical Department.

A CASE OF LITHOLAPAXY.

BY FRANK M. SHERMAN, M.D., NEWTON LOWER FALLS, MASS.

Mrs. C., aged forty-seven, widow, mother of seven children, passed "sand" with the urine eighteen years ago. Eight years ago, soon after the birth of her youngest child, she began to have pain in the bladder region, especially during micturition, and then began to notice a deposit in the urine. These symptoms have steadily increased in severity. Eighteen months ago she began to have incontinence of urine, this also has continued.

June 17, 1893, I was called, and found her suffering with fever, chills, pain, frequent desire to micturate, tenesmus, incontinence of urine, and loss of appetite. The urine contained a large amount of pus and blood. Examination showed extreme tenderness of the bladder. The bladder cavity was small, and a stone was plainly felt. There was evident dilatation of the neck of the bladder and of the upper part of the urethra.

For the next three days the bladder was washed out with boric-acid solution and the same drug was administered internally.

The general and local conditions being much improved, with the assistance of Dr. W. B. Lancaster, of Wellesley Hills, litholapaxy was done on June 21st.

Using cocaine anæsthesia, the Bigelow lithotrite, and Newell's evacuator, and short, straight, open-end tubes (which worked perfectly in evacuating the *débris*), the only difficulty found in the operation was the trouble in keeping enough water in the bladder to easily manipulate the lithotrite.

The stone (phosphatic) was about one and one-half inches in diameter. The bladder was washed out daily for a week. The urine and the washings contained much muddy and sticky detritus for several days, then became clear.

Recovery was uneventful. There was no rise of temperature. Patient was up and about in eight days.

The incontinence still continued; and July 1st a soft "doughnut" pessary was introduced into the vagina, which effectually controlled it.

On August 3d the bladder was examined and washed out. The urine was found clear. No signs of re-formation of the stone. The pessary is still necessary to control the incontinence.

THE SUBCUTANEOUS INJECTION OF SALT SOLUTION A SUBSTITUTE FOR THE INTRAVENOUS METHOD; REPORT OF CASES AND A SIMPLE APPARATUS.

BY FARRAR COBB, A.M., M.D.,
House Surgeon, Massachusetts General Hospital.

In a number of cases of collapse seen during the past three months of my hospital service sterilized salt solution was used subcutaneously instead of intravenously. A large-sized trocar of the aspirator pattern with a stopcock and entrance on the side, about six to eight feet of rubber tubing, and a hard-rubber funnel was the apparatus. The funnel and tubing after being sterilized were kept in corrosive sublimate (1–1000). The trocar was kept sterilized in a tin-box. The sterilized salt solution was kept at a strength of twelve parts to the thousand, so that when needed the addition of an equal amount of boiling water made it of the proper strength and temperature for instant use.

The following cases were all grave emergencies from hæmorrhage or shock.

Case I. Brought to hospital with a stab wound through the popliteal vein. When first seen had no pulse, was blanched, with sighing respiration and cold extremities. Three pints of hot salt solution were injected under the skin of the abdomen and thighs. The time of preparation taken was only that needed to scrub the skin and add boiling water to the solution. The pulse responded almost at once, and twenty minutes after the injections was good. The case fully recovered.

Case II. Internal hæmorrhage from ruptured kidneys and spleen. Four hours after entrance unconscious, cold extremities, blanched and pulseless. Three pints of hot salt solution injected into inguinal regions and thighs, resulting in rapid improvement in the pulse. The man regained consciousness and talked with his friends for an hour, but after this slowly failed, and died during the day. In this case the improvement in the pulse and mental condition was surprisingly lasting.

Case III. Marked signs of internal hæmorrhage, pulse almost imperceptible, blanched, unconscious. A quart of hot salt solution injected, giving fairly good pulse and return to consciousness for half an hour; but after this he became again pulseless, and died.

Case IV. Railroad accident. Crush of lower leg, with evident marked loss of blood. Pulse very faint and rapid, cold extremities. A quart of hot salt solution was injected (after vigorous stimulation with digitalis, atropine and strychnine had failed to cause reaction), and resulted in rapid improvement; eventually he recovered sufficiently for a successful amputation.

Case V. Severe abdominal operation for fibroid with profuse hæmorrhage followed by collapse. A quart of hot salt solution caused rapid improvement, and the case ultimately recovered.

Case VI. Both legs crushed in railroad accident. Condition of extreme shock, not reacting to vigorous stimulation. Three pints of hot salt solution under the skin caused steady gain. Pulse became fairly strong, the face regained its color, and the improvement lasted for three hours, though ultimately the man died.

The advantages of this method are its simplicity and the rapidity with which it can be done. The pressure of from four to six feet is enough to make the fluid run freely. In the above cases the loose skin in the inguinal regions was selected and the assistant stood on a chair or table holding up the funnel which he kept filled with salt solution from a pitcher. The inguinal regions took from ten to twelve ounces and the outside of the thigh somewhat less. The fluid always ran readily and was absorbed with astonishing rapidity. The effect on the pulse was not quite as soon noticed as if the solution had been thrown directly into a vein, but improvement began in every case before six ounces had been injected, and was after that as marked and as lasting as in the intravenous method. The two or three minutes wait for a response was more than offset by the saving of time in the technique as compared to opening a vein.

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Medical Progress.

REPORT ON DERMATOLOGY.

BY J. T. BOWEN, M.D., BOSTON.

(Concluded from No. 11, p. [illegible].)

CUTANEOUS SARCOMA.[4]

On the 3d of January, 1893, Kaposi exhibited at the Vienna Medical Society three patients suffering from different varieties of sarcoma of the skin. He passes over the cases of isolated sarcoma of the skin, which may appear spontaneously or after injuries, and which may not have recurred ten or fifteen years after extirpation. The forms in question are those that constitute a serious general disease, by the extension of the tumors.

The first case presented was that of a man of fifty-one, affected with multiple idiopathic pigmented sarcoma, the form first described by Kaposi, in 1869. In this form the nodules always appear at the same time upon the hands and feet, are of a bright red color, changing sometimes to a bluish or dark red in consequence of capillary hæmorrhages, and become confluent to such an extent as to form nodular tumefactions upon the hands, fingers and toes, and cause a painful sensation of burning and tension. Ulceration is rare, usually only after traumatism. After the lapse of months or years the oldest nodules disappear by absorption and leave a brown cicatricial atrophy of the skin, not unlike that seen in syphilis and leprosy. A long time afterward new papules and nodules of the same type appear upon the arms, legs, ears, nose and lips, many of which are absorbed, while others increase and form fungous tumors. Finally, after five to eight years, nodules appear on the mucous membranes, in the lungs and internal organs, and the autopsy reveals a great number of very vascular nodules in the liver, spleen, and on the mucous membrane of the large intestine.

The course of this form is, therefore, rather slow, but always fatal. No good results have been obtained by treatment with arsenic.

The case presented showed a deviation from this type. It developed four years previously, with excessive pain and swelling of the hands and feet. Eleven months previously, on entrance into the hospital, the dorsal aspect of the hands and feet was greatly tumefied, of a reddish-blue color at the centre of the swelling, while the margin alone presented some small reddish-blue papular elevations. The palms and soles were red, swollen and excessively painful. Kaposi had never seen so great redness, induration, and tumefaction, except in the case of very confluent nodules. But in spite of the deviation from the usual type, the correctness of the diagnosis was proved by the appearances that were then seen — namely, characteristic papules and nodules upon the ears and pupils, and a plaque with atrophy in the centre upon the buttock,— appearances that are, it is true, not usually seen until numerous nodules have formed on the hands and feet. At first, there was an improvement under treatment, but of late numerous foci had appeared on the buttocks and limbs in the form of disks and irregular circles, with slight infiltration.

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[4] Wiener Klin. Wochenschrift.

A second type, the true melanotic sarcoma, was shown in a man of fifty-one years, that had begun three years previously with a swelling of the left leg. It is now the seat of an elephantiasis, less pronounced upon the right leg, and extending upward toward the pelvis; on the left knee were numerous reddish-brown nodules, and on the thigh numerous hard, dark blue papules. This form frequently arises from a nævus, often of the toe, which degenerates into a sarcoma or is excised, and the affection then extends along the lymphatic channels reaching the pelvis and internal organs. This form often appears on the skin, also, as a metastasis of primary visceral sarcoma.

A third type of cutaneous sarcoma was illustrated by a woman of seventy-six years. This type is less sharply defined histologically, as its relation to certain constitutional conditions as leucæmia and pseudo-leucæmia are a matter of dispute at present. The case in question had begun three or four years previously, and presented now nearly one hundred tumors upon the two shoulders front and back, upon the upper part of the chest and scapular region. The nodules were hard and elastic, from the size of a pea to that of a nut, hemispherical in form, from bright to dark red, glistening, and painful to the touch. There were also plaques as large as the palm of the hand, with central depression, like those of mycosis fungoides. There were almost as many nodules on the dorsal and sacral regions, the thorax and abdomen, together with a few on the limbs. As two similar cases, of which drawings were shown, had been cured by arsenic, injections of the arseniate of soda were tried. After six or eight injections most of the nodules had diminished one-half or one-third, but later, in spite of persistence with the treatment, they had again increased in size. Kaposi pointed out that since arsenic was first recommended by Köbner, many cases had been reported as cured by arsenic, a part of which, however, had finally terminated fatally.

Histologically, the place of this form has not yet been settled. In many respects the microscopic appearances resemble those of a round-celled sarcoma, while some have classed them with the lympho-sarcomata. In some of the cases leucæmia has been determined, in others pseudo-leucæmia, in still others no such complication. In this case the blood was normal. The same is true of mycosis fungoides and of lymphoderma perniciosa, where leucæmia has been sometimes observed, sometimes not. Further careful examinations are necessary, and transitional forms between these types may be found. He proposes provisionally the name sarcomatosis for these varieties.

CIRCUMSCRIBED LYMPHANGIOMA OF THE SKIN.

A number of cases of this peculiar and rare disorder have been studied and described of late years. Francis,[5] in the article before us, notes several that have come under his own observation and then attempts to group the recorded cases, partially on an anatomical, partly on a clinical basis.

Case I is that of a male fourteen years of age, a bricklayer's apprentice. He has suffered from the disease nearly all his life, but cannot say positively when it first appeared. For the last two or three years there have been illnesses connected with the disease, occurring about every six weeks, and lasting two or three days, and consisting of great tenderness in the affected parts, and usually severe headache and nausea. The right buttock is the seat of irregular growths of the skin, varying from a pin's head to a five-shilling piece in size, in clusters which appear confluent in places and of a warty appearance at a short distance. There were very few vesicular lesions found in this case, and these only in the youngest and smallest patches; in the older and larger growths the cuticle seems thicker and the papule more solid. There were no appearances of dilated capillary blood-vessels.

The larger patches were shaved off to the level of the skin and the base touched in different parts with the thermocautery, fuming nitric acid, and salicylic acid cream. The wounds healed, and he was discharged apparently cured. In four months he was readmitted to the hospital. The part that had been excised was the seat of a raised brawny growth, of a reddish-brown color and quite firm. Numerous new patches of disease had appeared beyond the area of the old growth, consisting of isolated vesicles and groups of vesicles, like those of herpes, situated on a slightly raised base; the vesicles are translucent, covered by a firm cuticle and not easily ruptured. There have been no fresh attacks of pain. Some of the larger patches were excised and the smaller ones treated with the thermocautery.

Microscopic examination of a small papule excised, showed a dilatation of the lymphatic channels and capillaries, and in the central part the septa had broken down between them to form small multilocular cysts. The epidermis was not involved. The contents of the cysts were lymph coagula with a few leucocytes. Occasionally, at the lower part of the growth, dilated blood capillaries were seen.

Case II is that of a male child, three and one-half years old, upon whose right leg a rash was noticed for the first time on the third day after birth, which has persisted and spread ever since. No history of inflammatory attacks in this region. The eruption is limited to the right lower leg, groin and perineum, and is distributed as an elongated streak from the inner malleolus along the line of the internal saphenous vein to the region of the saphenous opening, where it divides into two branches, one passing outward to near the anterior iliac spine, the other passing backward to the perineum and ending near the anus. The growth is composed of clusters of papules and vesicles. There are no dilated capillaries to be seen.

Case III. Female of fifty-five years. The patient is quite sure that the region affected was natural until three years ago, when she received a severe blow in this place. The left side of the face exhibits a thickened patch of skin, with poorly defined margins, the surface of which is studded with minute translucent vesicles, with tough walls, exuding a clear fluid when pricked. No isolated tubercles and no telangiectasis on the face.

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[5] British Journal of Dermatology, February, 1893.

Case IV. Female, sixteen years. Tuberculosis of lungs. On the left side of chest a streak of nævoid growths in the mid-axillary line. The largest growth was present at birth, and of a general reddish-blue color; it is now slightly raised, but contains no vesicles, while scattered about this are many little growths composed of a single vesicle or group of vesicles, with tough walls, containing a clear fluid. One patch is covered by dilated blood-vessels and small blood cysts. No history of inflammatory attacks. The patch was excised, and there had been no recurrence a year later.

Case V. A female of seventeen, the affection being seated in the left axilla. It had existed since the age of two months.

Case VI was a female adult, part of the growth being congenital, part having appeared since birth. It was situated in the right axilla and on the right arm.

Case VII. A female child of eight. Partially congenital and this portion an ordinary nævus. The remaining portion consisted of dilated lymphatics, presenting, clinically, grouped vesicles.

Lymphangiomata which affect the skin alone, are closely allied pathologically to similar processes in the subcutaneous and deeper tissues, and with congenital elephantiasis and congenital tumors of mesoblastic origin. The author, although regarding them as very closely allied, suggests that the circumscribed lymphangiomata of the skin be divided into groups and sub-groups as follows:

Group I. Lymphangioma simplex. Of this he has been able to find but one case. It may be defined as a dense plexus of normal-sized, normal-walled lymphatic vessels, with no alteration in the surrounding tissues.

Group II. Lymphangioma cavernosum. Numerous tumors are distributed over the whole body, compressible, sometimes associated with pachydermia.

Group IV. Hæmatolymphangioma. The lymphatic and capillary blood-vessels are so closely allied that we may assume that hæmangioma and lymphangioma may not only occur in the same patient, but also in the same growth. The appearance of the growths differs widely according to the varying proportions of lymphatic and blood-vessel growth.

Sub-group (*a*) includes cases where we have originally a mixed hæmatolymphangioma, and the hæmangiomatous part undergoes retrogression, while the lymphangiomatous part proceeds to further development.

Sub-group (*b*). In this group he places those cases in which the original growth is a well-defined hæmangioma, but is subsequently associated with lymphangioma, or in which well-defined hæmangioma co-exists with lymphangioma. Nine cases belonging to this sub-group are cited.

Sub-group (*c*). Those cases of lymphangioma in which the only naked-eye evidence of hæmangioma consists in dilated tufts or striæ of capillary blood-vessels.

Sub-group (*d*). Those cases, which microscopically are shown to be hæmatolymphangiomata, but which to the naked eye appear free from hæmangioma.

From twenty-eight cases which the writer was able to collect of the fourth group (the hæmatolymphangiomata, with which we are especially engaged) he finds that of twenty-six, fourteen were males and twelve females, the favorite location being the upper portions of both upper and lower limbs. The affection is congenital (two cases), or begins early in life, in the majority of instances. There is a tendency for the eruption to take the form of streaks, and there is sometimes a distinct distribution over the nerve trunks. The part played by the nerves in its etiology is obscure; but this distribution and some other facts would point to a *possible* influence. The affection dates probably from embryonic life and is only shown when the lymphatic vessels become enlarged subsequent to birth.

An interesting point is the frequency with which these lymphangiomata are developed upon points exposed to friction and irritation, and sometimes an injury has been regarded as provoking their development. The removal of the disease surgically, or of a pre-existing nævus, has often been shown to be the signal for an acute outburst, and the same result, it is to be noted, has also followed the removal of lymphangiomatous tumors of the tongue.

Recurrent attacks of inflammation, sometimes called erysipelas, are observed in many of the cases. These attacks are often accompanied by fever and malaise, and seem to bear a close relationship with the recurrent attacks of "erysipelas" which accompany or produce an elephantiasis. They differ somewhat from erysipelas in their close limitation to the affected area. The writer suggests that they may be part of an extensive lymphangioblastic process due to some deep-lying cause acting through the vaso-motor nerves. There is no evidence of obstruction of the lymphatic channels in any of these cases.

Numerous cases present, in addition to the newly-formed and dilated lymph vessels, an increase in the amount of fibrous tissue formed, so that the picture of a localized elephantiasis is presented; and it is probable that some cases of dermatolysis and pachydermia may belong in this same class, although they present when seen, no sign of "vesicles" or of lymphatic enlargement. The increase in fibrous tissue is regarded as a secondary phenomenon.

DISTINCT SPECIES OF RINGWORM.

M. Sabouraud,[6] instigated by Besnier, has been investigating the question of the existence of different species of trichophytons and has arrived at conclusions of considerable importance. His results are based upon more than 600 cultures, 100 careful clinical examinations combined with microscopical studies, about 60 cultures in drop (to determine the botanical characteristics) and 20 inoculations on men and animals.

It has been noted that certain cases of ringworm show, upon examination, small spores, while certain others always contain large spores, but no attempt at a differentiation of species from these characteristics has ever before been made. The writer shows in the first place, that these differences are constant, that is, an individual never presents at the same time both the large and the small spore, and the members of a family when several are attacked, always exhibit the same sized spore. He has further been able to differentiate two chief species of the trichophyton. The first species is characterized by small spores without mycelium and he names it the *trichophyton microsporon*. The spores are always extremely small. This form is found in the majority of cases of tinea tonsurans as seen in children. The spores fill the hair completely, and surround it even, so as to form a sort of sheath.

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[6] Annales de Derm. et de Syph., November, 1892.

The second species he calls the *trichophyton macrosporon* and it is characterized by the large size of the spores and by the fact that the hair is never surrounded by the parasite. Almost all the long and rebellious cases of tinea belong to the type characterized by the small spores.

Bacteriological studies proved that different forms of culture could be obtained from the cases containing the different varieties of spores, and this was demonstrated upon several different culture media. Cultures upon potatoes were particularly characteristic. If the cultures of the trichophyton macrosporon are examined after fifteen to eighteen days, they have a dry, powdery, flour-like appearance, which is never pure white, while the trichophyton microsporon has assumed at once the appearance of a perfectly white down. The cultures of one type never merged into nor simulated those of the other. The clinical differences have yet to be more carefully studied. In general it may be said that if the affected hair is large and broken short off, the type will be that characterized by the large spores; while if the hair is fine and not broken near the surface of the skin, the type will be that of the small spores. He considers from his studies that it is probable that the trichophyton macrosporon is the cause of most cases of trichophytosis barbæ, as also of the greater number of cases of tinea circinata (of the non-hairy parts). He thinks, too, that the trichophyton macrosporon is a parasite of the epidermis rather than of the hair. It may invade the hair of the infant, but it is far less frequent here and less rebellious.

It was found, however, that very rarely other forms present themselves, and besides these two chief forms, four other new species were obtained. Further studies with regard to them will be awaited with interest.

A series of inoculations were made by the writer upon himself, with the different species that had been isolated. The inoculations that were successful did not, however, contrary to expectation, prove the existence of a lesion peculiar to each parasitic species. It is necessary for success to render the region of inoculation thoroughly aseptic, and to inoculate by pricking, not by scarifications, which serve to mask the lesion which is to appear in a few days. It is necessary also to take care that the sweat is not acid. It was found that the trichophyton microsporon when inoculated upon the epidermis never produced more than a desquamation upon an erythematous base, and without a pronounced circular form.

Sabouraud also asserts that the parasites of the trichophyton group belong to the genus Botrytis of the mucorini and may be designated as Botrytis trichophyton.

Later, Sabouraud has published accounts of his further studies in this direction, which tend to show that the subject is a very complicated one. He has succeeded in splitting up the trichophyton with large spores into a large number of varieties, as well as into two grand divisions, those of animals and those of men. A notice of these later studies will be included in the next review.

"PERITONEAL pirouettes" is what the Philadelphia *Press* calls the objectionable dances on the Midway Plaisance.

Reports of Societies.

THE PAN-AMERICAN MEDICAL CONGRESS.
SECTION FOR MEDICAL PEDAGOGICS.

C. L. SCUDDER, M.D., SECRETARY.

THE Section in Medical Pedagogics devoted its attention, at the recent meeting of the Pan-American Medical Congress in Washington, D. C., to a consideration of methods of medical teaching, a history of medical education in this country and a series of discussions on preliminary medical education. The work of the Section extended through three days of the Congress.

On Tuesday the President, **DR. J. COLLINS WARREN**, traced the development of medical education in the United States.[1]

PROF. R. H. CHITTENDEN, of the Sheffield Scientific School of Yale, Professor of Physiological Chemistry, presented a valuable paper on the claims of physiological chemistry to occupy a prominent place in the fundamental preparatory training for medical education. Under the head of biology in the courses offered the student in college, is included more or less zoölogy and botany, with a comparatively large amount of dissection of typical forms, together with histology and embryology. This constitutes a presentation of the morphological side of biology. The physiological side is less thoroughly presented, and if presented, consists of muscle and nerve physiology, illustrating the mechanical side of physiology purely. All this side of physiology Professor Chittenden admitted is of the highest importance, but he wished to emphasize the fact that there is another side of physiology not much cultivated in this country as yet, namely, the chemical side or physiological chemistry. He proceeded to describe the scope of such work and the important place which it holds in the medical curriculum.

DR. HAROLD C. ERNST, of Harvard, read a paper upon the importance of bacteriological study and its proper position in the medical school course as a branch by itself, divorced from pathology, either general or surgical.

On Monday an extremely interesting demonstration was made by **DR. ZINKE**, of Cincinnati, of the Cæsarean section and Porro operation. This demonstration illustrated what it is possible to do in the way of making clear, difficult problems in teaching surgery. It illustrated a method of teaching.

DR. BAYARD HOLMES, of Chicago, discussed the methods of medical education in the United States and argued for more thorough scientific training at the outset for all medical men, and the obtaining of the B.A. and M.D. degrees at one time, after a definite course of study. He believes that the tendency toward more laboratory work and less clinical teaching is of the greatest importance.

Dr. Holmes's paper, which was in some respects radical, was discussed by **DR. OSLER** and **DR. WELCH**, of Johns Hopkins, and **DR. FITZ**, of Harvard.

Dr. Osler said: The plan to which Dr. Holmes refers is in successful operation at the medical school in Cambridge, Eng., and is in many respects an ideal one. The student is enabled to obtain the B.A. and M.B. degrees in a little more than five years. The greater part of the academical course is taken up with the subjects of chemistry, biology and anatomy, and the student takes his B.A. degree in the Natural Science subjects. He can in this way obtain the two degrees in a shorter period of time than in the more advanced schools in this country, in which the preliminary chemical and biological work takes from two to three years before the student enters the four years' course of the medical school. I regret I cannot share Dr. Holmes's faith in the State Universities, at any rate as they are at present constituted. New ones organized would be likely to perpetuate the anomaly seen at present of separate Homœopathic establishments, and the folly of duplicating chairs in the important subjects of anatomy, physiology, surgery and pathology, when in reality homœopaths differ from us in a single detail — the treatment of medical cases — the very point upon which we all hold the most varied, often most contrary, views.

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[1] See page 285 of the Journal.

Dr. F. C. Shattuck's paper on methods of teaching clinical medicine, traced the connection between medical schools and hospitals, and emphasized the importance of a school owning its own hospital or at least controlling it. The necessity of both primary as well as advanced clinical teaching was dwelt upon. The value of the clinical conference was set forth.

On Thursday much was accomplished.

Dr. M. H. Richardson, of Harvard, illustrated by blackboard drawings, methods of teaching in anatomy and surgery. This demonstration showed conclusively the value of this rapid, free-hand picture-making in surgical teaching.

Dr. Victor C. Vaughan, of Ann Arbor, Mich., read a paper on the methods of medical education. These he grouped into (1) lectures; (2) recitations from text-books; (3) laboratory instruction; (4) amphitheatre clinics; (5) medical teaching.

W. C. Dabney, M.D., of the University of Virginia, read a paper in which he described the things necessary to a student's thorough medical equipment. He had in mind, not the training all would like, could they afford it, but the best training which the average man can afford.

Dr. J. P. Sawyer, of Cleveland, gave an interesting demonstration of the action of the valves of the heart. By a series of tubes and glass windows introduced at proper places into the heart of a bullock, and by means of an electric light within the heart, it was possible, on forcing water through the tubes and heart to watch the physiological action of the valves.

Prof. W. T. Sedgwick, of the Massachusetts Institute of Technology, presented a paper on preliminary medical education in the United States, in which he discussed in a very fresh and interesting way, the problem of the relations of preliminary medical education to the professional school. He sees in the recent step of Johns Hopkins, reason to fear the practical difficulties which may arise from such advanced requirements.

In connection with Professor Welch's paper, June, 1893, it will be interesting to read Professor Sedgwick's valuable communication.

The meeting of this Section in Pedagogy was a success; and it has done pioneer work in advancing all along the line an appreciation of the importance of the new era in medical education. It has placed on a firm footing the initial step in the direction of the study of methods of medical teaching.

We have been hitherto in the medical school lectured to; we have heard subjects talked about; there has been comparatively little *real teaching done;* hard laboratory teaching in all branches. That an intimate connection between student and patient, through the assistance of the instructor, is important, is only just beginning to be realized. The question how a given subject may best be presented to the student, what method shall be used, is coming to be regarded as of some importance. Competition in teaching — and the better scholarship of medical students to-day as compared with fifteen years ago, demand greater definiteness and more method in teaching.

The practical gain from this great Congress of foreign physicians and surgeons will be that medical education in the United States will, in the minds of foreigners, stand for something real and tangible and valuable. European nations will come more keenly to realize that the United States possesses, in Harvard University, in Columbia College, in the University of Pennsylvania, and in Johns Hopkins University, medical educational plants such as no other nation possesses. That these medical centres will before long attract the attention of students abroad cannot be doubted. It will not be beyond the bounds of possibility if, in a few years, students come from Paris, London and Vienna to enjoy the advantages which once these places alone possessed.

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Recent Literature.

Nuevo Concepto de la Histología de los Centros Nerviosos. Par el Dr. D. Santiago Ramon y Cajal.

Recent Views as to the Histology of the Nervous Centres. By Dr. D. Santiago Ramon y Cajal. 8vo, pp. 68. With twenty-three illustrations. Barcelona: Henrich & Co. 1893.

These lectures, delivered at the academy and laboratory of medical sciences at Cataluña, and reprinted from the "Revista de Ciencias Medicas de Barcelona," contain a summing up of the latest researches into the fine anatomy of the nervous system. No one could better set forth the results obtained by the use of Golgi's methods of staining than the man who has been the chief pupil of Golgi in carrying on research by his methods. These lectures give the results thus far obtained, not only by Golgi and the author, but by other observers on the Continent. It is needless to say that the methods of staining first introduced by Golgi, and employed with such success by the author, have revealed to us new wonders in the marvellous structure of the nervous system. The physiological bearings of these new discoveries are as yet unknown, and their pathological relations have not yet been investigated, but they open wide fields for research. They have shown that each nerve-cell sends out many protoplasmic branches dividing into a fine net-work, and that the axis-cylinders give out various collateral branches, entablishing, through numerous reticulations, the most complex relations with other parts of the nervous system.

In the very brief space allotted to this review, the details of these researches, so clearly set forth, cannot be given. The author's work, however, cannot be slighted by any one who is interested in the anatomy of the nervous system, and we trust that it may be translated into a language more familiar to the scientific world than Spanish now seems to be.

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REGISTRATION OF THE STILL-BORN.

IN the last number of the JOURNAL it was shown that serious defects in the system of registration of the causes of death had led to a Parliamentary inquiry and report upon the subject. A considerable portion of this class of deaths consists of still-born children.

Dr. Rentoul, of Liverpool, devoted a paper to this subject, at the meeting of the British Medical Association August 2, 1893. He states that while the laws of nearly every other country of Europe require careful registration of the still-born, at the time of their burial, the law upon this subject in England and in Russia is very loose. By correspondence, Dr. Rentoul learned that 6,321 such burials had been made in 71 cemeteries. This led to a Parliamentary investigation which resulted in returning the facts as to 17,335 interments of still-born children in England of which number 4,569 were buried without a medical certificate as to the cause or manner of death. It would have been a useful addition to this information if the facts as to legitimacy could have been obtained, but owing to the defective methods of registration, this point could not be learned.

A writer in the *British and Foreign Medical Review*, estimates from a very large number of births from different sources that the proportion of still-births to legitimate births is as 1 to 18 or 20 (in Massachusetts it was as 1 to 27 in 1890) while among the illegitimate births it is as 1 to 10. These estimates were made from a total of 8,000,000 births. Dr. Bertillon states that in Paris the chance of an illegitimate child being still-born, when compared with the legitimate, is as 193 to 100.

Coroner Hicks, of London, says: "Many children who are termed still-born are not really so, but have been born alive and died soon after, sometimes from natural causes, but also from suffocation, and other illegal means. In fact it is to be feared that many children *termed* still-born are disposed of in other ways."

Dr. Tidy says, in his "Legal Medicine": "So notorious is it that a large number of these cases could be averted, that some legislation is urgently needed."

A regular funeral for an infant costs two to three pounds (ten to fifteen dollars), while a still-born child can be buried for a shilling and six pence. Hence the inducement to register the deaths of infants born alive as still-births. One of the principal causes of criminal still-birth is illegitimacy.

The following figures show the number of illegitimate births registered, exclusive of still-births.

	Year.	Populat'n.	Total births.	Illegitimate births.	Ratio to total births per 1,000.
England	1889	29,015,413	885,944	40,627	45.9
Scotland	1891	4,033,180	125,965	9,537	75.7
Ireland	1890	4,688,426	105,254	2,827	26.9
Massachusetts . .	1890	2,238,943	57,777	1,206	20.9

As a remedy for this evil, Dr. Rentoul proposed the inspection of all still-born children by a medical practitioner before their burial. In England any body can be buried, even though there has been no medical certificate of the cause of death, or even though the death has not been registered. "A truly delightful paradise for criminals!"

Dr. Rentoul says further: "The time is surely ripe for a public protest against the gross indifference of women of all classes as shown to the infant in the womb. The present state of affairs is a public scandal. A class of political economists may say that the human animal is a glut in the market, and so, not having the money value of a pig, calf or sheep, it may be placed on that little list, from which, they hope, it never may be missed. On the other hand, our words and actions must be made to give a strong color to public thought, to instil the knowledge, that from the moment of conception there is life; that this life has a right to claim our protection; and that it is one of our first duties to bring about registration and inspection of still-born children. And if we can induce our law-makers to extend further official recognition to the child in the womb, then we, as medical practitioners, possessing the power of harmonizing law with medical science, will be able to say that we have not altogether failed in our duty in dealing with this important question."

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JAUNDICE FROM MENTAL EMOTION.

THE existence of jaundice from mental perturbation was recognized by the older pathologists. Budd, in 1844, referred it to arrest of the secretion and retention of the bile in the blood.

The theory of arrested secretion was abandoned when more correct notions of the physiology of the bile were acquired, and subsequently jaundice by nervous influence was ascribed to spasm of the bile-ducts;

this, it was affirmed, might produce complete obstruction to the passage of the bile and consequent reabsorption. Frerichs, later on, recognized the occasional occurrence of this form of jaundice which may appear very suddenly or in the course of a few hours after a violent mental emotion, as vexation, anger, fright, and he thinks that it may come about in two ways:

(1) By interruptions to the circulation of the blood through the liver, arising from the influence exerted by the nerves over the calibre of the branches of the portal vein.

(2) By interruptions to the heart's action, the respiratory movements, and the renal secretion.

Talamon, in a recent number of the *Médicine Moderne* (August 23, 1893), takes up the subject in connection with a remarkable case which had lately come under his observation where a healthy woman, aged twenty-four years, having had a severe fright, became intensely jaundiced after five hours. The icterus lasted twenty-four days.

Talamon, in discussing the pathogeny of emotional jaundice, thinks that there are two objections to the current notion that it is due to spasm of the bile-ducts: (1) the suddenness of its production; and (2) its persistence.

With regard to the suddenness, there are cases on record where the jaundice has come on almost instantaneously. Villermé mentions a case where two young persons quarrelled and drew their swords; one of them suddenly became yellow, and the other, terrified at the change of color, dropped his weapon. The same writer relates another case of an abbé who suddenly became yellow on a mad dog rushing against him. Although statements of this nature may appear doubtful, still there are numerous observations which prove that under such circumstances as those alluded to, jaundice may be developed in a much shorter space of time than is wont to happen after the application of a ligature to the common bile-duct.[1] The experiments of Tiedmann and Gmelin show that bile pigment does not appear in the urine till forty-eight hours after the ligation of the choledochus; those of Audigé, that resorption of bile is not effected under thirty-six hours.

As to the persistence, it does not seem likely that a spasm of the bile-ducts can continue eight, ten, fifteen days without relaxation. In Talamon's patient the urine was loaded with bile pigment on the fifteenth day.

The theory of polycholia (Grisolle) does not alone explain the jaundice that follows mental perturbation, for the resorption is still to be accounted for.

Talamon thinks that the principal element in the pathogeny of this form of jaundice is the disturbance through nervous shock of the hepatic cell whose secretory function is augmented while at the same time it loses its property of retaining the bile which is formed, whence the immediate diffusion in the blood of the excess of bile secreted. This is, in fact, Liebermeister's explanation, who calls this emotional icterus a *cathectic* jaundice. In the normal state, he says, the liver cells retain in their protoplasm the formed bile, a property which they lose in certain morbid conditions, leaving their product of secretion to diffuse itself through the blood as lymph. There is at the same time augmentation of the absorbent surface by reason of sudden paralytic dilatation of the hepatic capillaries. This, however, only in part explains the retention of the bile, and here Talamon assumes the existence of disordered contractions of the bile-ducts extending to the choledochus. This only partially interrupts the passage of bile into the intestine, for the spasm is not continuous, and there are periods when the bile passes freely, as when the stools are deeply colored. In the case which he reports, this fact is strikingly apparent in the clinical record; the stools were clay-colored one day, and bilious the next, etc.

This is in accordance with the observations of Labadie-Lagrave, who has recently published a very complete treatise on "Diseases of the Liver." This kind of jaundice is clearly differentiated from most of the other varieties by the fact that the stools are not invariably and continuously decolorized. In a recent case of emotional icterus observed by Chauffard, the patient, after intense excitement, became jaundiced in the space of an hour; during the first five days, the choledochus remained permeable and the stools were colored and soft: the decolorization did not appear till subsequently. Labadie-Lagrave rejects the theory of spasm for these reasons, and also because histological investigation proves that the bile-ducts are very poorly provided with unstriped muscular fibres; faradization cannot efface the calibre of these ducts through their muscular fibres. He believes, with Chauffard, that if in this kind of jaundice there is any obstruction of the choledochus, this results from thickening of the bile, or from epithelial desquamation, as in simple catarrhal jaundice.

It must be admitted that the mechanism of emotional icterus is not yet completely elucidated.

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SALINES IN APPENDICITIS.

We wish to call attention to the letter from Dr. M. H. Richardson, which is printed on another page. The question of the use of saline cathartics in peritonitis has often been discussed in papers and the reports of societies in the Journal, but it is only for a short time that the importance of the appendix as the common cause of what is still often called idiopathic peritonitis has been appreciated. The diagnosis and treatment of appendicitis is still in its infancy and discussion from men who have seen much of the disease is desirable. The treatment of mild cases of colic or local tenderness, which now for the first time are recognized as pointing to the appendix, is a matter of importance to every practising physician. The number of such cases is very large, most of them recover speedily if left alone, or go to confirm the belief of the medical attendant in his common method of treating them. But any of these cases may result in perforation. Whether the free use of salines will diminish or increase this risk will probably not be soon conclusively settled, but with a perforation existing, increased peristalsis, and fluidity of the intestinal contents can hardly fail to increase the extravasation into the peritoneal cavity, and fatal peritonitis. Dr. Richardson believes that in catarrhal appendicitis there is no hurry to produce catharsis. This might be combatted by those who believe that the presence of a fæcal accumulation favors perforation, and proof from them that this danger is greater than that arising from cathartics, should be brought forward more clearly than it has been in the past. The uselessness of treating general peritonitis by salines while a direct communication exists between the intestinal tract and the peritoneal cavity hardly admits of argument.

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[1] Frerichs: Diseases of the Liver, Am. Ed., vol. i, p. 112.

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MEDICAL NOTES.

PROGRESS OF CREMATION. — There are in this country already thirty-two active cremation societies and fifteen crematories. In the last five years there have been over two thousand incinerations.

IMMIGRATION VIA CANADA. — As a result of Canada's refusal to allow official immigration inspection at her ports by our Government, a conference was held last week between the United States Government and the various Canadian steamship and railroad companies regarding the most efficient means of quarantine inspection of immigrants entering this country by Canadian ports. The result was an agreement by which the various companies are to provide the immigration inspectors of the United States with facilities for a rapid inspection of immigrants at the ports of landing before they are sent to their trains. Proper passengers will be given certificates entitling them to enter this country. This being a private arrangement will be allowed by the tacit consent of the Canadian authorities.

YELLOW FEVER. — On September 13th, three cases of yellow fever were discovered at Brunswick, Ga., which had not been duly reported. Examination showed that two fatal cases had already occurred in different parts of the city, but had been returned as "consumption." Two of the cases were returned refugees. A quarantine camp was at once established. On the 16th two new cases occurred, and on the 17th eleven more, and the fever was officially declared to be epidemic. On the 18th there were twenty cases and one death. Since then there have been but a few new cases each day. The usual shot-gun quarantine has been established and the greatest suffering among the inhabitants has resulted. The actual necessities of life in the way of food and clothing have been exhausted, and all communication with surrounding districts for the purpose of procuring supplies is prohibited, so that at present the people are in greater distress for want of food than from the yellow fever.

A NEW ILLUSTRATED DICTIONARY OF MEDICINE. — Dr. George M. Gould has about ready the new medical dictionary upon which he has been at work for several years. It is a new book in every way and not a revision of his older one, and in it he has adopted the new method of spelling medical and scientific words.

RECOVERY OF DAMAGES FOR MENTAL SUFFERING. — The supreme court of North Dakota has ruled that mental suffering is as properly considered in estimating damages as is physical pain. The impairment of mental powers, naturally a proper element when proved, is only to be considered by the jury when claimed in the suit and evidence.

NEW YORK.

SMALL-POX. — A considerable number of cases of small-pox have developed during the last ten days, and several deaths have occurred from it. Among those suffering from the disease are two physicians, Drs. Thomas L. Richards and Charles Norris, who are said to have contracted it from a patient at the Vanderbilt Clinic who was at first supposed to have chicken-pox. At the Clinic the case was examined by quite a number of students and young physicians. On September 21st there were thirty-two cases of small-pox under treatment at the hospital for contagious diseases, and the vaccinating corps of the Board of Health are carrying on an energetic campaign in all the tenement-house districts of the city.

ANOTHER BROKEN NECK. — A third case within three months of a patient living with a fracture of the cervical vertebræ has been reported. The patient is under treatment at the Manhattan Hospital, and more than a week has elapsed since he broke his neck in a fall of ten feet. The other two patients, whose cases have already been referred to in the JOURNAL are still both alive, and one of them has already been discharged from hospital, although still wearing an apparatus to relieve the injured vertebra of the weight of the head.

ELECTRIC CAR ACCIDENTS. — On a single day recently, September 17th, no less than three children were crushed to death by electric cars, one in New York, one in Brooklyn, and one in the neighboring city of Newark, New Jersey. On the 21st another child was killed in the same way in Brooklyn, where accidents of this kind are extremely frequent, and on the 22d the fifth death was caused by the new cable cars on Broadway, New York.

RECENT BEQUESTS. — By the will of the late Hamilton Fisk, Secretary of State during Gen. Grant's administration, $50,000 is left to Columbia College, $5,000 to St. Luke's Hospital, and $2,000 to the Bellevue Training School for Nurses.

MORTALITY. — The general health of the city still continues remarkably good, and in the week ending September 16th the lowest mortality thus far during the year 1893 was recorded. The number of deaths was only 697, which is 61 less than during the previous week, and also 61 less than in the corresponding week of last year. This mortality is 64 less than the average of the corresponding weeks of the past five years, and represents an annual death-rate of but 19.09 per thousand of the estimated population of the city. The largest decrease was in deaths from diarrhœal diseases, which numbered 83 against 138 during the previous week. Of deaths from this cause in children under five years of age there were 70, against 118 in the previous week.

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Miscellany.

A PECULIAR CAUSE FOR URETHRAL HÆMORRHAGE.

A curious case of rupture of the urethra is reported by Herrick in an article on that subject in a recent number of the *Medical News*. The patient, a man of forty, accidentally swallowed an artificial tooth-plate. He was given proper diet and kept quiet for four days, when he was attacked with severe urethral hæmorrhage. On examing his rectum, the tooth-plate was found and with a little difficulty removed. The hæmorrhage from the urethra continued but no blood escaped from or into the rectum. Neither did any find its way into the bladder, as the urine passed after the first instant was clear. The introduction of a large soft catheter controlled the bleeding. There was no extravasation and the catheter was left in place for forty-eight hours. Once in the interval it was expelled by the patient, with a return of the hæmorrhage which was stopped by reintroduction of the catheter. The tooth-plate probably had punctured the urethra by one of its projecting points, making a valve-like slit, which prevented the blood from passing toward the rectum, and also preserved the parts from extravasation.

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THE EYE SYMPTOMS OF CEREBRO-SPINAL MENINGITIS.

The involvement of the eye in cerebro-spinal meningitis has been long recognized, especially the conjunctival inflammation and the photophobia. Intraocular disease — choroiditis, suppurative cystitis and iritis — has been observed and reported more especially by German writers. A systematic examination of the fundus of the eyes has been but seldom carried out, however; the external conditions having alone been studied. In view of the close connection between the arachnoid space of the brain and cord, and the deeper structures of the eye along the intervaginal space, Randolph urges a systematic examination of the fundus, which he says will often reveal changes of deep significance in the choroid retina or optic nerve, though the patient has been unconscious of any eye symptoms. He reports the study of thirty-five cases of cerebro-spinal meningitis[1] of whom twenty died. Of the thirty-five cases, only seven showed a normal fundus; and of these seven one had divergent strabismus and dilated pupils, one marked nystagmus, and a third dilated pupils. There was one case of retinitis which was associated with thrombosis of the central vein. There was strabismus in eight cases, always of the right eye and divergent. Indeed the right eye showed abnormal conditions of all kinds oftener than the left. "Optic neuritis occurred in six cases, and the other nineteen cases were characterized, as regards the fundus of the eye, especially by great venous engorgement and tortuosity and more or less congestion of the optic disc." He considers the cases of neuritis to be of the descending variety involving the entire trunk of the nerve and its sheaths, and the numerous cases of congestion of the optic disk as possibly beginning stages of optic neuritis. The treatment of the consecutive atrophy was as unsatisfactory as in atrophy from other causes.

Of the value and importance of this examination in all cases, he says: "I regard the existence of eye symptoms, especially those where the fundus is involved, as indicating a particularly grave case. Wherever I found the condition which I have described very pronounced, I felt justified in speaking positively as regards the prognosis. I think that this type of eye symptoms is of more value as indicating the condition of the brain than the symptoms described by other writers, such as panophthalmitis, suppurative choroiditis and keratitis, affections which, in my opinion, would be likely to have their origin in a general infection and not likely to be the direct result of the purely cerebral changes."

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CHARAKA-SAMHITA.

The sixth part of this curious and interesting work contains a lesson upon emergencies which may arise in the administration of emetics and purgatives. As there are many things necessary for achieving success in giving dangerous remedies certain arrangements of the house and servants are advisable. These directions imply nothing less than the equipment of a hospital and are worth recording, as showing an early recognition of the importance of special hospital construction.

"In the first place a mansion must be constructed under the supervision of an engineer well conversant with the science of building houses. It should be spacious and roomy. The element of strength should not be wanting in it. Every part should not be exposed to strong winds. One portion, at least, should be open to currents of air. It should be such that one may move through it with ease. It should not be exposed to smoke, or the sun, or dust, or injurious sound and touch and taste and form and scent. It should be furnished with staircases, with pestles and mortars, privies and cook-rooms.

"After this should be secured a body of attendants of good behavior, distinguished for purity and cleanliness of habits, possessed of cleverness and skill, endued with kindness, skilled in every kind of service that a patient may require, competent to cook food and curries, clever in bathing or washing a patient, in rubbing or pressing the limbs, well skilled in making and cleaning beds, competent to pound drugs, patient and skilful in waiting upon one that is ailing and never unwilling to do any act they may be commanded to do. A number of men should be secured that are skilled in vocal and instrumental music, in hymning encomiums and eulogies, and in reciting verses and pleasant narratives and stories and legendary histories, clever in reading the face and understanding what is wanted by the patient and possessed of such politeness as to become agreeable companions.

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[1] Bulletin of the Johns Hopkins Hospital, August, [illegible]

"The mansion should be stored with an adequate supply of game of all kinds. A cow should be kept, yielding copious milk, of a quiet disposition, healthy, well tended with food and drink and *kept in a fold that is properly cleaned.*

"So also should be kept little vessels and cups, larger vessels for washing the hands and face, water-jars, small jars, dishes, cauldrons, pans, hollow vessels for covering articles, ladles, mats, covers, vessels for boiling oils and glue, churning rods, beds and seats, flat vessels for holding spittle and evacuations, placed ready for use; good beds placed upon bedsteads and overlaid with white sheets and containing pillows. Articles necessary for the operations, plaster, fomentations, rubbing, vomiting, purging, application of oily or other enemata, etc. Smoking-tubes, brushes, brooms, balances and weights, oil, fat, marrow, honey, salt, fuel, water, sour gruels, whey, buttermilk, sour gruel of rice and the different varieties of animal urine should also be kept ready. . . . Having kept these articles ready for use the patient should be treated as the case may demand."

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THE PROTEID POISON OF SCARLET FEVER.

Mr. T. J. Bokenham and Mr. W. Soltau Fenwick publish, in the *British Medical Journal* for August 19th, a paper detailing their research on the pathological effects of certain substances derived from the spleen in cases of scarlatina. Their experiments were undertaken to find, if possible, some definite chemical poison in the organs of patients dying of scarlatina, which would give additional evidence as to the bacterial origin of the disease.

The spleens of fifteen patients were subjected to examination, with results of quite uniform character. From all cases there was obtained a proteid matter which may be classed among the proteoses, and is quite indistinguishable chemically from the proteoses formed during the process of digestion.

The injection experiments were upon rats, guinea-pigs, mice and rabbits. The actual injection seldom caused any local disturbance. The constitutional effects varied according to the nature of the case from which the material was derived, but each preparation exhibited a uniform action in the various animals used. The proteid was highly poisonous when extracted from an acute case which had proved fatal during the first few days with symptoms of toxæmia. If taken from the ordinary septic cases of a fortnight's duration, associated with throat suppuration, the proteid was less poisonous and uncertain in its action. When the solution of the albuminous extract from a case of scarlatina fatal in one to five days was introduced under the skin of a rat in the proportion of 0.1 gramme per kilo. of its body weight, no abnormal symptoms manifested themselves for a period of twenty-five to thirty minutes.

At the end of that time, the respirations became increased in frequency, and the animal's gait became tottering and extremely unsteady. Within a short time paresis of the hind limbs set in, the body being dragged along in an irregular and zigzag fashion by the sole action of the forelegs. With the development of this paresis the respiration became markedly slow and labored in character, the accessory muscles of the nose and mouth being called into requisition. Within half an hour from the onset of the symptoms the animal passed into a state of profound collapse. The heart's impulse was weak and its action quick, and the surface of the body was cold to the touch. After a varying period of time, gradual recovery took place.

The immediate temperature reaction varied, rats and guinea-pigs showing a brief period of subnormal temperature, rabbits a corresponding short pyrexia, with a return to normal in each case within eight or ten hours. During the few days immediately following the animals appeared to suffer no particular inconvenience, and the temperature remained at its normal level. About the seventh or eighth day, however, the appetite began to fail, the temperature rose slightly, and the body lost in weight. With only one exception (rabbit) death ensued within the fortnight, the rats exhibiting a uniform tendency to succumb about the tenth or eleventh day. The earliest period at which death occurred was the fifth day. When two injections were given on consecutive days the animal died on the fifth or sixth, and after three doses on the third or fourth. In every case where it was possible to obtain a specimen of urine the presence of albumen was easily demonstrated, and in some instances epithelial and granular casts were also found.

Post-mortem examination of the kidneys showed acute parenchymatous nephritis, with very slight interstitial changes.

The proteid obtained from the second class of cases caused much less disturbance and in no case death. In a majority of cases the kidneys showed some congestion and a granular condition of the cortex.

In order to control to some extent the foregoing experiments, two spleens derived from cases which had died from an accident were subjected to the same process, and the albuminous extract administered to animals. The material in question gave rise to no pathological effects. In like manner peptic albumoses, when injected into the circulation, never produced an inflammation of the kidney similar to that previously described.

They conclude, therefore, that in cases of rapidly fatal scarlatina a morbid product of a proteid nature is formed that can be extracted from the spleen in small quantities. This substance, when introduced into the circulation of an animal, is rapidly excreted by the kidneys, and acting as an irritant to the secreting structure, tends to produce a condition of acute parenchymatous inflammation.

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THOMAS HEAZLE PARKE.

The sudden death of Surgeon-Major Parke, which occurred September 10th, has closed the career of a man of unusual strength and gentleness of character. Few men have accomplished such arduous and varied service or acquired at so early an age such world-wide and deserved reputation.

He entered the Army Medical Department in 1880 after becoming a Licentiate of the Royal Colleges of Physicians and of Surgeons in Ireland. His first active service in the Egyptian War of 1882 gained him a medal and the Khedive's star. He served on the Nile Expedition in 1884–5, and won two distinctions for the gallantry of his work.

In 1887 he was selected by Mr. H. M. Stanley to accompany him in his expedition for the relief of Emin Pasha. The splendid character of his services during this expedition was fully recognized by Mr. Stanley, who often refers to Parke's services, and describes him as patient, cheerful and gentle. In speaking of the events at Kavalli in March, 1888, he wrote: "This expedition possesses the rarest doctor in the world. No country in Europe can produce his equal, in my opinion. There may be many more learned, perhaps more skilful, older or younger as the case may be, but the best of them have something to learn from our doctor. He is such a combination of sweetness and simplicity. So unostentatious, so genuinely unobtrusive. We are all bound to him with cords of love. We have seen him do so much out of pure love for his 'cases' that human nature becomes ennobled by this gem. He is tenderness itself. He has saved many lives by his devoted nursing on the green sward of Kavalli, daily administering to these suffering blacks, unknowing and unheeding whether any regarded him." The unanimous testimony of every one connected with the expedition was that the great untiring cheerfulness of Surgeon Parke went far to relieve the dreary discouragements of the search for Emin. His very presence, quiet and unostentatious as it was, gave strength to the expedition.

On his return he received the full honor due him at the hands of the general public and his friends. He was given the medals of the British Medical Association, the Royal Geographical Societies of London and of Antwerp, and was made a Fellow of the Royal Geographical Society, a Fellow of the Royal College of Surgeons in Ireland, and an Honorary Member of the Geographical Societies of Belgium and Antwerp, and of the Order of St. John of Jerusalem. The British Government alone maintained a brutal inattention to his services. His work, to be sure, was not done at the bidding of the State or for the direct gain and interest of the Government; but other officers received special honors and promotions, while Parke received no thanks, no honors, no promotion from the Government, but remained a surgeon-captain until the termination of twelve years' full pay service; the only consideration shown him being that he was allowed to count his time in Africa with Stanley as full pay service. Although this was on a par with the usual contempt shown the medical profession in English military and army management, the slight was so studied and marked that Parke felt it most keenly. Too modest to desire honors for their own sake, the absence of any recognition or acknowledgment at such a time weighed upon his spirits, till he felt it almost as a degradation.

A more lasting tribute than any army honor could have been will remain for Parke, in the words of Stanley, written during the expedition, "His devotion was as perfect as human nature is capable of rendering."

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Correspondence.

THE USE OF SALINES IN APPENDICITIS.

BOSTON, September 23, 1893.

MR. EDITOR: — I wish to say a word against the use of saline or other cathartics in the early stages of appendicitis, because you have recently published articles on appendicitis in which the use of cathartics, especially salines, has been advocated.

The theoretical action of cathartics in peritonitis, as given by various men, consists in an absorption and removal by intestinal drainage of the toxic products of certain micro-organisms which, multiplying in or near the peritoneal cavity, endanger life. I do not object to carrying out this theory after the appendix has been securely tied, or after it is clear that there is no danger of rapid extravasation; but in the first forty-eight hours of appendicitis I look upon the administration of salines as extremely dangerous, and as a not infrequent cause of general peritonitis and death. The reasons for this lie in the pathological conditions that exist in a very considerable percentage of cases. If in a given case there is a perforation in an appendix of large lumen, salines, by liquefying the fæces and [illegible] *extravasation*. In such a pathological condition, which is not infrequent, the use of cathartics before removal and ligation of the appendix must be and is attended by most fatal consequences.

There is the same objection to the use of salines in gunshot wounds of the intestines, in perforations of typhoid fever, or in perforating ulcers of the intestinal tract generally.

In catarrhal appendicitis, without perforation — the mildest of diseases — there is no hurry to produce catharsis; should the perforation suddenly occur, by keeping the bowels quiet you avoid the danger of rapid extravasations, and give the surgeon a chance to remove the appendix before a general peritonitis makes the outlook hopeless. In a localized peritonitis, if no surgical interference has been made, the recent adhesions may be ruptured by fresh extravasations forced along by a stimulated peristaltic *vis-a-tergo*, and a general peritonitis quickly develop.

These objections to the administration of salines are based upon a very considerable experience. I may say that a majority of the fatal cases of appendicitis have been attended by extensive fæcal extravasations. I do not mean to assert that these extravasations have been caused in every instance by the administration of saline cathartics; but I do mean to state most unequivocally that they have been so caused in many cases, and that, furthermore, the existing conditions of general spreading peritonitis, far from being curable by salines, are, in my opinion and experience, beyond relief even by the most radical surgical measures, except in very rare instances. Moreover, in these extraordinary cases where, in a fully established peritonitis, recovery, with or without operation, takes place, I believe we shall find that only comparatively innocuous micro-organisms are present; on the other hand, the explanation of certain fulminating cases, even if apparently trivial at the outset, lies in the presence and rapid reproduction of germ colonies of great vitality and virulence. In either case, I am convinced, the action of saline cathartics has very little to do with the result; except in certain instances, for the reasons above given, to hasten the fatal end.

If the appendix has been tied off, or if the peritoneal cavity has been walled off with gauze, or if there is a firmly localized peritonitis, I do not object to cathartics, and I use the salines freely. I must say, however, that in a completely established general peritonitis, from whatever cause, with distention, vomiting and obstipation, in my experience, salines accomplish absolutely nothing.

To produce "intestinal drainage" after abdominal operations I think salines most excellent; and they have their use in the very beginning of a peritonitis in which there is no question of extravasation. I believe the future use of salines will be confined to these conditions.

Yours very truly, M. H. RICHARDSON.

METEOROLOGICAL RECORD,

For the week ending September 16, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r.* 8.00 A.M.	We'th'r.* 8.00 P.M.	Rainfall in inches.
S..10	[illegible]	64	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	N.E.	[illegible]	[illegible]	F.	C.	
M..11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	S.	[illegible]	[illegible]	C.	C.	
T..12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	S.W.	7	15	C.	C.	
W..13	[illegible]	[illegible]	75	[illegible]	[illegible]	[illegible]	[illegible]	W.	S.W.	[illegible]	[illegible]	C.	C.	
T..14	30.23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	S.	[illegible]	[illegible]	T.	O.	
F..15	[illegible]	[illegible]	77	[illegible]	[illegible]	[illegible]	[illegible]	S.	S.	11	[illegible]	O.	O.	0.02
S..16	29.71	[illegible]	[illegible]	55	[illegible]	[illegible]	90	S.	S.W.	14	9	O.	C.	[illegible]
[illegible]														0.56

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 16, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrheal Diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,891,306	697	296	21.00	11.62	11.20	1.82	4.76
Chicago . . .	1,438,000	545	260	26.46	7.20	16.74	2.34	3.60
Philadelphia .	1,115,562	364	143	17.36	14.84	5.60	4.76	3.92
Brooklyn . .	978,394	406	192	29.50	10.75	15.00	2.00	2.75
St. Louis . . .	500,000	—	—	—	—	—	—	—
Boston . . .	487,397	242	124	20.50	12.30	15.58	.41	2.05
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	100	44	21.00	14.00	8.00	6.00	4.00
Cincinnati . .	305,000	95	44	12.60	7.35	6.30	2.10	3.15
Cleveland . .	290,000	88	45	28.50	10.26	12.54	6.84	2.28
Pittsburg . .	263,709	114	50	36.08	2.64	18.48	8.80	3.52
Milwaukee . .	250,000	93	57	25.92	6.48	17.28	2.16	3.24
Nashville . .	87,754	23	4	8.70	30.45		4.35	—
Charleston . .	65,165	37	11	21.60	16.20	21.60	—	—
Portland . . .	40,000	12	2	25.69	16.66	8.33	8.33	8.33
Worcester . .	96,217	32	20	43.82	3.13	34.43	3.13	—
Fall River . .	87,411	35	19	42.90	5.72	40.04	—	—
Lowell . . .	87,191	38	20	36.82	18.41	31.56	—	2.63
Cambridge . .	77,100	28	14	35.70	3.57	17.85	—	10.71
Lynn	62,656	11	6	45.45	—	27.27	9.09	—
Springfield . .	48,684	14	6	28.56	—	28.56	—	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	45,886	26	14	34.65	11.55	26.15	7.70	—
Holyoke . . .	41,278	14	9	50.00	7.14	50.00	—	—
Salem	32,233	15	4	40.00	6.66	13.33	26.66	—
Brockton . .	32,140	9	2	—	—	—	—	—
Haverhill . .	31,396	12	2	—	—	—	—	—
Chelsea . . .	30,264	9	4	—	11.11	—	—	—
Malden . . .	29,394	4	2	25.00	25.00	25.00	—	—
Newton . . .	27,556	—	—	—	—	—	—	—
Fitchburg . .	27,146	10	5	30.00	—	30.00	—	—
Taunton . . .	26,972	8	6	37.50	—	37.50	—	—
Gloucester . .	26,688	10	5	20.00	10.00	20.00	—	—
Waltham . .	22,058	8	5	25.00	12.50	12.50	—	—
Quincy . . .	19,642	6	3	16.66	33.33	16.66	—	—
Pittsfield . .	18,802	3	1	16.66	33.33	16.66	—	—
Everett . . .	16,585	2	1	50.00	—	50.00	—	—
Northampton .	16,331	4	1	50.00	—	25.00	—	25.00
Newburyport .	14,073	7	2	—	—	—	—	—
Amesbury . .	10,920	2	1	50.00	—	50.50	—	—

Deaths reported 3,153: under five years of age 1,435; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 782, diarrhœal diseases 453, consumption 309, acute lung diseases 216, diphtheria and croup 107, typhoid fever 88, whooping-cough 32, cerebro-spinal meningitis 23, malarial fever 11, measles 8, small-pox 3.

From whooping-cough New York 6, Chicago, Philadelphia and Brooklyn 5 each, Pittsburg 4, Boston 2, Washington, Cleveland, Fall River, Lynn and Waltham 1 each. From cerebro-spinal meningitis Chicago 9, Brooklyn 4, New York and Cleveland 3 each, Worcester 2, Washington, Milwaukee and Somerville 1 each. From malarial fever Brooklyn 7, Philadelphia 2, New York and Nashville 1 each. From measles New York 4, Chicago 3, Boston 1. From small-pox New York 3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending September 9th, the death-rate was 20.1. Deaths reported 3,980; diarrhœa 564, whooping-cough 96, diphtheria 86, scarlet fever 65, fever 62, measles 93, small-pox (West Ham and Bradford 2 each) 4.

The death-rates ranged from 13.0 in Halifax to 30.2 in Hull; Birmingham 17.3, Bradford 23.3, Croydon 14.4, Leeds 22.8, Leicester 18.1, Liverpool 23.1, London 18.9, Manchester 23.5, Newcastle-on-Tyne 21.7, Nottingham 17.5, Portsmouth 15.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 16, 1893, TO SEPTEMBER 22, 1893.

CAPTAIN CURTIS E. PRICE, assistant surgeon, relieved from duty at Fort Wadsworth, New York, and ordered to report to the commanding officer, Fort Porter, New York, for temporary duty at that post.

CAPTAIN WM. C. SHANNON, assistant surgeon, is relieved from duty in the office of the Surgeon-general of the Army and as assistant to the attending surgeon in Washington, and will proceed to New York City and report in person to the commanding general, Department of the East, for duty as attending surgeon and examiner of recruits in that city, relieving **CAPTAIN GUY F. EDIE**, assistant surgeon.

CAPTAIN GUY F. EDIE, assistant surgeon, upon being relieved from duty in New York City, by **CAPTAIN WILLIAM C. SHANNON**, assistant surgeon, will proceed to Washington, D. C., and report in person to the attending surgeon for duty in his office.

CAPTAIN WM. G. SPENCER, assistant surgeon, is granted six months' extension to sick leave of absence granted in Special Orders, No. 108, A. G. O., May 13, 1893.

CAPTAIN H. S. T. HARRIS, assistant surgeon, U. S. A., is relieved from duty at Fort Keogh, Montana, and assigned to duty at Fort Preble, Maine.

CAPTAIN M. W. WOOD, assistant surgeon, U. S. A., is relieved from duty at Fort Preble, Maine, and assigned to duty in Boston, Mass., as attending surgeon and examiner of recruits.

CAPTAIN FRANCIS J. IVES, assistant surgeon, ordered to proceed from Fort Sheridan, Illinois, to Chicago, Ill., and report to **CAPTAIN LOUIS A. LAGARDE**, assistant surgeon, in charge of the Medical Section of the War Department exhibit, World's Columbian Exposition, for temporary duty.

CAPTAIN LOUIS BRECHEMIN, assistant surgeon, is granted twenty-three days' leave, to take effect about September 17, 1893.

MAJOR HENRY MCELDERRY, surgeon, U. S. A., is granted leave of absence for one month, to take effect about October 1, 1893.

SOCIETY NOTICES.

NEW YORK STATE MEDICAL ASSOCIATION.—The tenth annual meeting will be held Monday, Tuesday, Wednesday and Thursday, October 9, 10, 11 and 12, 1893, at the Mott Memorial Hall, 64 Madison Avenue near 27th Street, New York City.

CHARLES E. DENNISON, *Secretary*.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The next meeting will be in connection with the International Congress of Public Health, at the Art Institute Building, Chicago, Ill., October 9–14, 1893. First meeting of the Congress, October 9th, at 8 o'clock, P. M.

President of the Congress, Dr. Samuel H. Durgin, President of the American Public Health Association. Sir George Buchanan has promised to accept the position of Honorary President for Great Britain, and Sir Charles Cameron has accepted the Presidency of the Section on Municipal Health Service.

IRVING A. WATSON, *Secretary, American Pub. Health Ass'n.*

VERMONT STATE MEDICAL SOCIETY.—The eightieth annual meeting will be held in Rutland, October 12 and 13, 1893.

C. S. CAVERLY, M.D.,
G. H. FOX, M.D.,
E. M. POND, M.D.,
Committee of Arrangements.

RECENT DEATHS.

WALTER VOUGHT, M.D., died in New York, September 25th, aged thirty-one years. He was in charge of the Fire Island Quarantine Station during the cholera quarantine last year.

HORATIO NELSON PAGE, M.D., M.M.S.S., died in Milwaukee, Wis., September 16th, aged eighty-seven years. He graduated from the Dartmouth Medical School in 1831.

WILLIAM B. TOWLES, M.D., died in Charlotte, Va., September 18th, aged fifty-three years. He was professor of anatomy in the University of Virginia.

SURGEON-MAJOR THOMAS HEAZLE PARKE, who was chief medical officer under Stanley in the search for Emin Pasha, died at Alt-na-Craig, Scotland, September 10th, aged thirty-six years.

SEVERIN WIELOBYCKI, M.D., died in St. John's Wood, London, September 7th, aged one hundred years and eight months. He was born in Poland and served as a cavalry officer in the long struggle for national freedom. He was offered an escape to Great Britain and went to Edinburgh, where, after great privation, he succeeded in obtaining his medical degree. Probably the only occasion when a University has officially congratulated a graduate on finishing a century of life was that of Wielobycki's birthday last January.

BOOKS AND PAMPHLETS RECEIVED.

Address before the Harvard Medical Alumni Association, June 27, 1893. By J. M. DaCosta, M.D., LL.D. Boston: Geo. H. Ellis. 1893.

A Lecture by Victoria Claflin Woodhull (Mrs. John Biddulph Martin), in the Boston Theatre, Boston, U. S. A., October 22, 1876, before 3,000 people, The Review of a Century; or, the Fruit of Five Thousand Years. Reprint. 1893.

Address.

PULMONARY TUBERCULOSIS WITH ESPECIAL REFERENCE TO ITS PROPHYLAXIS, HYGIENIC AND CLIMATIC TREATMENT.[1]

BY EDWARD O. OTIS, M.D., BOSTON.

“A [illegible] helped by thee, shall make thee strong.” [illegible]

Fellows of the New Hampshire Medical Society: Do not think that I hold in light esteem the honor you have done me in inviting me to speak to you to-day, because I have chosen the old, and perhaps to many of you, uninteresting subject of Pulmonary Tuberculosis. I have chosen it with deliberation and for several reasons. As you are only too well aware, it is one of the most frequent diseases you have to contend with in this climate. Refer to the report of the State Board of Health for 1891, and you will find that of all the deaths occurring in this State from 1884 to 1890, pulmonary tuberculosis constituted 11.99 per cent of them, or 787 each year. If we take the minimum estimate put upon the economic value of a human life, we shall find that $3,935,000 are annually lost to this State by the ravages of this terrible disease. Of the loss in intellectual and moral influence, not only to this State but the whole country, who can estimate that, or measure the heart-breakings of the sorrowing friends who remain. None of us have forgotten the alarm and almost panic that ensued last summer when it was telegraphed abroad that cholera had arrived in New York; and yet, as the author of the “Causes of Death” in the report of the State Board of Health to which I have referred you, says, “Even the terrible epidemics of cholera and yellow fever that rage in some parts of the world are not so destructive to human life as consumption is in the aggregate.” This fact, alone, is a sufficient reason why, not only at this meeting, but at every meeting, a portion of your time and your serious attention should be given to the consideration of this disease. Again, the attitude of physicians is slowly changing regarding the prognosis in this disease, and from a state of extreme pessimism, they have entered upon one of more hope. That phthisis can be and is cured, should ever be in the mind of the physician as he treats his cases of this disease. Further, the advances in successful treatment which have been made are rather, in my opinion, hygienic and climatic than medicinal; and to-day there is no drug or combination of drugs or any substance, animal, vegetable or mineral, which has been proved to exercise a curative influence upon the disease. Having devoted considerable time, and travelled somewhat extensively in the study of climate as applied to this disease, I may be in a position to say something of value to you upon this subject, or at least, I can give you my conclusions. Moreover, I have something to say to you regarding the matter of proper respiration, upon which I have been making some investigations the last winter; and I hope to make you share my conviction that the average civilized man does not know how to breathe properly, and that proper breathing is like proper eating, an acquired art. I am desirous, also, of impressing upon you, if I am able, the duty and responsibility of the practitioner in averting this disease by proper prophylactic measures. For these various reasons, then, I have chosen this subject, which for many years has been one of profound interest to me. And you, also, to whom I speak, have all, alas! had large experience in dealing with this dire disease. What New England physician has not?

There are certain general facts which I hold as true, regarding pulmonary tuberculosis; and it may be as well for me to present them axiomatically at the outset:

(1) Pulmonary tuberculosis is, in the greater number if not all cases, a disease of in-door life and impure air.

(2) The first downward step towards pulmonary tuberculosis is impaired general nutrition.

(3) Improper breathing and insufficient lung ventilation may finally result in pulmonary tuberculosis.

(4) Pulmonary tuberculosis is inheritable in the common acceptation of the term.

(5) Pulmonary tuberculosis can be cured or arrested in not an inconsiderable number of cases.

(6) There is no specific for the disease.

(7) The successful treatment is hygienic and climatic; and under hygienic I include lung gymnastics.

(8) Pulmonary tuberculosis is capable of being cured or arrested in any and all climates, but more readily and surely in some than in others.

As we proceed to discuss our subject, let us bear the above axioms in mind. Preventive medicine in the future must and will become a far greater part of our art than it is at present, until we finally arrive at the wisdom of the Chinese, and receive our meagre honorarium for keeping our patients well instead of fighting a too often losing battle with outraged nature. Now and here, however, I believe we can and ought to do far more than we are doing to prevent pulmonary tuberculosis. “Let us set an example,” says Dr. von Ruck,[2] “for integrity of purpose to allow no opportunity to escape, which may aid in restricting and preventing the ravages of a disease which is, of all diseases, the most prolific cause of death, and claims its victims by the hundreds of thousands every year, respecting no one, not even our own persons or families.”

Every general practitioner, particularly in the country, has his families, of which, as years go by, he grows to have a pretty thorough knowledge. He learns their inherited tendencies, and becomes familiar with their habits of life and environment. It is this kind of knowledge, in fact, which renders the family physician so much more valuable to his patients than the most skilled practitioner without it. To know the family, their power of resistance to perturbing causes, what they eat, how they breathe, sleep and work, what they wear, and the kind of air they feed their lungs upon, makes a sum total of knowledge which enables the physician to warn and advise with wisdom and effect. Moreover, it places a certain responsibility upon him to use this knowledge when he sees the laws of health disregarded through ignorance or wilfully. As he goes his rounds he will not infrequently see, in the families of his clients, those who, though they may not be conscious of any especial or great falling off in health, yet are perilously near the danger-line of pulmonary tuberculosis. In one, for example, he will observe that the nutrition is defective from insufficient or improperly prepared food. In another that lung ventilation and aeration is inadequately performed, and air deficient in pure oxygen is being breathed. In a third he will see that assimilation is imperfect and the circulation poor from a lack of physical exercise. These conditions will generally suggest the advice to be given, and it seems to me that the faithful physician should ever be on the alert to detect these deflections from the normal standard of health, and by timely advice and insistence upon change in habits or environments avert the impending danger. An open fireplace in the winter sitting-room; sufficient sunshine in both sitting-room and bedroom; better and more nutritious food; deep breathing and practice in chest expansion; physical exercise of various kinds, bicycling, swimming — a most excellent exercise for lung expansion—tennis, rowing, mountain climbing; change from a damp dwelling to one high and dry, may be the prophylactic remedies to be advised for one or the other condition. Perhaps I can as well emphasize here the great utility, in my opinion, of free-hand physical exercise. No apparatus is required; but a few minutes may be devoted to it daily, and yet the results are both substantial and striking.

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[1] An address delivered before the New Hampshire Medical Society, June 20, 1893.

[2] The Prophylaxis of Tuberculosis. Reprint from the Therapeutic Gazette, April 15, 1890.

Again the physician finds his opportunity for his prophylactic advice when the individual presents himself as a patient, complaining of a group of symptoms which go to make up that condition which has been aptly termed the pre-tubercular. He complains of general malaise, want of vigor, loss of appetite, digestive disturbances, irregular sleep; and the physician will note loss of weight, superficial breathing and a rapid heart — symptoms with which you are all familiar, and which are so often the vedettes of approaching tubercular trouble. If you examine the chest, the result will generally be negative, or at most only a little roughening of the respiration. If you watch the respiration, or better, measure the lung capacity by the spirometer — which I wish might be done in every examination of the lungs — you will find it below the average, and the respiratory muscles poorly doing their duty. The chest expansion will also be defective. This is, perhaps, a typical case of a large group with which you are all familiar in your daily experience. It is a pre-tubercular state; and, unless so recognized and proper prophylactic measures taken, will inevitably enter the active tubercular condition. It is, moreover, often readily respondent to proper management.

Let me now enumerate a set of interrogatories for the physician to put to himself in his prophylactic endeavors to avert this disease:

(1) Nutrition: Is proper food and of sufficient quantity taken? and is digestion and assimilation good?

(2) Respiration: Is the breathing full and free? and is there good action of the respiratory muscles?

(3) Air: Is pure air and of sufficient quantity supplied? This is of especial importance in sedentary in-door occupations.

(4) Physical exercise: Is sufficient and proper physical exercise taken to ensure good respiration and circulation and proper elimination of waste products?

(5) Situation of dwelling: As to character of soil (damp or dry) and drainage.

(6) Light and sunshine — with especial reference to in-door life: Do working-room, sitting-room and bedroom have sufficient light and sunshine?

(7) Clothing and bathing: Is the clothing sufficient and of proper texture? and is bathing sufficiently frequent, not only for cleanliness, but to give tone and vigor to the peripheral blood-vessels?

(8) Mental condition: Do worry and a depressed mental state exist?

Other points will suggest themselves to you, I dare say; but the above seem to me the most important ones to be taken into consideration, bearing in mind that a disregard of any one or a combination of them opens a possible avenue for the entrance of the dreaded bacillus. It is not my purpose to exhaustively discuss each one of them, and, indeed, it is quite unnecessary before an audience of intelligent physicians; but I do desire to consider, somewhat in detail, the matter of proper respiration, a subject upon which I have been making some investigations for the last year or two.

Nature when left to herself is a very wise mother, and generally sees to it that what she creates properly performs its functions, be it a plant or man. But civilization — so-called — sometimes woefully interferes with her and thwarts her evident intentions. The savage, obeying nature, lives out of doors, bathed in sunshine and fresh air. He is physically active, which compels him to breathe deeply and fully. He runs, swims, climbs; all of which exercises are excellent for producing large lung capacity and ample chest expansion. Not so, however, is it with the civilized man: he leads, more or less, an in-door life where the air is often impure and insufficient. He takes too little or no physical exercise, so that he almost forgets that he has muscles which need to be used for their own integrity and that of the rest of the body; and proper respiration has come to be a forgotten natural art, and must be an acquired one, if he possesses it at all. The civilized man has forgotten how to breathe properly, and the civilized doctor seems to have forgotten to teach him.

Few of us, I believe, thoroughly ventilate and inflate our lungs; and I am of the conviction that this defect is an important and frequently overlooked factor in the causation of pulmonary tuberculosis.

Let me call your attention to some measurements of chest dimensions and lung capacity:

CHEST MEASUREMENTS.

Girth of Chest (muscular).	*Repose.*	*Inflated.*	*Difference.*
Men: Average of E. O. Otis. 1,000 measurements between 16 and 40 years of age	34.0 in.	36.1 in.	2.1 in.
Average of Dr. Hitchcock of Amherst College, 8,000 meas. . . .	34.6	36.5	1.9
Average of E. Hitchcock, Jr., of Cornell College, 15,000 meas. . .	34.5	36.3	1.8
Women. Mt. Holyoke and Wellesley students. Measurements of Miss Wood and Dr. Mary Colton .	29.5	31.5	2.0
Respiratory Chest.			
Men: Average of E. O. Otis. 1,000 measurements	31.1	33.1	2.0
Women: 50 per cent. of 1,500 Wellesley students. Miss Wood . .	24.6	27.2	2.6
Depth of Chest.	1,000 m.	112 m.	
Men: Average of E. O. Otis . . .	7.3	8.2	0.9
Breadth of Chest.			
Men: Average of E. O. Otis. 150 measurements	9.6	10.8	1.2
Depth of Chest.			
Women: Fifty per cent. of 1,500 Wellesley students, Miss Wood .	6.9	..	..

CAPACITY OF LUNGS.

Men.	*Cubic Inches.*
Average of E. O. Otis, 1,000 measurements . . .	240.6
Hitchcock, Sr., 8,000 measurements	230.0
Hitchcock, Jr., 15,000 measurements	236.6
Women.	
Mt. Holyoke and Wellesley students, measurements of Miss Wood and Dr. Mary Colton	145.8
Fifty per cent. of 1,500 Wellesley students, Miss Wood .	150.3

Comparison of the Vital or Lung Capacity and the Amount of Air Exhaled after an Ordinary Quiet Inspiration. Average of E. O. Otis, 150 Measurements.

	Cubic inches.
Vital capacity, or amount of air exhaled after a full inspiration	[illegible]
Amount of air exhaled after an ordinary quiet inspiration	[illegible]
Difference, complemental reserve air .	101.2
As given by [illegible]	[illegible]

The tables just given are the results of my own investigations and of the comparison of them with those of several other investigators. Let us now consider their significance. These measurements independently taken by different examiners are so nearly alike, that we can assume, I think, that they are approximately correct. The average man, then, should increase the circumference of his muscular chest, by full inspiration, from 1.8 to 2.1 inches, and of his respiratory chest 2 inches; and the average woman 2 to 2.6 inches and 2 inches respectively. Moreover, the average vital or lung capacity may be regarded as between 230 and 240.6 cubic inches for men, and between 145 and 150.3 cubic inches for women. Further, the depth of an average man's chest may be taken as 7.3 inches in repose, and of a woman's 6.9 inches; and the breadth in men 9.6 inches in repose and 10.8 in full inflation. Consequently the antero-posterior and the transverse diameters of an average man's chest ought to increase about an inch in full inspiration. You will also observe that the so-called "complemental" and "reserve" air is about 100 cubic inches.

In making a physical examination of the chest, I believe we shall often gain valuable information, as to the manner respiration is being performed, by taking these different measurements and comparing them with the averages. Moreover, long before we obtain signs of disease by percussion and auscultation, an examination of this kind may, if the measurements are much below the average, arouse a suspicion of future trouble and suggest prophylactic measures in the way of deep breathing and exercises in lung expansion. Again, so long as the lungs fall short of full expansion in ordinary quiet breathing by about 100 cubic inches, once or twice, at least every day, full, deep inspirations should be taken so as to thoroughly ventilate the lungs; and this is especially needful for those who lead sedentary lives. The performance of this act is easy, and requires but a few moments each day; indeed, it is accomplished unconsciously by any active exercise, such as running, swimming, tennis playing, and the like. With those, however, who take little or no active exercise and follow sedentary occupations, it must be a matter of conscious exertion. With the hands upon the hips and the shoulders thrown back, standing either out of doors or in a well-ventilated room, one should slowly fill the lungs to their utmost capacity, and, after a moment at rest in this condition, slowly exhale. It is also of assistance to gradually raise the out-stretched arms over the head while one is inhaling, thus aiding the intercostal muscles, and so, more thoroughly opening out the chest. It is a significant fact that, after deep, full breathing and chest expansion has been practiced for some time, the "complemental" air is reduced, and the difference in the two diameters, in repose and full inspiration, is lessened; indicating that a habit of constant and permanent chest expansion has been established; which means, other things being equal, a valuable safeguard against pulmonary tuberculosis. In examining young men of average health, but of sedentary occupations, I have frequently detected the crepitant râle on deep inspiration at the lung apex, indicating not a diseased condition but simply the pulling apart of agglutinated lung cells, which in the insufficient lung expansion have fallen into disuse. May not this be one of the reasons why the apices of the lungs are so frequently affected?

The importance of this subject of proper lung aeration and chest expansion has been overlooked, it seems to me, both by the general practitioner and the specialist. May I have sufficiently excited your interest in it to cause you to bear it in mind when you are making a physical examination of the lungs, as well as when you cast a professional eye upon those who fall under your observation.

Let me next call your attention to some points in the hygienic and climatic treatment of pulmonary tuberculosis; but first, however, let me say a word as to the curability of this disease, or more accurately, its arrest. Do not be sceptical upon this point, but approach your patient with the hope born of conviction.

"Dr. Coats,"[3] says Fowler, "as the result of the careful scrutiny of post-mortem examinations, has come to the conclusion that about 23 per cent. of the persons who die of disease unconnected with tuberculosis have been, at a former period of life, affected with some form of internal tuberculosis."

Professor Brouardel[4] found evidence of cured tubercle in the apex of the lung in 60 per cent. of those over thirty years of age whom he examined after death from violence.

"In 200 autopsies in which this point was especially examined, Harris found 38.8 per cent. in which there were relics of former active tuberculosis."[5]

Of 1,000 cases in the practice of Dr. Williams,[6] 198 died; and of the 802 alive, 285 or 35.5 per cent. were classed as well; 293 or 36.6 per cent. as tolerably well; the well and tolerably well thus comprising 72 per cent. In a private letter received from Dr. O. Peters, of Davos, Switzerland, which is the famous high climate sanatarium for the treatment of this disease, he says that after eleven years of practice, his experience shows that a perfect cure is obtained in 20 to 25 per cent. of the cases and great improvement in 60 per cent.

The pathology of arrested phthisis is fascinating, but I have not time to consider it here. I will only say in brief that it occurs by the formation of a barrier of fibroid tissue. Let me, however, refer you to the record of 177 autopsies for other diseases in which evidence of arrested pulmonary tuberculosis was found in Dr. Fowler's[7] paper upon arrested phthisis.

Given then a case in which we find evidence of pulmonary tuberculosis, bacilli in the sputum, percussion and auscultatory signs, and all the other confirmatory symptoms, how shall we treat it? Let us suppose, moreover, that it is an incipient or not far advanced case in which treatment is of most avail. Let me repeat what I said in the beginning, that there is no drug or medicinal remedy which, in my opinion, exercises more than a very secondary influence upon this disease, neither creosote nor tuberculin nor the hosts of other remedies or combinations of remedies seem to me to have stood the test of extended experience in producing definite favorable results. Our treatment, then, must be hygienic and climatic; let us become thoroughly convinced of this.

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[3] Fowler: Arrested Pulmonary [illegible] p. [illegible]

[4] Ibid., p. [illegible]

[5] [illegible] Medicine [illegible]

[6] C. J. B. Williams [illegible] Consumption, 1887.

[7] Fowler: Arrested Pulmonary [illegible]

Food, exercise, fresh air, sunlight, rest and peace of mind must be our reliance in successfully battling with this disease as indeed with so many others. "As I watch the better medical practice," says Dr. Mitchell,[8] "I see a tendency to rely less upon mere drugs and more and more sharply to question their value — you will be struck, as I have been, when you come to read the books of the great masters, dead or living, with the great stress laid upon habits of living, what shall be eaten, diets, exercise, clothing, hours of work and rest." Climatic treatment, to which I shall call your attention directly, is a potent factor and of invaluable aid in consummating the cure or arrest, yet in any climate, by utilizing all its capabilities, there is much hope of success.

With regard to the diet, you cannot exercise too much care. Prepare a dietary yourself, and be sure that your patient eats regularly good, well-cooked, nourishing food. All sorts of special and exclusive diets have at one time or another been recommended, but I believe a plain mixed one to be the best. See to it that the material and cooking are good and not that usually found in the New England country household. Often the meals can be multiplied to advantage. In Dr. Turban's sanitarium in Davos, which I had the pleasure of visiting, the patient obtained five meals a day, as follows: First, coffee, tea, chocolate or cocoa with bread, butter and honey. Next a lunch of bread, butter and milk. Third, dinner consisting of five or six courses. Later, afternoon coffee with bread, and finally an evening meal of three courses. Milk was also furnished whenever desired.

Of primary and vital importance is out-of-door life. "I am well satisfied," says Dr. Austin Flint, "that here is the foundation for the successful management of pulmonary tuberculosis." "Out-of-doors," "out-of-doors," "out-of-doors" should ever be the watchword of the tuberculous individual. He should establish a habit of out-door living, and whatever may be the climate and weather, he should go out every day. "Neither the cough, the fever, the night-sweats, nor the hæmoptysis contraindicates this rule," says Osler.[9] Says Lindsay:[10] "There is now a vast mass of evidence which conclusively proves that consumption is comparatively rare among those who follow an out-door life under normal and healthy conditions; that it is comparatively common among those who live habitually in-doors; that it attains its maximum incidence among those whose occupation involves prolonged confinement in a vitiated atmosphere." This statement he verifies with figures and statistics.

It is hardly necessary for me to give you illustrations of the happy effect of out-door life upon this disease; you all, no doubt, can recall many examples in your own experience; I will, however, call your attention — for you may not have seen it — to the charming account, narrated by the late Dr. Henry I. Bowditch, of the chaise ride of his father through New England for the cure of his tubercular trouble.[11] "The first day," he says, "after a drive of twenty-five miles he was so much exhausted and spat blood to such an extent, that the landlord of the hotel at which they put up, advised his friends to take him back home to die." He pluckily continued, however, and when he finally reached home after a journey of seven hundred and forty-eight miles, he was in much better health than when starting; and by means of walks of a mile and a half to two miles taken three times a day during thirty years of his life, all pulmonary troubles disappeared. One illustration coming under my own observation: a sea-captain, below middle life, apparently well and strong, gives up his profession and out-door life and enters upon business connected with a railroad in a large city. He attains a high position and accumulates wealth, but dies of phthisis at about middle life. His son, also in his father's business, dies of the same disease at an early age. Here we have a change from an out-door life in the pure sea air to in-door life in the vitiated city air — and the result, pulmonary tuberculosis.

Of course, some climates are much better adapted for out-of-door life than others; but here in our own severe and changeable climate, the chances of recovery or arrest of the disease are infinitely better, in my opinion, by the out-of-door treatment than by an in-door life with the dangers of impure and often over-heated air. "I fully believe," says Dr. Bowditch, "that many patients now die from want of this open air treatment." "For years," he says, "I have directed every phthisical patient to walk daily from three to six miles; never to stay all day at home unless a violent storm be raging. When they are in doubt about going out, owing to bad weather, I direct them to solve the doubt not by staying in the house, but by going out." If the patient is too weak to walk, let him be well protected and placed out of doors whenever there is sunshine and the wind is from a dry quarter, whether it be summer or winter; and keep him out for hours at a time. Let him sleep and eat there. I well remember the row of couches with their little tables beside them, which I saw at Davos at the sanitarium I have before mentioned. If we are unable to send our phthisical patients to a more favorable climate, let us utilize to the utmost the weather we have at home, and harden them to endure its frequent and great variations. Out-of-door life in this climate has cured phthisis; let us not forget this. I have often thought that if the same insistence to an out-door life should be practised at home that prevails in the various health-resorts, we should obtain far better results than at present. I wish, indeed, we all could visit some model sanitarium for the treatment of pulmonary tuberculosis, such as the one of Dr. C. von Ruck's at Asheville, or Dr. Trudeau's in the Adirondacks, and then come home and apply the same painstaking care and methods in the treatment of our own phthisical patients, not only as regards out-door life, but in all the detail of their management.

(To be continued.)

THE value of negative information was well stated by a famous French savant, of whom a lady asked an apparently simple question in science. He replied: "Madame, I do not know." "Well, what is the use of all your scientific education if you cannot tell that?" said she. "Madame, to be able to say I do not know."

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[8] Lecture on the Conduct of Medical Life, University Medical Magazine, May, 1893.

[9] Practice of Medicine, p. 256.

[10] The Climatic Treatment of Consumption, London, 1887.

[11] Transactions of the Sixth Annual Meeting of the American Climatological Association, 1889.

Original Articles.

INTUBATION OF THE LARYNX IN PRIVATE PRACTICE: RESULTS IN SEVENTY-EIGHT CASES.[1]

BY [illegible], M.D.

During the seven years that intubation has been before the medical profession, evidence has been slowly accumulating as to its value in the treatment of membranous obstruction in the larynx. It was but natural that an operation of such apparent simplicity and freedom from danger should be received with enthusiasm as a substitute for the older and severer operation of tracheotomy.

The experience of many observers in different parts of the world has placed us in a position to-day to calmly judge of its merits as an operative procedure.

The frequency and fatality of laryngeal obstruction in children is so great that a clear understanding of the elements which guide us in a selection of one or the other operation is of the greatest consequence.

The majority of the reported cases of this operation have been performed in the large metropolitan hospitals, where the cases could be watched with the greatest care and where careful nursing was available. While this is of value it also follows that the children are usually taken to the hospital only after every method has been exhausted to expel the membrane and when suffocation is imminent.

The resulting weakened condition materially affects the outcome of either operation. Where one can watch the child from the onset of the symptoms, an earlier operation is possible, and the strength can be saved to fight the disease.

It is in this class of cases that I desire to present the result of five years' experience in the performance of laryngeal intubation.

Every practitioner of large experience has met with cases where a child suffering with membrane in the larynx, was growing steadily worse, and where the parents would not permit it to be removed to a hospital where an intelligent selection of one or the other method could be made, nor would they submit it to the cutting operation. In this class of cases, there was nothing for the physician to do but to watch the child slowly suffocate, until the originality and patient investigation of Dr. O'Dwyer placed at his disposal a method of relief.

It is here that intubation occupies a field peculiarly its own and no comparative statistical tables can show the number of lives which have been saved by it. My own experience has fully substantiated this statement.

Not the slightest objection has ever been made to the operation or to a re-intubation when the tube has been coughed out.

A case illustrating this fact came to my notice some three years ago through the kindness of Dr. Record, of Wollaston. A child of three years was attacked by diphtheria and rapidly developed symptoms of laryngeal obstruction. An operative relief was recommended and a surgeon was summoned to perform the operation. At the last moment the mother refused to permit the operation. As no tubes were available I was summoned to do an intubation. The operation was easily done and the child completely relieved. The relief continued for two days, when it perished from septic poisoning.

Intubation, then, has for its first advantage availability.

Any one who has watched a child with the disease in question, and has noted the labored breath, the restless tossing and gradual change in color, must agree that both exhaustion and carbonic-acid poisoning are very important elements in deciding the result of either operation.

In the beginning this change is so gradual that the parents are loth to believe that a little delay will not result in an amelioration of the symptoms, and thus postpone an operation which is so severe as tracheotomy. An operation so simple, so painless and bloodless as that under consideration is readily consented to and hours of suffering are saved the child and the strength is by just so much the greater.

This, then, is the second advantage of intubation that it can be done early. To safely perform a tracheotomy at the home of the patient, at least one trained assistant is needed and one man with steady nerves to manage the anæsthetic if one is used and to steady the head.

Intubation, on the other hand, can be performed by one moderately skilful with aid of two persons of ordinary intelligence, one to hold the child, the other to manage the gag. Several times I have inserted a tube with only the parents to help me, and in one instance the original operation was done on a child of thirteen months with the aid of two nervous women. In such a case the most ardent advocate of tracheotomy would find its performance rather difficult.

By these comparisons I do not desire to convey the impression that tracheotomy is always extremely difficult and intubation extremely easy for it is far from being true. Any one who has intubed a young child, gasping for breath, whose small pharyngeal space prevents or prolongs free manipulation and in whom the attempt to enter the larynx produces an alarming degree of cyanosis, will soon realize that any operation to relieve the condition cannot be simple and easy, but is fraught with the gravest anxiety and responsibility. For this reason no operation should be done without a careful consideration of all the elements in the case. Neither should be done as a routine procedure, but each performed in suitable cases. Certain other self-evident advantages belong to intubation: freedom from shock and hæmorrhage, absence of new infecting surfaces and resulting cicatrices, rapidity of performance, the opportunity of breathing air warmed by the natural passages.

My own experience in this operation comprises its performance in 78 cases, all in children under ten years of age. Divided according to age there were:

	Cases.	Recovered.
Under 1 year	[illegible]	[illegible]
1 to 2 years	[illegible]	[illegible]
2 to 3 years	18	6
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1

As regards sex, 48 were males, 30 females; of these, 26, or 33 per cent., recovered.

As these cases were nearly all seen in consultation with various physicians, they have presented a wide variation as to the time the operation was done. In some it was done early, in others very late, and taken altogether they represent a fair average of cases which one meets both as regards severity and time of operative relief. Earlier operative relief would have saved even more lives.

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[1] [illegible]

These cases have been of the greatest interest on account of their occurrence in such varying surroundings. In some the most skilful nursing was available, in others only the simplest attentions were given. In all, the result was so relatively satisfactory that I desire to consider somewhat in detail the elements which have a great deal to do with the success of this operation.

The first important question which arises is, When has the proper moment arrived for operative interference in these cases? I am sure there can be no difference of opinion as to the advantage of early relief. When a child suffering with diphtheria develops a croupy cough with hoarse voice and harsh respiration, and when in spite of the usual treatment has obtained no relief, but is gradually growing worse, the intercostal, supra-sternal and supra-clavicular spaces are beginning to retract, then no advantage is to be gained by longer waiting.

This may take a longer or shorter time, but the persistent and increasing retraction is one of the most important symptoms, and longer waiting is at the cost of the child's strength. The steady progression of the disease with no intervals of relief, together with its gradual onset serve to distinguish it from catarrhal laryngitis, or spasmodic croup, especially in those cases where no exudation is present upon the fauces.

The instruments which are familiar to nearly every one to-day, consist of the introducer, the extractor and gag, varying sizes of tubes with their obturators.

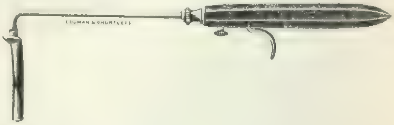
It has been a matter of surprise and regret to me, as doubtless it has to many others, to find the instruments so carelessly made that they are often unsafe for both operator and patient. The original gag devised by Dr. O'Dwyer is difficult to manipulate, and has been replaced in most of the cases, sold now, by a straight one which works with a spring and ratchet. This, for example, is too light, the blades are made of soft iron, the spring and ratchet too weak, which allow the blades to be forced together, or to be snapped quickly when touched by the nervous hand of an untrained assistant. Twice, with the gag furnished in my first set, were the blades forced together while in the mouths of three-year-old children. In these cases the ratchet held well enough but the soft iron of the blades permitted their closure from the strong pressure of the jaws. The danger of diphtheritic infection from a wound in the finger is too great to allow us to consider such a matter lightly. The shank in the introducer is not strong enough, and frequently a bend is produced which interferes with the sliding of the fork which pushes the tube from the obturator.

The thread which unites the obturator to the introducer wears away so rapidly that after a short time the tube turns half-way round when screwed on tightly. Experience at the City Hospital has shown that this part may even break — a very undesirable accident.

I have considered the tubes to be fairly well made, aside from occasional deviations from the correct shape, but a recent experience has taught me that they, too, have the same faults of careless and poor workmanship.

In one of my most recent cases, after removing a five-year-old tube from a dead child, a matter of no difficulty whatever, I was surprised to find an opening had been made in the posterior wall of the tube just below the collar, which was produced by the moderate pressure of the jaws of the extractor. What the effect of the accident would be in extracting from a living child is at once apparent. The walls of this tube were as thin as paper.

I have attempted to overcome some of the disadvantages of these instruments by certain slight modifications. The obdurator is so easily removed from the tube when the latter is held in position by the finger, after introduction, that I have omitted the apparatus for removing it and have had the shank made larger and stiffer, and the thread hardened to prevent wearing. As the sizes below two years will not admit a large thread I have two shanks which are easily interchanged. In the original introducer, the angle made by the shank and obturator is a trifle more obtuse than a right angle. As the larynx is directed slightly backward, with this instrument the handle must be elevated so that the tube will easily enter it.



I have made this angle a trifle more acute than a right angle so that the tube will be directed forward and more easily enter the larynx. The joint in the obturator should be carefully oiled to prevent rusting and a possible breakage when removing it from the tube when in the larynx. To perform this operation quickly and with as little shock as possible, certain precautions are of value. The child's arms should be placed by its sides and a blanket should be firmly wrapped about it leaving the neck as free as possible. In young children two safety pins will make this secure, but in older ones a bandage should be added. If this is not thoroughly done, the child will seize the thread and pull the tube out in the struggle immediately following the introduction. A firm, straight-back chair should be placed so that there is plenty of space about it. The person who is to hold the child should be seated squarely on this chair, and the child placed in his arms, and firmly held. The position which I have found most convenient and which gives the most working space in the pharynx is one midway between the upright and reclining, the head resting on the bend of the elbow of the person who holds the child. Displacement of the gag by the shoulders striking it, or the hand of the assistant, is thus avoided.

The gag is then inserted far back in the mouth, taking care to open it widely or it may slip out, The assistant then holds this, and also steadies the head if no other person is available to do this. The operator, standing opposite the child, passes the left index finger well back into the pharynx and on bringing it forward the epiglottis is quickly seized and retained.

The finger and metacarpal joint of the operator should be well covered with adhesive plaster to prevent injury in case the gag slips. The threaded tube is then introduced precisely on the median line, the handle being at first depressed and then quickly elevated so that upon entering the larynx the tube is directed slightly forward. If the case is an easy one the tube slips quickly into the larynx, and as it is nearly in position the finger is pressed firmly upon the collar of the tube and the obturator removed.

It frequently happens, however, that after the tube enters the larynx it meets with some obstruction, the child stops breathing, gives a gasp and the tube slips in easily. This is caused, I imagine, by the approximation of the vocal cords, which upon separation permit the entrance of the tube.

The presence of the tube in its proper position is determined by two facts: first, the peculiar dry cough, which if once heard is sufficient to make one fairly sure; and second, by the presence of a septum between the finger passed into the œsophagus and the tube in the larynx. If this is felt its position is assured. With finger resting on the collar of tube the thread, which should be waxed to prevent sticking together, can be quickly removed and the operation is completed.

The relief in most cases is immediate. The child, after coughing a short time, breathes quietly, the face loses its drawn and anxious look, and for the first time in many hours goes quietly to sleep. This quick transition from the sufferings of severe dyspnœa to peaceful slumber is one of the pleasantest features of this operation, and it is one not so constantly seen after tracheotomy in my experience. While this is by far the most common result after this operation, it must not be forgotten that frequently certain variations are found, and (rarely, fortunately,) other grave emergencies arise, which one should always be prepared to meet. Among the former we find introduction difficult from enlarged tonsils, from swollen epiglottis and ary-epiglottic folds, and from a larynx small and deeply placed. In all these the first attempt may fail, but it rarely fails to dislodge a considerable quantity of tenacious mucus, or even membrane, which clears the way for the second attempt.

Not more than eight to twelve seconds should be allowed for any one attempt and frequent short attempts are far less productive of shock than a single prolonged one which should never be made.

Among the latter, we have the one possible danger of this operation, one fortunately so rare that it does not deter us in the least from performing it. That is, the danger of the membrane blocking the end of the tube, either by being pushed down and folded up, or by its presence below the lower end of the tube. In these cases the operation gives no relief, and the child may stop breathing.

The tube should be instantly removed and the cough which follows the procedure may dislodge the membrane, and render a second attempt possible. When this does not occur an immediate tracheotomy is the only alternative and it must be done quickly.

The outcome of these cases is usually fatal. The more strictly the tube is kept in the median line the less liable is it to dislodge membrane from the sides of the larynx and carry it before it into the trachea. As the tube reaches to within a half-inch of the bifurcation, it is not often that membrane is present in large enough amount below this to cause trouble.

In contrast to the number of deaths which occur from shock and hæmorrhage during tracheotomy, intubation has nothing to fear from a comparison of possible accidents.

It not infrequently happens that during the coughing which follows its introduction the tube may be ejected. One size larger should be selected and will usually be retained. If the tube is coughed out later in the progress of the case the same rule should be observed.

There is usually in these cases an interval of relief, long enough for the operator to reach the patient, and after the first twenty-four hours it occasionally happens that its re-introduction is unnecessary. In general, I have found that the tubes were a little small, and that the relative size of the child was the best guide in the original selection of the proper size of tube.

The after-treatment of these cases requires patient and unremitting care. Children have been, and will be, lost from lack of attention to certain essential details. Where it is possible, the care that a trained nurse can give, will greatly aid in carrying out these details.

To my mind the most important weapons we have to fight this dread disease are: abundant stimulation and nourishment; the free use of steam, and mercurial medication locally and internally.

The child must not be wakened from its sleep, however long it may be, for any purpose whatever. After wakening, however, if it is given some thin liquid and be allowed to take it in the usual upright posture, a violent attack of coughing ensues from lack of complete closure of the epiglottis over the tube. It does not take many such attacks to discourage a child from taking anything.

If, on the other hand, a semi-solid, like ice-cream, thick cream or the like be given the coughing is much less, or none at all, and the child soon adapts itself to its new condition and will soon attain a certain facility of swallowing which will permit even liquids to be swallowed with comparative ease.

The most important advance in the treatment of these children was made when Dr. Casselberry, of Chicago, showed us that a child lying down so that the pharynx was lower than the larynx could swallow with the greatest ease. When this position can be maintained the battle, so far as nutrition is concerned, is half won. This position, in my experience, is very difficult to get children to submit to, but by patience and firmness considerable can be done in this direction. In young children a nursing bottle is a great help and in older ones a tube through which they can take liquids when lying down. As a rule, the younger the child the more difficult is the swallowing.

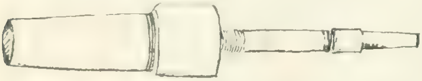
Among the articles of food from which a selection can be made the following are of the most value — cream, ice-cream, egg-nog, bread and milk, blanc-mange, rennet, oysters raw or stewed, bananas and cream, shaved-ice, eggs in various forms, milk, milk-punches, beef-meal, peptonoids solid and liquid, Valentine's extract, bovinine, custard, Charlotte Russe, corn-starch pudding, sherbet, Roman punch, jellies of various sorts, thick gruels.

Rectal feeding has proved very disappointing, the rectum soon becomes intolerant of even the blandest injections, and there is more or less exhaustion resulting from the necessary manipulation. Before we understood the proper method of feeding it often became necessary, now, it is seldom required. If one wishes to use this method, peptonized milk, with the addition of peptonoids liquid or powdered, gives the most satisfactory results. Half-hourly administration of nourishment during the day is advisable unless the coughing is extremely troublesome when hourly administration may be substituted.

In obstinate cases where other means have failed, resort may be had to feeding through a tube. The child is held in the arms, a gag inserted, and a soft catheter passed into the œsophagus and the milk poured into the stomach. The procedure is easily accomplished after a little practice and any nurse can quickly learn to do it. About four ounces should be used each time, with some form of stimulant.

The free use of alcoholic stimulants in these cases serves to most effectually fight the septic poisoning of the disease. It seems impossible to over-stimulate these cases, enormous amounts are taken without flushing or other evidences of too great an amount ingested. For a child of three years, from a half to a tablespoonful of whiskey or brandy can be safely given hourly to be increased or diminished as the case demands. By combining it with milk it is more easily taken and is less liable to cause coughing. When a child objects strongly to these two, champagne may be substituted.

In order to loosen the tenacious secretions steam is one of our most valuable agents. I have given up entirely the various steam atomizers, they are always untrustworthy, a cool vapor is produced and they are not available in all cases. I have found the most practical method was to utilize the ordinary tea-kettle which is always at hand. To the nose of this a rubber tube is attached and conducted to the bedside of the patient. The objection which I found to this was that so large a calibre of tube was required that much of the steam was lost by condensation. To obviate this I have availed myself of a device of steam fitters, which is shown in the diagram, called a "reducing coupling." By means of this a large tube may be used on one side and a small one on the other. They can be ordered from any plumber, by simply designating three-fourths inch and one-eighth inch nipples and a three-fourths-inch reducing coupling. The cost is slight, about thirty cents and the convenience great. If a large volume of steam is to be used, the child's bed or crib should be enclosed in a sheet-tent and the steam introduced beneath it.



Among the various medicinal agents which have been used to prevent the formation and extension of membrane in the larynx, mercury occupies the first place. Children suffering from diphtheria exhibit a remarkable tolerance to this drug. Doses which would salivate an adult are taken with perfect immunity by them. To accomplish anything, large doses must be used. In a child of three years it is well to begin with one-sixtieth of a grain of corrosive sublimate every hour, in Fairchild's essence of pepsin; and this should be increased to one-thirtieth of a grain every hour, if exudation on the pharynx is increasing, or if extension below the tube is taking place. I have occasionally, in severe cases, given one-sixteenth of a grain every hour, and no toxic symptoms were produced. In one case, which was treated under conditions particularly favorable for careful observation, being the child of a physician, during the eight days of the laryngeal invasion six grains of corrosive sublimate were taken in hourly doses of one-sixteenth of a grain. Absolutely no discomfort was noticed.

The symptoms of the toxic action are quickly detected by abdominal pain, nausea and vomiting, and by loose greenish stools. Even more remarkable is this tolerance as shown in the results of the method known as "calomel fumigation." A half-drachm of calomel is sublimed under a tent, and the child breathes this without injury, and with apparent benefit, while the nurses are usually mildly salivated by the slight amount of vapor which escapes from the tent. This method seems to promise good results in the treatment of this disease, but I have not as yet had a good opportunity to try it.

I have seen several cases of beginning laryngeal obstruction which have subsided without an operation where steam and mercury had been freely used, and in these cases the improvement seemed to be due to the mercury. In three cases, I have seen a fresh exudation form on the tonsils where it had disappeared after the use of this drug, and when from fear of poisoning its use had been discontinued. Upon again using it, the exudation promptly disappeared. If enough similar cases can be observed, it will materially aid us in deciding as to its value.

From my experience so far I should hesitate to treat diphtheritic croup without it. In addition to the drug internally, a spray of corrosive sublimate (1–2,000) is of service, used both in the nose and throat. I have given up the use of local applications if a child objects very strongly; for the exhaustion more than balances any benefit to be derived from their use.

Among other agents which are of service are digitalis, if there is defective action of heart or kidneys; also iron and peroxide of hydrogen in very septic cases, applied by spray or swab in the strength of one to four. The temperature of the room should be moderately elevated, 70° to 74°, and the air should be frequently changed to ensure plenty of fresh oxygen.

In favorable cases the child soon becomes reconciled to the presence of the tube, breathes quietly but rather more rapidly than normally, has now and then a severe paroxysm of coughing as it raises masses of tenacious mucous membrane through the tube, and often sits up in bed playing with its toys. More or less cough is constantly present, chiefly for the raising of the large quantities of secretion which come through the tube, but which being swallowed are not so easily noticed, and do not require the care that the secretion from a tracheotomy tube does. In fatal cases the child may gradually sink, the respiration becoming more frequent and the pulse weaker, and death may occur within the first ten hours. The shortest interval that I have observed has been eight hours. In many cases no unfavorable symptoms arise until the third day, when the temperature begins to rise, the respiration becomes rapid and somewhat labored, and the child dies from the resulting broncho-pneumonia in twenty-four to forty-eight hours. In the majority of fatal cases death occurs before the fourth day; and if they pass the third day without the development of these symptoms we can feel tolerably sure of a favorable outcome. The longest time that has elapsed in these cases which I have met with has been six days. If sudden occlusion of the tube occurs, a rare accident in the experience of those who have seen the largest number of these cases, the only resource is to use the method mentioned by Drs. Prescott and Goldthwaite, as used by a nurse at the City Hospital, which was to raise the child by its feet, when the tube may be moved enough to dislodge the obstructing membrane.

Dr. O'Dwyer suggests the value of firm pressure on the chest in cases of this kind, in the hope that the air thus compressed may force the tube out. It seems reasonable and deserves a trial.

The prognosis in these cases is a matter very difficult to estimate. Cases which look favorable will develop the most serious symptoms, and die; while those who have apparently no chance will pull through. In the cases which have come under my notice there were two well-marked classes:

The one, where there was or had been, little or no exudation upon the fauces, glandular enlargement or nasal discharge. This class of cases is often mistaken in the beginning for ordinary follicular tonsillitis, and I have in several cases noted the history of an attack of follicular tonsillitis perhaps a week before the onset of the laryngeal symptoms. Too great care cannot be taken in clearly establishing the diagnosis in such attacks; and in the present state of our knowledge I do not believe it can be done absolutely until a bacteriological examination has been made.

The other class has the ordinary symptoms of diphtheria; the fauces are more or less covered with membrane, the glands are enlarged, and more or less nasal discharge is present.

In fatal cases, the cause of death in the first class is from bronchial extension, and in the latter from septicæmia.

From the fourth to the sixth day the tube should be removed. It is often difficult to decide just when this should be done. In general the younger the child the longer the tube is required; and it is also true that the shorter time a tube is in the less the liability to to produce any ulceration from pressure, or to produce an irritation in the larynx which may be sufficient to require its insertion even in the absence of membrane. In cases where there is an exudate on the fauces, the disappearance of this is a valuable guide in deciding this point. If the temperature is normal or nearly so, the respiration easy and not increased in frequency, and if, in other words, the pathological process is at a standstill, the removal of the tube is advisable as soon as possible after the fourth day.

The operation of removal of the tube is far more difficult in my experience than its introduction. If any one doubts that it is difficult, let him attempt to localize the opening in a small tube, where the pharynx is small, and where every thing is covered with slippery mucus and feels alike, and after having done this successfully to attempt at the same time to hold the epiglottis out of the way while the point of the extractor is inserted into the tube. Far more practice is required and less is available (for removal from a dead child is quite another matter than from a living one), in the extraction of a tube than its introduction.

The instrument designed by Dr. O'Dwyer has the marked disadvantage that it does not hold the tube firmly enough, so that when partial removal is accomplished the tube slips off. Dr. Nichols of the City Hospital has skilfully worked out the mechanical problem, and has devised an extractor so excellent that any trouble in this direction will be avoided. Two points should be kept in mind in removing a tube: keeping the handle depressed as the tube is raised from the larynx, and also avoiding too great pressure downward in difficult cases. If there is much difficulty, it is safer to have an assistant place a thumb against the trachea where the lower end of the tube can often be easily felt, and by pressure upwards a greater firmness is given which renders a pushing into the trachea improbable.

If the tube is to be reinserted, the dyspnœa may at once recur, but in most cases not for four or five hours; after twelve hours they are usually safe. A most interesting exception to this was seen in a case which I saw with Dr. Francis Murphy, of Roxbury.

A child of eight and one-half years was intubed on November 27, 1890. The case progressed favorably, and the tube was removed on the sixth day. No recurrence took place until December 7th, when a second intubation was necessary. Removal was again accomplished on the fifth day, December 12th, and the case continued to perfect recovery. This is the only case of the kind I have ever seen, and the only one in which I have been obliged to reinsert a tube. After removal, the same treatment should be kept up for twelve hours. Children, from a stiffness of the epiglottis swallow little if any better for that length of time than when the tube is in position. Steam can usually be omitted on the second day, and the bichloride diminished rapidly till it is omitted on the fourth day.

From the foregoing considerations it will be seen that intubation is an operation especially adapted to private practice. It is always available, can be done early, is both painless and bloodless. In a majority of cases it relieves the dyspnœa perfectly and leaves no after-effects. It saves as many lives as tracheotomy, and many more where the latter could not be performed. On the other hand, it cannot be selected in all cases. It is not advisable where the tonsils are so large that they prevent the necessary manipulation, or where the fauces are full of putrid *débris* and the epiglottis immovable from the destructive action of the disease. Nor is it advisable in cases at a great distance on account of the possibility of the tube being coughed out and the dyspnœa recurring before the operator could reach the patient.

If one is called upon to operate upon his first case of croup, it would be wiser to select tracheotomy; but after a certain familiarity with the feel of the parts has been attained, which largely does away with the awkward and even brutal attempts seen in the beginner, I am sure that intubation would nearly always be selected. The operation is not and can never be an easy and simple one; extremely so at times, at others it is so difficult as to perplex the most skilful intubator. When its advantages have become thoroughly known, I am sure that many lives will be saved which now are lost, and that the profession will feel an increasing sense of gratitude to the skilful physician who devised it, Dr. Joseph O'Dwyer.

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HORSE-HAIR IN MINOR SURGERY.[1]

BY C. [illegible] THOMPSON, PH.[illegible], M.D.

In calling attention to this subject it is not assumed that anything entirely new is to be presented, for horse-hair was probably used by surgeons in early times; but that its real usefulness is practically unknown to many is evident from the fact, that little has been written regarding its use, and it is found in the hands of very few at the present time.

The principal materials now in general use in suturing wounds, are catgut, silk, and silver-wire. Catgut for stitching, has many disadvantages. When it is removed from the various liquids in which it is usually kept, it is harsh and kinky. When moistened with water or fluids from the tissues, it becomes slippery; and in either condition it is not easily handled, and is particularly difficult to tie. It is quite uncertain as to its retaining powers; and the fine gut cannot be used as it is too quickly absorbed. It is, therefore, often necessary to use a much larger needle than is desirable, as the eye of a smaller needle will not admit it, and its want of pliability causes it to form a shoulder at the eye, which is certainly objectionable.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 5, [illegible].

Silk, although probably used more than any other material, is also open to several objections. It must be sterilized by immersion in antiseptic solution or moist heat; and when this is done it becomes swelled, so that it is difficult to get it through the eye of the needle. If threaded before it is sterilized, the needle will rust. When placed in the wound it imbibes the secretions of the tissues, and there forms a media for the invasion of bacteria, which have been proven to be present in the epidermis even after the most thorough disinfection. In this softened and soggy condition it becomes yielding and allows the opposed surfaces to move easily, which is unfavorable to union. If drawn sufficiently tight to hold the tissues in place, tension is apt to occur in the wound. Silver-wire, as a suture, offers fewer objections than any in common use, this being due largely to its non-absorbing property, but wire is not suited to all parts of the body. In its application to the lax and delicate integuments, it disposes the edges of the wound to twist and coil up far more readily than the wire itself. It is too stiff and unyielding, and therefore, its adjustment to these parts is difficult. After it has remained in the tissues for some time, it becomes so rigid that its removal is not only painful, but the parts are often torn, and the freshly united edges of the wound separated.

It was not until I had used horse-hair for three years, and had become thoroughly impressed with its practicability, that I had occasion to review the literature on the subject. The first mention of horse-hair found was in an article by Mr. T. Smith, of St. Bartholomew's Hospital, in the London *Lancet*, in 1862; in which he gives the results of a series of experiments with this material. In 1870, Dr. J. T. Darby published a monograph on "Hair as a Suture and Ligature"; a report of twenty cases was given in which hair was used in suturing with excellent results. In a paper entitled "Horse-hair Suture and Drainage," read before the New York Medical Society in 1884, Dr. Daniel Lewis relates his experience with horse-hair, and speaks highly of its utility.

Horse-hair is readily obtained by all surgeons, whether in city or country practice, and its preparation for use is perfectly simple.

The objection has been made that horse-hair, being cellular in structure, cannot be sterilized. This objection, however, is not well founded, as horse-hair is not materially injured by any of the methods used in the sterilization of dressings. Boiling in water is acceded to be one of the most practical methods; and according to the experiments of Drs. Stone, Dowd and others, all pyogenic bacteria are quickly destroyed, even the spores of these organisms cannot long resist this treatment. It is, therefore, an easy matter, should sutures not be at hand, for one to always readily prepare a practically sterilized suture, by removing a few hairs from the tail of a horse, placing them in boiling water for from three to five minutes, when they will be ready for use.

Although pus-producing micro-organisms are unquestionably destroyed by boiling, there are, however, certain forms of germ life whose spores are very resistant, as those of anthrax and tetanus; and as there is always a possibility of these being found in horse-hair, a series of experiments were performed with various disinfecting solutions. Dr. A. K. Stone kindly made the bacteriological tests for me. I will not here detail the various experiments; but it is enough to say that the simple immersion in ether, alcohol, solutions of carbolic acid and corrosive sublimate, for several hours, or days, and even repeated boiling in water was found not to render the hair *absolutely* sterile.

I have used the following method in preparing the hair for use: A bundle of carefully selected hair weighing from one to four drachms (the very fine and coarse hairs being discarded), is freed from dust as much as possible by shaking and combing. It is then washed in strong soap or soda solution, and when dry placed in a jar or bottle of the capacity of about one pint (a Mason fruit-jar answers the purpose admirably) which is then filled with benzine, the jar being agitated frequently. The treatment with benzine may be repeated several times; thus all fatty material is removed from the hair. It is next treated with a strong solution of bichloride of mercury, and finally immersed in bichloride of mercury solution, 1–1000. After this treatment the hair was found to be *absolutely* free from germ life.

If removed from the antiseptic solution it becomes stiff and wiry, and is not easily tied. It should, therefore, be kept in the solution until needed for use. A small bundle of hair can be folded and placed in antiseptic solution in a small vial, such as is carried in the ordinary medicine case, and is then ready for immediate use. Unlike catgut or silk, it does not swell when placed in aqueous solution, but, on the other hand, is rendered more suitable for use by its becoming more pliable, and its flexibility is retained so long as it is kept in a moist condition. It can be easily tied and holds a knot perfectly well. Its smoothness and uniformity of calibre, is such that it can be very easily passed through the eye of the needle, which is certainly a marked advantage over catgut or silk.

When a single hair only is required, a small needle or one with a small eye can be used. This is of decided advantage, notably in stitching about the eye and face, where one is particular not to leave stitch scars. How frequently we see in recently healed wounds, that have been closed with either catgut or silk sutures, stitch scars that are even more unsightly than the line of union itself. These scars after the use of the hair stitch, properly applied with a fine needle, are almost imperceptible. The sole disadvantage of horse-hair is its want of tensile strength, which makes it less useful than wire where several tissues are to be included and there is much tension in the wound; but by using two or more hairs together the strength is quite sufficient to readily overcome the tension of even large wounds. As a rule, a single hair is sufficient for closing a wound, unless it be large and much gaping is present.

The large, black tail-hairs are preferred for sutures, as they are more easily seen when you desire to remove them, which is done by seizing the knot with forceps and snipping the hair to one side, when its smoothness and elasticity greatly facilitates its removal.

Horse-hair has all the advantage of the metallic suture, save that of strength, and is much more desirable to use where the tissues are lax and delicate, as of the eyelids, scrotum, penis and mucous membranes. It is equally unirritating, and so flexible as to readily accommodate itself to the folds of the integuments. Its pliability permits it to be easily passed through the tissues, and by its expansion it almost relieves itself from the tissues in which it is placed.

Its removal is accompanied with no pain or liability of injuring the parts. The hair suture produces so little irritation in the tissues that it can be allowed to remain for some time. I have removed these stitches that had been in the scalp from fifteen to eighteen days, and had apparently produced no disturbance. The fact of their being tolerated by the tissues for so long a period, makes it specially applicable to plastic surgery.

I have used this material for drainage, a small bundle being passed through the eye of a probe, and then the probe passed through the closed linear wound, drawing in the hair; or, if the wound be deep with narrow outlet, a bundle folded upon itself can be forced into the wound, and it certainly answers the purpose well. As the wound heals, the drainage can be gradually removed a few hairs at a time. It is not, of course, suited for draining large wounds.

My experience with horse-hair has been considerable, having employed it in the treatment of 296 incised and lacerated wounds during the past year. These have included nearly every part of the external body and its orifices, but principally of the face and scalp. The results in these cases have been so gratifying that I am convinced that the value of horse-hair renders it deserving of more general use.

I venture to call attention to the following cases:

Case I, January 11, 1892. Mr. C. D., age thirty-one years.

He came to office with incised wounds caused by broken glass. First wound on right eyelid three-fourths of an inch in length. Second, beginning at right eyebrow, extending upward and to the left, across the forehead, about two inches in length. Third, horizontally above left eye-brow, one inch long. The fourth, horizontally across the upper part of forehead, two inches long. First was closed with five single horse-hair sutures, second with eight, third with three, and fourth with seven, making in all twenty-three stitches in the face. Bichloride dressings were applied, the wounds healing promptly. In three days half of the sutures were removed, and the remainder on the fifth day.

Case II, October 2, 1892. Mr. C. L., age twenty-six years. Congenital phymosis; circumcision.

Elastic band placed about the penis. Forty minims of four-per-cent. solution of cocaine injected. About one inch of prepuce was removed, and frenum (which was short) was snipped. Elastic band removed. Small vessels seized and twisted. Fourteen interrupted sutures used to bring together edges of skin and mucous membrane. Dressed with sublimate gauze. Seven stitches removed on the sixth day and remainder on the eighth. Union by first intention. This is the tenth adult circumcision in which I have used horse-hair.

Case III, Mrs. C. R., age twenty-seven, primipara. Lacerated perineum.

Saw her on September 28, 1892. Had been in labor about six hours. Examination showed breech to be the presenting part. Labor was allowed to proceed without interference until breech was delivered. Patient was then anæsthetized, and feet and hands of child brought down. In haste to deliver the head I applied the forceps, and head was rapidly delivered. Child was resuscitated, and labor was concluded by expressing placenta. Upon examination, perineum was found to be lacerated for about three-fourths of its depth. This I determined to close immediately. Vagina was loosely packed with sublimate cotton, edges of laceration thoroughly cleansed, and wound closed with nine double horse-hair sutures. Packing was removed and no dressing was applied, and owing to circumstances and surroundings of patient, no special care was taken of wound. Patient made a good recovery. On the tenth day stitches were removed, the wound having closed by first intention.

The above is one of several perineal cases, in all of which I have closed laceration with horse-hair sutures with pleasing results.

Case IV, February 2, 1893. Mr. J. G., age twenty-seven years. Applied for treatment of swelling in left groin.

Examination and history lead to the diagnosis of syphilitic bubo. There were no signs of fluctuation. Solution of cocaine was injected, and an incision three inches long was made. Four large softened suppurating glands were removed, cavity curetted, and wound closed with five double horse-hair sutures, a drain being placed in lower end of incision. A large bichloride dressing was applied, and patient walked out of office. He returned again on the fourth day, and wound was again dressed. On the tenth day the stitches were removed, the wound having healed by primary union.

A SUMMARY OF THE ADVANTAGES OF HORSE-HAIR.

(1) Easily obtained and inexpensive.

(2) Soft, pliable, elastic and holds a knot well.

(3) Aseptic, non-absorbent and non-irritating.

(4) Can be used with a very small needle, and makes no shoulder at the eye.

(5) More easily removed than any other suture, without pain or injury to the tissues.

(6) Can be used for drainage.

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Clinical Department.

SIMULTANEOUS FRACTURE (INTERARTICULAR) OF BOTH OLECRANON PROCESSES.[1]

BY J. S. BOLAND, M.D.

Finding only one similar case on record, and getting the consent of my patient to appear before us to-night, I have thought that there might be enough interest in it, to justify me in reporting this case.

August 16, 1891, Miss H. fell from the foot-board of an open horse-car, her dress drapery having caught on some projection of the seat or seat arm. She believes that she had both arms flexed in falling and struck both elbows on the pavement. The appearance of the elbows confirms this view. When she fell, she had but a single thickness of a summer garment on her arms.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April [illegible].

When examined by me within twenty minutes of the accident, I found a simple transverse fracture of the right ulna in the depth of the sigmoid notch and a similar break on the left side with, in addition, a splitting of the detached olecranon at an angle to its long diameter. There was bruising and excoriation of the skin and soft parts over the back of both elbows, most marked on the left side; but although all three of the fractures extended into the joint, in neither case was the joint opened to the surface of the skin.

Realizing that there might be troublesome complications ahead, I asked Dr. M. F. Gavin to see the case with me. When he examined her the interarticular swelling was slight. He concurred in the diagnosis; and together we applied light, long wooden splints to the palmar side of both arms from the axilla to the ends of the fingers, disregarding the natural lack of parallelism between the arm and forearm and leaving a wide opening in the dressings over the elbows, to accommodate the now rapidly increasing size of the elbows from swelling of the soft parts and effusion into the joints. No attempt could be made to keep the distinctly separated fragments in contact at this time. Later, it was attempted on the right side; but the attempt was unfortunate, and, as I believe, responsible for the slower recovery of mobility in this joint than on the other side, where the conditions were much worse primarily on account of the comminuted fracture and greater injury to the soft parts. Indeed, so badly did the left joint look at this time that I feared its disorganization as the skin sloughed in places, rendering soothing applications necessary for several days.

Dr. M. F. Gavin kindly saw the case with me when the dressings were changed for the first time, and again to assure us both that the case was not so bad as it looked (which was certainly bad enough) with sloughing soft parts.

The patient was now, at the fourth day, getting very uncomfortable from the necessary confinement to bed on her back, as in no other way could the arms be supported; and she was as helpless as if she had no arms, not being able to turn or sit up.

Knowing that there would still be many days before flexing of the arms would be safe, I applied the principle of the Salter's cradle to her case. Erecting a light frame seven feet high, I slung two straight cradles by compensating cords and pulleys so as to admit lateral or front and back swing and adjustable to any elevation or angle. While sitting in a chair this could be used for some hours daily, with much relief from the irksomeness of the bed and dragging weight of the arms when motion was attempted.

As the swelling of the elbows went down, I began to fear anchylosis rather than non-union, to obviate which I began passive motion, stroking, kneading and, in short, general massage of the arms as early as the fourteenth day. At no time was pronation or supination seriously interfered with; but flexion of the right arm was most difficult and painful, although flexion of the left, from which at first there was most to fear, was less so.

About the twenty-fourth day the splints were removed except at night, and soon after entirely dispensed with, and special attention was given to daily massage. I am convinced that to this thorough daily massage, the patient owes the successful outcome of her case.

As soon as possible, gymnastic exercises were begun — at first only tossing a four-ounce bean-bag, then small dumb-bells, then light chest-weight exercises and finally Indian clubs, which she is now master of.

As mentioned above, the most seriously injured arm (the left) in which no coaptating measures were used, began to gain first, made more rapid progress, and its perfect use was regained long before the right, though Miss H had always been right-handed. I cannot explain this unless it was due to the attempt to coaptate the fragments of the right arm by pressure.

I was ready to report this case a year ago and show its results; but the Secretary of the Section had all dates filled for months ahead.

It is due to the patient to state that she has faithfully and intelligently persevered in every procedure attempted for her relief, in spite of the fact that an impending suit for damages put a premium on slow progress or permanent disability.

If you will examine the elbows, the lines of displacement can be distinctly felt, though less so now than formerly. The right hand covers the corresponding shoulder less perfectly than the left, but still as much so as in many who are uninjured. In sewing, when the weight of the arm comes on the shoulder, pain is still experienced. This is probably due to the severe jarring the shoulders received at the time of the accident, though no objective signs of injury could be found there at the time.

Miss H. will now swing the light Indian clubs, that you may see her perfect control of her arms. This exercise is one with which she was unfamiliar until after her accident.

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AN ANOMALOUS EXTERNAL ILIAC ARTERY: AUTOPSY REPORT.[1]

BY PAUL THORNDIKE, M.D.,
Surgeon to Out-Patients, Carney Hospital, Boston.

A MAN, M., forty-eight years of age, entered the Carney Hospital on January 23, 1893, as a patient of Dr. W. N. Bullard, visiting physician to the hospital. The man was suffering from a chronic interstitial nephritis and died from this disease a few days later.

While examining the man, Dr. Bullard noticed a marked pulsation in each groin, and on palpating the areas, felt what he thought were large arteries pulsating directly under the skin and each apparently passing over Poupart's ligament and down into Scarpa's triangle. Two days later, January 25th, I saw the man with Dr. Bullard. As the patient lay on his back in bed, a pulsating area was to be seen in either groin. On palpating one of these pulsating areas there was no feeling of "thrill" or expansion, but the fingers felt what was evidently a large blood-vessel, which appeared close under the skin at a point about an inch above Poupart's ligament, passed over the ligament at a point midway between the anterior, superior spine of the ilium and the symphysis pubis, and then immediately became indistinguishable from the femoral artery, which could be felt pulsating in its normal position. The vessel felt like a somewhat atheromatous artery, and was about the size of a lead-pencil. On examining the other groin an exactly similar condition was found.

On the following day the man died; and I quote this extract from the autopsy report, furnished me by Dr. F. Coggeshall, pathologist to the hospital:

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 5, 1893.

"The autopsy showed that the patient had suffered from chronic interstitial nephritis and arterio-sclerosis. At the end of the autopsy the following curious anomaly was observed: 'In both groins there could be felt passing over Poupart's ligament, and lying apparently just under the skin, a round, firm, somewhat movable, cord-like body about the size of the little finger. After removing the contents of the pelvic cavity, it was possible to trace distinctly the course of the abdominal blood-vessels, and it then became evident that what was felt under the skin was an unusually large external iliac artery which bent suddenly toward the surface when it had nearly reached Poupart's ligament and passed over it and just beneath the skin and superficial fascia. On continuing the abdominal incision into both thighs so as to lay open Scarpa's triangle, the whole course of the vessel was laid bare. It clearly passed over Poupart's ligament, rising abruptly from pelvic cavity and sinking again as abruptly to lie at the usual depth from the surface in Scarpa's triangle. The peculiarity was exactly the same in both thighs.'"

The vein accompanied the artery in both cases, while the nerves passed under Poupart's ligaments in their usual position. It was not possible at the autopsy to remove enough of a specimen to show all the relations of the artery and vein, so I am able to show you only the vessels themselves. The specimen includes about two inches of the right common iliac artery, the whole of the external iliac and the common femoral and about two inches each of the femoral and profunda femoris arteries.

In conclusion, I want to say that there can be no possible doubt of the anomalous course of these vessels, in spite of the well-known rarity of such anomalies. The dissection at the autopsy was most carefully and thoroughly made by Dr. Coggeshall, and was witnessed by Dr. Bullard and other members of the hospital staff. I have been unable to find a similar anomaly recorded in literature.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

[illegible], M.D., SECRETARY.

Regular Meeting, Wednesday, April 5, 1893, **Dr. Abner Post** in the chair.

Dr. E. S. Boland reported

TWO CASES OF SIMULTANEOUS FRACTURE OF BOTH ELBOWS.[1]

Dr. H. L. Smith showed two specimens, one a comminuted fracture of the olecranon taken from a man who had fallen from a height together with snow and ice, and had sustained internal injuries from which he died in a few days. Attention was called to the deep indentations upon the articular surface of the trochlea and the likelihood that adhesions might be formed at these points. The second was an elbow found in the dissecting-room, the history of which was not known. There was a Colles' fracture apparently impacted and firmly united. There was also fracture of the coronoid process, which was shown on section, and transverse fracture of the olecranon not united. It appeared that the accident must have occurred many months previous to death. [illegible] not at all displaced, the fact of there having been a fracture being shown only by a line running through the articular cartilage. On cross-section in a vertical plane, the fracture was seen to have included the bone. The olecranon process was fractured nearly transversely, about two centimetres from its extremity. There was absolutely no attempt at union of the broken surfaces, the fragments being [illegible] fibrous bands connecting their posterior surfaces. The olecranon fossa was partially [illegible] extension was limited to [illegible] right angle. Flexion was nearly perfect, the fragments then becoming separated about half a centimetre. As far as could be judged the arm must have been a very useful one.

Dr. Smith said: An instance of simultaneous fracture of both olecranon processes has been reported by Fletcher.[2] The patient, a lad of sixteen fell over a piece of timber, striking on both palms. There was a separation of [illegible]. He was treated in "the usual way" by splints; and it was found after his death, which occurred ten months later from phthisis, that both processes were firmly united by bone.

Three reasons have been given for the frequent lack of bony union after fracture of the process:

(1) Insufficient blood-supply, due to the fact that the process is not covered by true periosteum but by an aponeurotic layer continuous with the tendon of the triceps.

(2) Imperfect contact between the broken surfaces, caused either by muscular spasm or effusion into the joint.

(3) Presence between the broken surfaces of foreign material, such as blood-clot or shreds of tissue.

All procedures, other than the commonly employed one of fixation of the joint with attempted replacement of fragments by various forms of external pressure, have been devised for the immediate purpose of overcoming one or the other of these supposed causes of non-union:

(1) We may safely say that the reason first given, namely, that of deficient blood-supply, is no longer tenable, since experience has shown that vertical fractures here and in the patella, where the conditions are very similar, always unite readily and firmly, and it has been abundantly proven that bony union does occur in the great majority of cases when the fragments have been wired.

(2) Probably far too great stress, here as well as in other fractures, has been laid upon muscular spasm. Mr. Macewen[3] has observed how easily the fragments of a transversely divided patella can be brought in contact after an incision has been made and other causes of separation have been eliminated.

To remove interarticular pressure due to effusion Grimm[4] has in one case employed early massage. In this instance there was a final separation of one-half cm. The injury in this case was a direct fall upon the elbow, a form of injury which ought, on theoretical grounds, to give the best result so far as a bony union is concerned. There have been reported three cases[5] in which the joint has been aspirated. Two occurred in young men; one in a woman of sixty-eight. All were the result of direct violence, and all were aspirated immediately, with the removal of considerable quantities of blood and bloody serum. Very close union with good functional result occurred in all the cases. It is to be noted than no one of the above forms of treatment will insure bony union.

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[1] [illegible]

[illegible]

(3) The real reason for the frequent lack of union seems to have been arrived at by Mr. Macewen,[6] who made experimental fractures of patellæ, and who observed that where rupture occurred through indirect violence the bone was the first structure to give way and then the fibrous aponeurosis covering its anterior surface became overstretched, and finally ruptured, the ragged edges becoming folded over the fractured surface. When the rupture resulted from a direct blow on the patella the aponeurosis was itself torn across in the line of fracture. In the latter case there is no impediment to the direct contact of the broken surfaces, and bony union is more apt to follow. In the former case the fibrous masses cannot be dislodged and form an efficient barrier in preventing coaptation and bony union. Mr. Macewen thinks that he can demonstrate the presence of this aponeurotic tissue between the fragments by the soft elastic feeling, which he compares to that made by blood-clot obtained in attempts at producing crepitus. Although no experiments were made upon the olecranon, the writer referred to has observed a similar condition to that which obtained in broken patellæ in three cases where he had opportunity to cut down upon fractures of the process within a few hours after the injury. In these cases there was the same feeling of soft crepitation, and the explanation was found in the presence of the ends of the fibrous aponeurosis which had fallen in between the fragments.

To remedy such a condition nothing short of open incision seems to offer much certainty of success. I have found reports of fourteen cases where the olecranon has been wired. They are reported by Agnew,[7] Manley,[8] Mackay,[9] McCormack,[10] Rose,[11] Parker[12] and Macewen.[13]

Of the fourteen cases five were done within a few hours after the accident; six in consequence of non-union, after a lapse of from a few weeks to four months; and in three the reason is not stated. In four cases the result was noted as due to direct injury, and in three cases to indirect violence or to muscular action. In the others the point of injury was not distinctly stated. In two cases the arm was put up in a flexed position with good result.

It is interesting to observe that not a single bad result is recorded. The fragments have remained in perfect position, and in nearly all the cases the functional result was described as practically perfect after the lapse of from two to four months. In one case a bit of wire was removed from a sinus after fifteen months; with this exception no trouble was experienced with the wound.

While the result of these recorded cases may not justify a general resort to wiring in every case of olecranon fracture, they do give good assurance that excellent results may be expected to follow a secondary operation where lack of union or wide separation of the fragments produce diminished power of forearm extension.

Dr. Gay: I should like to ask Dr. Boland if he made any experiments before he put on his splints, to see if the position of the arm had anything to do with the position of the fragments.

Dr. Boland: I did not attempt it at all. In regard to soft crepitus, we did not get soft crepitus. Crepitus was distinct and so plain that there was no mistaking it. On the left side you could make out three pieces, and the crepitus was distinct between each.

Dr. Gay: I asked the question because, while the classical way of treating those cases is with the arm in the extended position, I have seen a few cases where the position of the forearm seemed to have no effect upon the relative position of the fragments. It is easier to carry the arm in the right-angle position than in the straight position. I have always thought that the separation of the fragments was dependent upon the amount of laceration of the aponeurosis and the surrounding tissues. I remember one case I treated in the flexed position, and the result was good enough. In other cases where there was wide separation, of course I should not treat it in that way. I have never wired the bones. This case of Dr. Boland's is very interesting because the injuries were very severe and the functional results were admirable. Nothing could have been better.

Dr. Post: I should like to ask Dr. Smith if anything was stated in regard to the indications for wiring the fragments in the cases he has referred to.

Dr. Smith: Dr. Agnew's case was a case of ununited fracture, and the wiring was undertaken on that account. In several other cases the operation was done for lack of union, with consequent disability.

Dr. C. M. Whitney read a paper on

INTUBATION OF THE LARYNX. A RÉSUMÉ OF CASES IN PRIVATE PRACTICE.[14]

Dr. Gay: I think Dr. Whitney has been particularly fortunate in his results, and is to be congratulated thereon. There is one point especially I want to speak of, and that is the way of estimating the value of the two operations. Heretofore it has been done, and I have been guilty of the same thing, by estimating the number of recoveries or deaths. It seems to me that is not the proper way. These operations are done for one specific object, and that is to relieve the laryngeal dyspnœa, not with the object of preventing or curing septicæmia, or preventing or curing bronchial croup, only to relieve the dyspnœa due to obstruction of the larynx. That being the case, we can very readily reconsider, I think, the value of the two operations. So far as my experience goes, intubation relieves the laryngeal dyspnœa about as well as tracheotomy. Once in a while a case of tracheotomy seems to do better than intubation; but I think in that case it is where the amount of thick gummy secretion is profuse, and there, I imagine, a little is pushed down ahead of the tube, and the child cannot clear the trachea and the tube, and relief is not as great. In only one or two instances have I been obliged to pull out the tube and do tracheotomy. The more I see of this operation the more I believe in it as the ordinary every-day operation in private practice. In the hospital I do not think the difference is so great.

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[6] Annals of Surgery, St. Louis, 1887, 5, 177-200.

[7] Phil. M. & S. Reporter, 1879, 279.

[8] Pittsburgh Med. Rev., 1888, 2. 245, also, N. Y. Medical Journal, 1889, 1[illegible].

[9] Can. Lancet, 1887, 105.

[10] Australasian Med. Gaz., 1885, 5, 61.

[11] Lancet London, 1880, 1, [illegible], also, Med. Press & Circ., 1883, 289.

[12] Tr. Clin. Soc. London, vol. xviii, p. 329; also, vol. xxii, p. 415.

[13] Annals of Surgery, St. Louis, 1887, 5, 177-200.

[14] See page 341 of the Journal.

The other points in Dr. Whitney's paper I agree with very generally, especially is the point of stimulation well brought out. In septicæmia of all kinds it seems to me stimulants are the best agents with which to combat it; and as Dr. Whitney says, I do not believe, as a rule, you can give too much. My experience with the bichloride has not been as fortunate as Dr. Whitney's, perhaps, because the type of cases was different. But I do not know of anything else to take its place, and I think it is well to persist in its use.

Dr. Prescott: I think that if Dr. Gay had taken only the cases that he had in the hospital, and looked at the results which he obtained from mercurial treatment, he would find that his success had been similar to that of Dr. Whitney's, because he has been the one who, more than any other, has used the mercurial treatment, and has upheld it at all times when he has been on service; and the results in those cases which Dr. Goldthwaite and I reported were much more favorable when treated with mercury than in the cases not so treated. I think the difference was over seven per cent.

As regards the difficulties of the operation, I think it is quite a common thing for a person who for the first operation has an easy case to think that the operation is an easy one. I have had three men come to me and say they thought I put too much stress upon the difficulties of the operation, as it was so easy. They had never done the operation, and yet had put the tube in the first chance they had to try. I have always taken the ground that they would come to a case where they could not get the tube in; and that has been the case with every man who has spoken of it to me.

I think the point Dr. Whitney made about feeling the septum behind the tube is of very great importance in deciding whether the tube is in the larynx or not, for although the peculiar cough which comes when the tube is in the larynx is almost pathognomonic, yet even the practised ear is sometimes deceived.

In a meeting that was held here some months ago the question of drainage was dwelt upon, and the advantage of tracheotomy in giving good drainage to a case of diphtheria was presented as one of the advantages which tracheotomy had over intubation. I have looked up the cases of tracheotomy where there was no diphtheria, to see if there were not in such cases a great deal of discharge. In the last ten years at the hospital I could find twenty cases of tracheotomy done for other causes than diphtheria. In six of the cases no mention whatever is made of the discharge. One of the others died within twelve hours. There was a good deal of discharge, but I do not think it a fair case because the patient had large white kidneys and died with œdema of the lungs. In one case of tuberculosis there was little or no discharge from the tracheotomy tube, the patient doing well. In all the other cases mention was made of a profuse discharge, beginning with mucus tinged with blood and becoming purulent. In one case, a case of bullet wound, the man died of purulent bronchitis. In another case of cut-throat I could not decide where the pus came from. They said it was a cut-throat, and the tube was put through the wound and pus came from that. I threw it out as not being a fair case, but all the others seemed to me to be fair cases. In each there was a good deal of discharge from the simple introduction of the tracheotomy tube. In one of the cases where there was no mention made of the discharge, the house-officer who was on duty at that time remembered the case very well. It was a case of tracheotomy for paralysis of the vocal cords. In that case the man had to have a special nurse night and day on account of the extreme discharge from the tube necessitating its removal every two hours. There is nothing to show as yet that the intubation tube in the larynx causes the extreme discharge which comes in the tracheotomy tube: and it seemed to me possibly one explanation of the fact that cases get well after tracheotomy, where the discharge was free (and the percentage is nearly fifty in the cases reported by Lovett and Munroe where the discharge was free), was due to the fact that in those cases the membrane had not extended below the larynx, therefore the trachea was more nearly in the normal condition, and that the irritation set up in other cases was set up in these cases more easily than where the trachea was lined with membrane, as it is in the more fatal cases.

Dr. C. O. Thompson read a paper on

HORSE-HAIR IN MINOR SURGERY.[15]

Dr. Storer: I think the reader did not mention one suture which I regard as an ideal suture in almost all respects, that is silk-worm gut. It is sterilized without any trouble merely by immersion in steam for three or four minutes. It is absolutely unirritating. It has also the advantage which the reader spoke of as belonging to silver-wire the best of the other sutures, namely, strength. A medium sized silk-worm-gut strand will not be broken by all the strength you want to put upon it. It is said that three or four strands of horse-hair would be equally strong. It seems to me there are objections to suturing with a material of which you have to take several strands.

Dr. Thompson stated, in answer to questions, that horse-hair could be used to close almost any wound. He had under treatment a patient from whom he had removed a large tumor, and had used thirty-six sutures in the wound. In that case there had been a good deal of tension, but without any sign of cutting.

As to the tests by Dr. Stone, I have received only reports as to the presence or absence of bacteria. In all instances the organisms were present except when the horse-hair was sterilized by the treatment with benzine followed by bichloride. In some of the tests organisms were present after repeated boiling.

Dr. Thorndike showed a

PATHOLOGICAL SPECIMEN OF AN ANOMALOUS EXTERNAL ILIAC ARTERY.[16]

Dr. Munro: This certainly is a most unique case. It is difficult to understand how the artery could pass over Poupart's ligament. The ordinary anomalies of the femoral consist in its coming from the internal iliac (the branch corresponding to the external iliac being a very small vessel), or it splits in the pelvis or under the ligament; and there may be a vas aberrans. I can find no record of a case similar to the present.

A **newspaper** with a weakness for medical items published the following remarkable statement in a recent cable dispatch regarding the illness of Prince Bismarck: "The sciatica has now reached his arms and prevents him from using his hands, so that it is necessary for his attendants to feed him."

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[15] See page [illegible] of the Journal.

[16] See page [illegible] of the Journal.

NEW HAMPSHIRE MEDICAL SOCIETY.

ANNUAL Meeting at Concord, N. H., June 19 and 20, 1893.

DR. EDWARD O. OTIS presented a lengthy paper on

PULMONARY TUBERCULOSIS, ITS PROPHYLAXIS, HYGIENIC AND CLIMATIC TREATMENT.[1]

DR. DAY: I have been interested to compute from the State Board of Health's Reports, the number of deaths from phthisis in the State of New Hampshire. As compared with the whole number of deaths in each county, the percentages of deaths from this disease are as follows:

Coos County	[illegible]
Carroll County	10.76
Sullivan County	10.84
Grafton County	10.90
Merrimack County	10.[illegible]9
Cheshire County	11.21
Hillsboro County	11.54
Rockingham County	12.63
Belknap County	12.95
Strafford County	13.80

Surely a marked difference. Now, if you will look on the map of New Hampshire, you will see that the countries which show the lowest mortality are in the more elevated portion of the State, while those which show the highest are along the sea-coast, or in the lower portion. So it seems to me that, as Dr. Otis says, we can take advantage of this fact and send our patients who cannot go South or West to higher altitudes nearer home.

DR. CONN: In order to have a dry climate we must have a dry soil. Mere altitude, though it be in a section of the country where but little rain falls, does not always make a dry climate, certainly not a dry soil. Places like the city of Mexico, where the rain falls during only two or three months of the year, would be uninhabitable, were it not for the fact that they have perfect sunlight all through the winter. It is a land of perfect sunshine during the winter months, and yet even there they have much consumption. Their most fatal diseases are phthisis and pneumonia. To those going from the States into that section it is folly to expose themselves after nightfall; and even in the day-time it is better to keep in the sunlight.

There are portions of Mexico which might be good places for consumptives, if they could get good food and shelter. In El Paso, Tex., I found physicians who thought it impossible to live in other climates. Dr. Jessup went from the States, going into other parts of Mexico, but found no place where he could breathe so comfortably as in El Paso. He gained in weight, and now considers himself quite well; and other physicians have had similar experience.

The County of Grant, in New Mexico, which is larger in area than the State of New Hampshire, the altitude being from 4,000 to 6,000 feet, with only an average of three inches of rain annually, would be an excellent climate; for there consumption among the natives is almost unknown, and whenever it can be made comfortable for people to go and stay in hotels and boarding-houses, it will become the sanitarium of this country.

Silver City, N. M., can be made comfortable for invalids, and may be a good place; but it is useless to send people who have had the refinements and luxuries of home into a wild country where they will have to rustle around like the natives of the country. They cannot do it, and they will sink faster than if they remained in their own land.

SEQUELÆ OF LA GRIPPE.

DR. W. H. ALDRICH, of Marlboro: While the complications of *la grippe* have been many and varied, involving nearly all the organs of the body, most of the physicians have been particularly struck with the prominence of nervous and mental phenomena presented in individual cases.

One of the most common complications has been the so-called pneumonia following *la grippe*, which I am inclined to think is not pneumonia at all. A distinct difference can be made out between the true pneumonia lung and this grippe lung. In the latter there is a varying condition of blood stasis, unaccompanied by râles; and if resolution takes place within three or four days, as it is quite apt to do, it is accompanied by distinct mucous râles, giving no time for the slow bronchial breathing that characterizes the latter stage of true pneumonia. It is true that during the continuance of the blood stasis there is more or less of an exudation, which, as it increases, will give some bronchial breathing, which is never so complete as in true pneumonia, and which condition will pass off as gradually, or even more so, than it is formed.

Among the other disorders, resulting from an attack of influenza, which can be explained on this same theory of local vaso-motor paralysis, may be mentioned disorders of the liver, kidneys and pelvic organs. They suffer from forms of hyperæmia (subacute or chronic) which are more or less prolonged; and in patients suffering from chronic Bright's disease, uræmic convulsions have been precipitated. We also meet with various disorders of the extremities, such as flushed or pallid fingers, abscesses of the limbs, a sa result of this nervous disturbance.

The peculiar forms of pulse and perverted action of the heart, extending in some cases to cardiac paralysis, are really nervous phenomena which are due to paralysis, either partial or complete, of the inhibitory apparatus of the heart.

Any attempt to classify these nervous and mental phenomena must be attended with much difficulty, because there are, in the first place, affections occurring in nervous tissue and organs, although strictly speaking not nervous diseases, as in the articular pains and other so-called rheumatic manifestations, which are quite apt to follow after an attack of *la grippe*, as well as various forms of neuralgias, hyperæsthesia and paræsthesia which occasionally leads up to complete anæsthesia. Secondly, there are affections which would be recognized as properly referred to the nervous system, as in cases of neuritis, meningitis, cerebritis, and combinations of these inflammatory affections. Thirdly, there are symptoms which, although manifested in a non-nervous organ, are directly traceable to a nervous origin, as in the diseased condition of liver, kidneys, pelvic organs, etc., and as in the false pneumonia already mentioned.

In many cases, patients who suffered from the disease early during the epidemic are suffering to-day from the profound prostration attendant as a sequela. Undoubtedly to the cardiac debility may be largely attributed this weakness.

Cases of insanity are mentioned as a result of *la*

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[1] See page [illegible] of the Journal.

grippe. Fortunately they are rare; but undoubtedly, if facts were gathered, we should find more cases than are recorded, and a certain per cent. of our suicides might safely be attributed to the same cause, as a natural sequence from the generally depressed condition of the nervous system. There are cases of active insanity recorded, as occurring at the onset of influenza, and during its height. But the most of them occur during the decline of the disease and during convalescence, and the most common form is one of melancholia in the majority of cases.

Dr. Dinsmore: We lay too much to *la grippe.* We used to have cases of nervous exhaustion, nervous prostration and insanity before we had *la grippe;* and they are not more common now than then. In treating *la grippe*, we were probably in the habit of using the coal-tar products — phenacetine, acetanilid, antipyrine, etc. Sometimes they are used in immense doses (ten, fifteen or twenty grains to a dose); and the thought has occurred to me that possibly some of those weak hearts that have been attributed to *la grippe* might be traced to too much medication on our part. We must take into account other causes, and not lay everything to the door of this disease.

Dr. Conn: Dr. Aldrich spoke of the delirium as being rather of a mild form and not at all permanent. I have in mind one case in which the delirium lasted pretty much all winter, and there has been a recurrence of the insanity this season, the patient being still under treatment. The patient suffers from delusions, yet I have reason to hope it will not prove permanent.

Dr. Russell: I wish to mention another case of insanity parallel with the one just spoken of by Dr. Conn. The two cases presented almost precisely the same symptoms, and the terminations were about the same at first. While the insanity in the case mentioned by Dr. Conn has returned to a certain extent, probably as the result of overwork and anxiety, the mind of the other patient remains perfectly clear, and the general health is fairly good.

Dr. Palmer: I have given doses of acetanilid, antipyrine, etc., and have regretted it. It is not my impression that I have injured my patients materially. I have had these sequalæ — nervous depression, etc.; but I think not from the treatment. I fully believe that depression of the nerve centres is occasioned by *la grippe.* I never considered that the nerve centres were primarily affected; perhaps they were.

Dr. W. T. Smith: It is a microbe that causes the disease; and the product of the microbe acts on nerves and nerve centres. The evidence is obvious. As the first and most prominent symptom we find pain — pain in the head, in the back, in the limbs. Patients say they "ache all over." They do not all suffer in the same degree, but all have pain. In many cases we find disorder of the stomach, perhaps with vomiting. This is due to the toxic action of the microbe on the sympathetic plexus of nerves supplying the stomach. We find congestion of the lungs very marked, at times simulating pneumonia; and true pneumonia sometimes occurs as a complication. This congestion may be ascribed to the paralyzing action of the virus on the vaso-motor nerves of the lungs.

Other various local disturbances — as cystitis, otitis, irregularity of the heart — may be best explained on this theory, that it is the nervous system which is attacked, and that the various organic troubles are essentially affection of the nerves and nerve centres.

Dr. M. C. Lathrop: In the height of the epidemic of 1890, I saw two cases of well-marked hemiparesis, which proved to be merely prodromatous to *la grippe;* the paralysis wholly disappearing upon the fuller development of the main disease.

APPENDICITIS.

Dr. George H. Sanborn, of Henniker, presented a lengthy paper. He concluded as follows:

(1) That in all cases the physician is concerned only in the early recognition of the disease, the subsequent treatment to be left to the surgeon.

(2) That the catarrhal or mild form of appendicitis may be considered the only medical form of the disease; and delay in operating may be encouraged to a reasonable extent.

(3) All cases of appendicitis which, at the end of thirty-six hours from the beginning of the attack, show signs of increasing disease should be operated on.

(4) That the majority of so-called recoveries, treated medically, are not recoveries in the full sense of the word, but simply a respite which enables one to settle worldly affairs, and take out a life-insurance policy, in anticipation of a fatal termination.

(5) The early surgical treatment of appendicitis enables us to avoid in every case uncertain results of a spontaneous cure, the danger of recurrent attacks, and the often fatal general peritonitis in apparently mild cases.

Dr. Ira J. Prouty, of Keene, reported twelve cases of appendicitis during the year ending May 18, 1893.

He said, in closing: From my limited experience in the treatment of appendicitis, I realize that it is a very grave disease; and we should not consider that any case is to be a mild one, as oftentimes the symptoms change very suddenly. The early treatment of cases of this kind should be rest in bed, liquid diet and judicious use of salines. There is a question about the use of hot applications, but there is one thing sure, that in many cases they will relieve the pain almost immediately.

I do not believe in the use of opium in inflammation about the cæcum any more than I do in hernia. In a paper read before this Society last year I said that the use of anodynes, especially morphia hypodermatically, in cases of strangulated hernia, often caused a fatal termination, as the most acute symptoms are blurred or blotted out entirely, and a false sense of security is felt by both physician and patient, and an operation is deferred until it is too late. If the case goes on and symptoms become more pronounced, the question of expediency of operation arises.

There is no one rule to govern us. Each symptom must be carefully weighed before deciding; but we should remember that early operations are advisable, rather than to wait for the formation of a large abscess, that no one can fail to detect on percussion or through the rectum. We must not rely on rise of temperature, for we have seen in Case VI that the temperature was normal for forty-eight hours before operation, and the pain had subsided a great deal.

The presence of a tumor is one of the most reliable guides, but not infallible, for we cannot be sure of fluctuation on account of the soft and yielding character of the contents of the abdominal cavity, and, moreover, muscular rigidity might be mistaken for the presence of a tumor.

As has been said, all the symptoms must be weighed carefully. The most marked cases there will be no doubt about, nor of the mild ones; but it is those of a medium nature that will cause the surgeon the most anxiety as to what manner of treatment is the most advisable.

The question of treatment of the stump, after removal of the appendix, has been much discussed. Some surgeons insist that the only safe way is to turn in the peritoneal edges and stitch with a Lembert suture; others always apply a ligature and cauterize close to the cæcum; while others merely apply a ligature and amputate a little distance from it, as has been the method used in all the cases herein reported. I believe it makes no material difference how it is accomplished, if the opening is only closed.

In the recurrent cases it is better to operate between the attacks, when the patient is in good condition and there is no inflammation, than to run the risk of waiting until there is suppuration and possibly septic poisoning, and until the patient is in poor condition to withstand an operation which must be done, perhaps hurriedly and with bad surroundings, in order to save life. After a patient has had two attacks of appendicitis, I advise the removal of the offending member, as I believe this is the only sure means of cure.

After operation for this disease, I always recommend the patient to wear an abdominal supporter in order to avoid ventral hernia; especially, if, like some of the cases here given, they are obliged to do heavy lifting. We should always insert three rows of sutures, instead of involving the peritoneum, muscles and integument in row.

By doing the operation under the strictest aseptic precautions, the mortality is growing less every year; and if a diagnosis is made early in the case, and operation (if found necessary) not put off too long, we can expect good results in nearly all these cases that formerly were invariably fatal.

COCAINE.

Dr. Henry Dodge, of Penacook, reports several cases of the use of cocaine in diseases of the bladder and stomach.

My theory of the method of its operation in diseases of the bladder is this, namely, that its local application to the mucous membrane with which the bladder is lined produces anæmia of this membrane in the same manner as we have all, no doubt, noticed its operation when applied to any inflamed conjunctiva, and that, by thus controlling the blood-supply to the inflamed part, it allows nature to assert itself and arrest the inflammation.

With regard to its use in diseases of the stomach, I believe it to have an indication in a wide range of diseases. I shall only endeavor to name a few of the more important. In cancer of the stomach, given in doses up to half a grain, many times it will control pain and stop vomiting; its great advantage over morphine in this class of cases being that it does not constipate the bowels. For vomiting of pregnancy, exhibited in minute doses at frequent intervals, as well as for obstinate vomiting from any other cause, it is of great value. I recall one patient with whom a great many prescriptions had been tried without success, who was almost instantly relieved by a dose of one-sixtieth of a grain given in water every fifteen minutes. For the relief of gas in the stomach, combined with bromide and codeine, I have found it to be of benefit in a large percentage of cases, also in gastralgia given in full doses every two to four hours. It is also of value as an ingredient of almost any combination for the relief of sick or nervous headache, being superior to the minute dose of morphine so often used. It is always well when using it in a new case to be exceedingly cautious, as a great many individuals, from an idiosyncrasy, are exceedingly susceptible to its effect.

Dr. Megrath: I have not had any experience in the use of cocaine in diseases of the bladder, but in cases of pregnancy I have used it with marked success. I had one case in which the patient had not for some time been able to retain anything to speak of on the stomach. I recommended cocaine; after that she retained food. I have used a great deal of it with carbolic acid in extracting teeth. Patients say it does not hurt much; I never used enough to know that I got bad effects from its use. I have never used it in surgery, except in the removal of toe-nails and small growths. I should only advise its use for minor operations.

Dr. Leet: I have used cocaine for more than eight years and for various operations. I have yet to see the first unpleasant result from its use.

Dr. Allen: I am a thorough believer in cocaine; and if we leave the discussion where it is, I fear we shall leave a wrong impression. I have used it hundreds of times and for many things; for extracting teeth, amputation of fingers, removal of large wens, and in an operation on a large gland where an incision three and one-half inches deep was required; and I have never seen the first unpleasant result — I do not say *dangerous*, I say *unpleasant*. Now, am I wrong in using this? Am I careless in using it? I ask the result of the use of cocaine? Have you had any unfortunate results in its use? If so, for the sake of suffering humanity and your fellow practitioners tell us this afternoon. I have seen cocaine used many times, and I have seen ether used; and have seen more unpleasant results from the use of ether than from cocaine. Then why not caution each other to be careful in the use of ether as well as cocaine?

Dr. Dodge: I have used cocaine in a great many cases and in a great many ways of which I have not spoken in my paper. I have used it, as others have, hundreds of times for the extraction of teeth; I have used it for opening abscesses; and, as has been said, I have not, in any of my cases, seen the first unpleasant result. I recall, however, that when I was in college, there was a student there who had a slight operation to be performed on his eye. He went to a physician, and a small quantity of a four per cent. solution, I believe, was injected. The operation was not performed, as violent symptoms of poisoning came on almost instantly. The physician immediately procured a hack and accompanied the young man to his boarding-place, remaining with him several hours, and to say the least, the symptoms were *decidedly unpleasant.* Therefore, I say we must be careful, as there are many cases of idiosyncrasy; and if we chance to find one of those cases we should be prepared for it. I have used it with caution even in so simple an operation as the extraction of teeth. I do not wish to be understood as regarding cocaine to be as dangerous as ether.

Other addresses and papers were the following: "Philanthropic Medicine," by Dr. E. F. McQuesten; "Use of Forceps," by Dr. Bradford Allen; "Report on Gynæcology," by Dr. D. M. W. Russell.

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TWENTY-FIRST ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD, 1891-1892. SUPPLEMENT CONTAINING THE REPORT OF THE MEDICAL OFFICER.[1]

In transmitting his Annual Report, Dr. Thorne Thorne recognizes the valuable services of his predecessor, Dr. George Buchanan, who had served the Government for thirty years as Medical Inspector, and as Chief Medical Officer of the Local Government Board. "Those alone," he says, "who have had the opportunity and pleasure of working under his direction, can appreciate to the full the important influence for good, which his labors have had; and they alone can realize how much the Medical Department owes to the example which he set as an earnest worker and director, who never ceased to claim that all true sanitary progress must be based upon accurate and scientific research into the etiology of disease."

The report shows that the vaccination returns for England for the year are not very satisfactory. After deducting from the total number of births in England and Wales for the year (885,909) those who had died unvaccinated, and those who were found to be insusceptible, and others whose vaccinations were postponed, there still remained 9.6 per cent. unaccounted for. For a period of twelve years (1872–1883) the percentage of children unaccounted for was quite uniformly, about 4.5 per cent. but it has steadily risen since 1883. The greatest delinquencies were in Leicestershire 43.9 per cent., Northamptonshire 31.8 per cent. and Bedfordshire 26.5 per cent. These figures "indicate a further increase in the amount of failure to comply with the law relating to vaccination, a circumstance which becomes serious in view of the growth of small-pox, which is in progress in many parts of the country." At the Animal Vaccine Station in Lamb's Conduit Street, London, 336 calves were vaccinated during the year, and from these 7,529 persons received primary vaccination.

Among the local inquiries made by the medical inspectors during the year there is one which is worthy of notice as confirming a previous report of the same Board upon the origin of scarlet fever. This outbreak was traced to a milk-supply, and the Board concludes that, so far as it goes, the inquiry materially strengthens the conclusions arrived at by the Medical Department of the Board in the Hendon case, that there is a disease in the cow which is capable of being transmitted in the form of scarlatina to the consumers of milk.

A considerable part of the report is devoted to an inquiry by Dr. Parsons upon the subject of the transportation of town manures and their effect upon health.

That part of the report which is of most interest to the medical profession is the portion which embraces the auxiliary scientific investigations of Dr. Klein and others upon the bacteriology of diphtheria, and other allied subjects. He found that "so-called" scarlatinal diphtheritis occurring in the *early days* of scarlet fever attack, is not, judged from the bacteriological standpoint, diphtheria; and, on the other hand, that similar manifestations, whether of diphtheritic or croupy type, occurring in the *later stages* of, and during *convalescence* from scarlet fever, are almost invariably true diphtheria. But, he also finds, in the majority of cases examined by him, that membranous croup of the larynx or trachea, though altogether dissociated clinically from diphtheria, is to be regarded as essentially that disease; indeed, so far he has only met with a single instance of croup not related clinically to diphtheria or to scarlatina, in which he was unable, with the material at his disposal, to demonstrate the presence in the membrane of bacillus diphtheriæ.

Dr. Klein also reports the results of experiments in which he sought to induce erysipelas and vaccinia simultaneously in the calf. The vaccinia took and ran its course, while the microörganism of erysipelas failed entirely. He therefore concluded that calves were insusceptible to erysipelas. The practical bearing of this experiment upon the practice of animal vaccination is sufficiently plain.

Other simultaneous inoculations of the different microbes resulted variously.

Other important investigations are reported upon in this volume, as follows: "On the Products of Bacillus Pyocaneus as affecting the Development of Tubercle," by Dr. Klein; "On the Chemistry of Diphtheria," by Dr. Sidney Martin; "On the Chemistry of Susceptibility and Insusceptibility," by Dr. Hamer; and upon "The Effect of Pus upon the Vitality of Bacteria," by Dr. Andrewes.

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INFANTILE INSURANCE.

The practice of insuring the lives of children has become so prevalent among the lower classes in England, that various official inquiries have been held and attempts made to restrict it. The National Society for the Prevention of Cruelty to Children brings many parents into court charged with maltreating or neglecting their children, and among these cases are many in which it appears that the lives of the children are insured. In few is there a deliberate intention on the part of the parent or parents to direct murder, but in many the neglect is so outrageous that it is evident they follow Clough's decalogue, "Thou shalt not kill but needst not strive, officiously to keep alive." They consider the death of a child a good riddance; and if the child is likely to die any way, it seems only good business to make something out of its death. To what extent this infantile insurance is responsible for this cruelty and neglect it is very hard to determine. In some cases reported to the authorities the evidence is strong that children have been done to death as a business enterprise.

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[1] London: Eyre and Spottiswoode, [illegible], pp. xv, [illegible]

Is there anything at all similar to this with us? The lives of children, especially among our foreign born population, are not infrequently insured, but it is very uncommon to hear of a case in which a death has been hastened in order to get the insurance. Such insurance is generally for burial purposes only, and the whole amount goes to the undertaker. The children, or for that matter adults as well, are often not insured until they show signs of ill health. When they appear sick the parents or friends get a policy in some company not requiring a medical examination, but making some provision that the insured shall not die of phthisis or other long standing disease within a certain time. If the diagnostic or prognostic powers of the applicants were better, such companies would not make much money. Such insurance for burial purposes only, is entirely a different matter from the infantile insurance in England, where the fact that a child is insured increases the advantages of having it out of the way, and influences its treatment by its parents.

MEDICAL NOTES.

Harvard Medical School. — The Harvard Medical School has an entering class this year of somewhat over ninety — a falling off of about twenty from the number last year.

The Index Medicus. — According to a count made by the *Medical News* there are eleven hundred and nineteen medical journals and transactions regularly indexed in the Index Medicus. Besides these there are also the semi-scientific and commercial papers catalogued. Certainly medical ideas do not want for means of utterance.

The Cholera. — Cholera reports continue to be favorable. In England no new cases have been reported since September 20th. In Hamburg the epidemic is rapidly subsiding there being but two or three new cases each day. There have been one hundred and twenty cases with fifty-nine deaths so far. In Antwerp the disease is also declining, Palermo and Leghorn are still infected and eight or ten new cases occur daily. In Roumania and Russia the infection is still widespread and shows no marked subsidence, though the death-rate has not increased.

Faculty of the Army Medical School. — The following officers have been appointed as the faculty of the new Army Medical School established in Washington: Colonel Charles H. Alden, assistant surgeon general, U. S. A., president of the faculty, and lecturer on the duties of medical officers; Lieutenant-Colonel William H. Forwood, deputy surgeon-general, U. S. A., professor of military surgery; Major John S. Billings, surgeon, U. S. A., professor of military hygiene; Major Charles Smart, surgeon, U. S. A., professor of military medicine and director of the chemical laboratory; Captain Walter Reed, assistant surgeon, U. S. A., professor of clinical and sanitary microscopy and director of the pathological laboratory; Captain Julian M. Cabell, assistant surgeon, U. S. A., assistant to professor of military surgery and instructor in hospital corps drill. Instruction will be given in the Army Medical Museum, commencing on the first day of November.

Colorado Medical Library Association. — The physicians of Denver, Col., have formed a Medical Library Association for the advantage of physicians in that city and throughout the State. Owing to their remote position they have small opportunity to enlarge their collection of books, and request societies and physicians who may be so inclined to send copies of their publications to the Secretary, Henry Sewall, M.D., in care of the Public Library, Denver.

The Influence of Albinism on the Eye. — Dr. George M. Gould is investigating the extent and nature of the influence of albinism upon the eyes, and requests any physician who has had albinotic patients to send him as exact information as possible as to the condition of the eyes in those cases. Blank forms indicating the particular knowledge desired will be sent upon application and necessary expenses incurred by correspondents for postage, etc., will be paid.

Patent Medicines in England. — The sale of patent medicines in England has but few restrictions provided the vendor takes out a license for his trade. The annual receipts of the government from the issue of these licenses is nearly a million dollars.

The Persistence of the Contagion of Diphtheria. — At a recent meeting of the Medical Society of Lyon, Moncel reported the result of fifty cases of convalescence from diphtheria which were examined for the Löffler bacillus. In all cases of a lingering post-diphtheritic coryza there were bacilli found in the nasal mucous membrane, in some instances for as long as fifty-three days.

The Cranium of Sophocles. — A skull has been discovered at Deceleia which is believed to be the skull of Sophocles, but as several sceptics have doubted its genuineness, it has been referred to Professor Virchow, who will carefully examine it and decide if it is really Sophocles' or merely somebody that looked like him.

NEW YORK.

More Board of Health Physicians. — At a meeting of the Board of Estimate and Apportionment, held September 28th, an appropriation of $8,000 was made to the Board of Health for the employment of fifteen extra physicians for the free vaccinating corps. At the same meeting $539,248 was voted for public-school improvements, and $50,000 for the further purification of the Croton water-shed.

Yellow Fever Relief. — The steamship *Algiers* has been fitted up to carry provisions and other supplies to the yellow fever sufferers at Brunswick, Ga., and Dr. A. N. Bell, editor of the *Sanitarian*, is to act as medical officer of the expedition.

Hereditary Polydactylia. — Charles Hodge, a lad thirteen years old, of Newark, N. J., who was born with twelve fingers and fourteen toes, was recently relieved of the extra members at St. Barnabas Hospital. It is stated that this superfluity of fingers and toes is a hereditary characteristic on the maternal side, running back for several generations, and that among the family relics is a bottle of alcohol in which are preserved a number of fingers and toes removed from various ancestors.

Mortality. — The bulletin of the State Board of Health for August, shows that during that month 11,037 deaths were reported in the State, which represents an annual death-rate of 21.20 per thousand of the estimated population. For 150 cities, villages and populous towns having a population of 4,785,000 it is 22.75, and for the rural portion of the State, 15.40. There was an increased mortality in the Mohawk Valley and in the western districts of the State, and this was chiefly due to diarrhœal diseases, which were less prevalent than usual in New York city and the eastern districts.

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Miscellany.

MR. ERNEST HART ON THE "CODE."

The address of Mr. Ernest Hart at the Pan-American Congress was devoted chiefly to the consideration of the necessity for a code of ethics among physicians. Quoting Sir Astley Cooper's remark that success in the practice of medicine depended upon "the physician's knowledge, his continuous industry and his moral character," he said they might form a very adequate summary of the conduct, private dignity and etiquette of medical men in relation to public affairs.

"Just at present both in England and in this country the question is frequently asked whether it is necessary to add to the simple rules of ethics which direct the conduct of gentlemen a detailed code of medical etiquette and ethics. I think it is clear that never at any time, if there were a necessity for such a code, could that necessity be nearer or more apparent than at the present moment. Under the stress of a developing civilization, with the temptations induced by the enormous facilities for advertisement and the profit to tempt the medical man from the ancient bond of modesty and diffidence, there is now the strongest reason for fortifying every professional man against the inroads of modern temptations, by a code so precise, by deductions so exact, so comprehensive, and so far-reaching that he shall never be overcome by such temptations, but shall be able to know at once, and under all circumstances, what is his duty, what is the rule of his profession in any one particular case in which he may be tempted.

"Such a code as this does exist, and upon a logical and strong basis, for the benefit of the public as much if not more than for the benefit of the profession. It is not a trade-union business for the benefit of a private class interest, but is, on the contrary, a movement for the interests of the public in general far more than for the medical profession.

"We cannot in the face of past experience and medical precedents safely cast aside a code of ethics which has been carefully and deliberately reached regarding the especial application of ethical principles to medical life. For example, a medical man is prohibited from consultation with quacks. Now Dr. Johnson's definition of the word is, '*Quack — a boastful pretender to arts which he does not understand: a boasting pretender to physic: one who proclaims his own medical abilities in public places; an artful tricking practitioner in physics.*' Thus, there is no distinction between the quacks who have medical degrees and the quacks who have not. Moreover, no respectable physician should advertise. That is a method of the quack. Advertisments in any form, whether in the way of an interview by a representative of the secular press, or by published letter, by the description or criticism of some new alleged system of treatment, or by divulging the secrets of the sick-room are in direct contravention of medical etiquette, and deserve the scorn and reprobation of every honorable person as well as every honorable medical man. For a medical man to possess or profit by any secret remedy is not only an offence against professional morality, but is a source of public danger as well. The physician owes his knowledge as well as his capacity for practising medicine to the open communications of bygone practitioners, and a new treatment, drug, or medical dogma, is like a doctrine, dogma, or deduction in theology, both are alike the common birthright of humanity, and any man who for profit keeps as a secret a new treatment or a new doctrine is a traitor not only to his profession but to all humanity. The physician who trades in or palters with secret remedies is untrue to his obligations, unfaithful to the world, a shame to himself, and a dishonor to his calling. Nor can the alleged value of any so-called secret remedy be held to condone such an offence."

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THE MADRID ACADEMY OF MEDICINE PRIZES.

The Academy of Medicine, of Madrid, has offered for the year 1894–5 two prizes open to public competition: The Academy Prize of three hundred dollars, a gold medal and the diploma of a corresponding member of the Academy, for the best essay on the "Treatment of the Different Clinical Forms, Accidents and Complications of Diabetes, based upon the Writer's Observations." The essay is to be written in Spanish or Latin. The Alvarez Alcala Prize of one hundred and fifty dollars, and corresponding membership in the Academy. Subject: "Surgical Intervention in Intestinal Obstruction." The essay to be written in Spanish, French or Latin.

The essays must be in the Secretary's possession by the first of May, 1894.

BAGDAD PHARMACY.

A correspondent of the *Pacific Medical Journal* gives the following account of the attractive pharmacy of Bagdad: "The practice of medicine is in a degraded state, and patients are constantly bargaining with the physician for a cure, and refuse to pay for advice pure and simple or for an examination, no matter how much skill or time it may involve. When a wealthy person is taken ill all the doctors and magicians in the city are sent for an hour or two apart, and without each other's knowledge, and their advice is followed or not, as it suits the fancy of the women neighbors, who always try to pump the doctor by fair means and foul. If a prescription is sent to the drug store it will probably be put up in an old, unwashed cod-liver-oil bottle that has lain perhaps for months in some dirty corner, and then an old rag and some paper is made to do service as cork. This is not overdrawn. Sometimes the prescription may be put up in a cup without any cover at all. The percentage-on-prescription system has here been developed and refined as nowhere else. There are benevolent societies whose secretary receives as salary a certain amount on every prescription he has to settle for, and then he and the doctor agree that a new prescription shall be written for every dose!"

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LIGATURE OF THE INTERNAL ILIAC ARTERIES FOR PROSTATIC ENLARGEMENT.

Acting upon the analogy offered by the diminution in size of mammary and uterine myomata after diminishing their local blood-supply, Bier,[1] of Kiel, undertook a similar treatment in cases of enlarged prostates. By far the larger part of the blood-supply to the prostate gland comes from the internal iliac arteries. These are most successfully ligated just after they leave the common iliac trunks.

The extra-peritoneal method was found the surest, and in well-etherized patients no harder than the transperitoneal operation with its extra danger. Even in cases where both arteries are to be ligated, Bier advises bilateral incisions rather than the median laparotomy. His incision is made about two fingers' breadth above Poupart's ligament and extends in a curved direction upwards toward the ribs, the convexity being about three fingers' breadth inside of the anterior superior spine of the ileum. The parietes are divided to the peritoneum, and after all bleeding is stopped, this is peeled away from the wall of the pelvis till the artery is reached. It is essential to have the pelvis well elevated. Owing to the free anastamoses in this region no circulatory disturbance was noticed in any case.

The readiness with which such wounds as these heal, and the possibility of avoiding sepsis are greatly to the advantage of this treatment over direct operation upon the prostate. The cases reported certainly show that a measure of relief is to be expected. The patients, aged from sixty to sixty-nine, all presented typical cases of prostatic enlargement, frequent difficult micturition, residual urine, purulent cystitis and palpably enlarged glands. After the operation, the size of the prostate steadily diminished, in one case from the size of a hen's egg to the normal, inside of four months. Another case, in which catheterization had been necessary and the gland so large that in digital examination by the rectum the upper border could just be reached, presented the following condition sixty-four days later. "The patient passes all his urine himself and without delay at desire. The upper border of the prostate is now easily passed without ether. The urethra is now only twenty-two centimetres long. Although there is considerable enlargement still, and the patient is obliged to pass water several times each night, there is an undoubted diminution in size of the gland, and the residual urine has steadily diminished in amount from one hundred and fifty cubic centimetres to between thirty and forty." One case proved fatal from peritonitis, but had already shown an improvement in the urinary symptoms, not requiring catheterization as before. The autopsy showed a glandular hypertrophy of both halves, but less upon the left, the only side operated upon. Injection of the right hypo-gastric artery caused much less filling on the left side than on the right.

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OBITUARY. — DAVID SYLVESTER FOGG, M.D.

Dr. David Sylvester Fogg, who died of chronic myelitis, August 29th, aged seventy-two years and five months, was born in Meredith, N. H., March 30, 1821. His parents were well-to-do, energetic people, his father and grandfather patriotic, and identified with the military defence of the country. Dr. Fogg obtained his education in Holmes Plymouth Academy and in Dartmouth College. He studied medicine with Dr. Josiah Crosby, of Manchester, N. H., and obtained his degree of Doctor of Medicine from Dartmouth Medical School in 1845. In 1846 he located in South Dedham, and commenced the practice of medicine, which extended through the village and reached into the surrounding towns. He soon became noted for his skill, and was often called in consultation.

He was a member of the Norfolk County Medical Society and of the Massachusetts Medical Society and had been several times elected a councillor of the latter body. He was also a member of the American Medical Association.

In 1861 he was a volunteer surgeon in the Peninsular Campaign, under General McClellan. On the organization of the Board of Enrolment he was appointed by President Lincoln, a surgeon of the Board for the Seventh Massachusetts Division, head-quarters at Concord, Mass. After he had held that office for three years he then resumed his practice in Norwood. He was a friend to the public schools, and in 1878 was a member of the Dedham School Committee, which position he had occupied once before. He defended the schools in town meetings, and was always in favor of a liberal policy for their support, and an advocate of advanced methods of teaching. He was not a frequent speaker, but always spoke to the point, with practical good sense, supporting needed improvements and favoring municipal economy.

In 1847 he married Mary B., youngest daughter of Rev. Thomas W. Tucker, who was then stationed as pastor of the Methodist Episcopal Church, at Dorchester, Mass. Eight children were born of this marriage, six of whom, including his son Dr. Irving S. Fogg, with the widow, survive him.

Dr. Fogg was of a social disposition, a good neighbor, and during his long professional career made many warm friends. His stately form and commanding presence will long be missed. He was an early member of Orient Lodge, F. & A. M., and at his funeral that order took charge of the remains after the close of the services at the house. His professional brother Dr. John P. Maynard, of Dedham, attended Dr. Fogg in his last illness; and his friend Dr. A. P. Clarke, of Cambridge, also visited him.

A. P. C.

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[1] Wiener Klinische Wochenschrift, No. 32, 1893.

OBITUARY. — THOMAS F. SHERMAN, M.D.

Dr. Thomas F. Sherman died in Boston, September 26th, at the age of thirty-seven, after a long illness.

On leaving the Harvard Medical School he served for a year as house physician at the Massachusetts General Hospital, and then immediately entered upon private practice. A man of great tact and kindly disposition with a keen sense of humor, quick to see through shams, patient in investigation and thoroughly loyal to patients and associates, his death was a loss to the community. He had ambition, but of a kind that was ready to push itself forward by means of work well done, and by that alone. Not a ready writer, and anxious to digest his work before giving it to the public, he had published little, but he had carefully collected notes which would in time have led to publication. A paper of his in the coming Report of the Children's Hospital is highly spoken of. In his capacity of assistant in the Harvard Medical School, he had proved himself capable of giving instruction, and he was much liked by the students. He had made an unusually efficient secretary for the Society for Medical Observation, and while not taking part in debate as often as some members, yet he was commonly present, and when he did speak it was generally to say something that he had well considered. Appreciation for his services was shown both by the Children's Hospital, and by the Hartford Life and Annuity Insurance Co., for which he was local examiner, by their declining to accept his resignation, preferring while his life lasted to allow his work to be done by substitutes.

Although in no sense a politician, his public spirit led him to take a warm interest in the political questions of the day and to have a reason for his vote. He was a Freemason and had held office in the order.

A hard worker, Dr Sherman made the mistake of doing seven years' continuous work, broken only by an annual week at the camp of the militia battalion of which he was hospital steward. To remonstrances from relatives, the answer was always that while he was young was the time for work. In later life he would have long vacations. By this unremitting labor he had secured some fine professional appointments, and the basis of a good practice. During the winter of 1891–92 some of his associates observed that his work was done with not quite the old vigor, but such was the man's persistence that when the break really came, it came once for all. During the last year and more he was making a gallant fight for life though himself of opinion that the end was inevitable. He was not married.

Dr. Sherman was so unassuming that it took one a long time to appreciate all the fine points of his character, but he was a man who will long be missed by those who were so fortunate as to know him well.

METEOROLOGICAL RECORD,

For the week ending September 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	Weather.* 8.00 A. M.	Weather.* 8.00 P. M.	Rainfall in inches.
S. 17	29.83	[illegible]	[illegible]	[illegible]	[illegible]	77	[illegible]	W.	W.	12	13	[illegible]	[illegible]	[illegible]
M. 18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	12	[illegible]	[illegible]	[illegible]	
T. 19	29.75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	W.	11	[illegible]	[illegible]	[illegible]	[illegible]
W. 20	[illegible]	[illegible]	71	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	[illegible]	13	[illegible]	[illegible]	
T. 21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.	12	[illegible]	[illegible]	[illegible]	
F. 22	29.92	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	[illegible]	14	[illegible]	[illegible]	
S. 23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	S.W.	5	11	[illegible]	[illegible]	
☞														[illegible]

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 23, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Percentage of deaths from Consumption.	Percentage of deaths from Diarrhœal diseases.	Percentage of deaths from Typhoid fever.	Percentage of deaths from Diphtheria and croup.
New York . .	[illegible]	702	331	22.12	9.46	11.62	[illegible]	[illegible]
Chicago . . .	1,438,000	452	[illegible]	28.60	9.02	15.62	[illegible]	[illegible]
Philadelphia .	1,115,562	337	145	17.98	9.86	[illegible]	[illegible]	[illegible]
Brooklyn . .	[illegible]	[illegible]	[illegible]	[illegible]	8.00	16.50	[illegible]	[illegible]
St. Louis . . .	[illegible]	—	—	—	—	—	—	—
Boston . . .	[illegible]	197	81	18.36	14.28	10.71	[illegible]	2.55
Baltimore . .	[illegible]	—	—	—	—	—	—	—
Washington .	308,431	[illegible]	[illegible]	19.92	14.11	7.47	[illegible]	[illegible]
Cincinnati . .	305,000	[illegible]	[illegible]	18.24	11.40	[illegible]	[illegible]	4.56
Cleveland . .	290,000	[illegible]	[illegible]	[illegible]	[illegible]	15.68	4.46	[illegible]
Pittsburg . .	263,709	[illegible]	51	41.94	7.42	13.78	7.42	3.18
Milwaukee . .	[illegible]	[illegible]	[illegible]	33.33	6.86	22.54	[illegible]	[illegible]
Nashville . .	87,754	[illegible]	17	[illegible]	2.86	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	21	[illegible]	—	—	—	—	—
Worcester . .	[illegible]	26	15	[illegible]	3.85	19.25	3.85	3.85
Fall River . .	[illegible]	[illegible]	[illegible]	32.64	6.12	[illegible]	[illegible]	—
Lowell . . .	87,191	45	15	8.88	11.11		2.22	2.22
Cambridge . .	[illegible]	[illegible]	[illegible]	30.45	21.75	17.40	—	4.35
Lynn	62,656	25	[illegible]	21.00	16.00	4.00	[illegible]	4.00
Springfield . .	48,684	18	7	22.22	27.77	22.22	—	—
Lawrence . .	[illegible]	—	—	—	—	—	—	—
New Bedford .	[illegible]	19	15	57.86	—	52.60	—	—
Holyoke . . .	[illegible]	[illegible]	8	52.92	11.76	[illegible]		17.64
Salem	32,233	14	[illegible]	[illegible]	—	—	21.42	7.14
Brockton . .	32,140	4	[illegible]	—	—	—	—	—
Haverhill . .	31,396	12	[illegible]	16.66	25.00	—	[illegible]	8.33
Chelsea . . .	30,264	[illegible]	1	—	20.00	—	—	
Malden . . .	[illegible]	[illegible]		[illegible]	—	33.33		—
Newton . . .	27,556			—	—	—	—	—
Fitchburg . .	27,146	2	2		—	—	—	—
Taunton . . .	[illegible]	11	[illegible]	[illegible]	—	18.18	—	—
Gloucester . .	[illegible]	10	—	10.00	40.00	—	—	—
Waltham . .	[illegible]	5	1	—	20.00	—	—	—
Quincy . . .	19,612	[illegible]	2	40.00		40.00		—
Pittsfield . .	18,802	[illegible]	[illegible]	[illegible]		[illegible]	—	—
Everett . . .	16,585	[illegible]	1	33.33	—	—	—	—
Northampton .	16,331	[illegible]	1	33.33	16.66	33.33		—
Newburyport .	14,073	7	2		14.28	—	—	—
Amesbury . .	10,920	2	1	[illegible]		50.50	—	—

Deaths reported 2,973: under five years of age 1,400; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 711, diarrhœal diseases [illegible], consumption [illegible], acute lung diseases 206, diphtheria and croup [illegible], typhoid fever [illegible], whooping-cough 35, scarlet fever 28, cerebro-spinal meningitis 17, malarial fever 7, measles 6, erysipelas 3, small-pox 3.

From whooping-cough New York 10, Chicago, 7, Philadelphia 6, Pittsburg 4, Brooklyn 3, Washington, Cincinnati, Cleveland, Nashville and Lynn 1 each. From scarlet fever Pittsburg 10, New York and Chicago 4 each, Philadelphia and Lowell 2 each, Boston, Milwaukee, Cambridge, New Bedford, Everett and Woburn 1 each. From cerebro-spinal meningitis Chicago 6, New York and Washington 2 each, Philadelphia, Brooklyn, Boston, Cleveland, Cambridge, Lynn and Gloucester 1 each. From malarial fever New York, Brooklyn and Nashville 2 each, Philadelphia 1. From measles New York 3, Chicago, Washington and Pittsburg 1 each. From small-pox New York 3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending September 16th, the death-rate was 19.8. Deaths reported 3,919; diarrhœa 518, whooping-cough 89, diphtheria 83, fever 79, scarlet fever 43, measles 32, small-pox (Birmingham and Bradford 2 each, London, Leicester and Oldham 1 each) 7.

The death-rates ranged from 11.2 in Derby to 30.1 in Burnley; Birmingham 21.7, Bradford 24.7, Bristol 19.2, Croydon 14.8, Hull 26.0, Leeds 25.7, Leicester 16.4, Liverpool 25.8, London 17.5, Manchester 20.8, Newcastle-on-Tyne 28.6, Nottingham 18.7, Portsmouth 20.3, Sheffield 23.3, Sunderland 19.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 23, 1893, TO SEPTEMBER 29, 1893.

By direction of the Secretary of War, leave of absence for four months, on surgeon's certificate of disability, is granted **Lieut.-Colonel Francis L. Town**, deputy surgeon-general, U. S. A.

First-Lieut. Charles F. Kieffer, assistant surgeon, is relieved from further duty at Fort Meade, South Dakota, and from temporary duty at Fort Yellowstone, Wyoming, and will report to commanding officer at Fort Assinniboine, Montana, for duty.

First-Lieut. Wm. F. Lewis, assistant surgeon, will, upon being relieved from duty at Fort Assinniboine, Montana, by **First-Lieut. Kieffer**, report to commanding officer, Fort Apache, Arizona, for duty.

First-Lieut. Benjamin Brooke, assistant surgeon, will proceed at once from Fort Leavenworth, Kansas, to Fort Brady, Michigan, for temporary duty during the absence on leave of Assistant Surgeon **Paul Clendenin**, U. S. A.

Leave of absence for one month, to take effect upon the arrival of Assistant Surgeon **Benjamin Brooke**, is granted **Captain Paul Clendenin**, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIX WEEKS ENDING SEPTEMBER 16, 1893.

Murray, R. D., surgeon. To proceed to Pensacola, Fla., for temporary duty. August 10, 1893. To rejoin station. August 18, 1893. To proceed to Brunswick, Ga., for temporary duty. September 14, 1893.

Bailhache, P. H., surgeon. To assume charge of inspection of immigrants. August 14, 1893. Detailed as chairman, Board for Physical Examination of keepers of Life Saving Stations August 18, 1893. Relieved from duty as inspector of immigrants. August 22, 1893. Detailed as chairman, Board for Physical Examination of Officers, Revenue Marine Service. September 12, 1893.

Purviance, George, surgeon. To report at Bureau for temporary duty. August 6 and 10, 1893. Detailed as chairman, Board for Physical Examination of Surgeon John Vansant. August 28, 1893.

Vansant, John, surgeon. Ordered before Board for Physical Examination. August 31, 1893.

Hutton, W. H. H., surgeon. To report at Brunswick. August 10, 1893. To proceed to Cape Charles Quarantine as inspector. August 12, 1893. To proceed to Brunswick, Ga., for temporary duty. August 12, 1893. To rejoin station, Detroit, Mich. September 10, 1893.

Hamilton, John B., surgeon. Granted leave of absence for four days. August 16, 1893. Granted leave of absence for ten days. August 29, 1893.

Sawtelle, H. W., surgeon. Detailed as member, Board for Physical Examination, Life Saving Station. August 18, 1893. Detailed as member, Board for Physical Examination of Passed Assistant Surgeon H. T. Goodwin. August 22, 1893. Detailed as member, Board for Physical Examination, officer Revenue Marine Service. September 12, 1893.

Austen, H. W., surgeon. Detailed as recorder, Board for Physical Examination of Surgeon John Vansant. August 28, 1893. To represent the Service at meeting, Pan-American Medical Congress. September 5, 1893.

Gassaway, J. M., surgeon. To inspect local quarantine at Pascagoula, Miss. August 23, 1893.

Mead, F. W., surgeon. To proceed to Chicago, Ill., for temporary duty. August 9, 1893.

Carter, H. R., surgeon. To proceed to Fernandina, Fla., to inspect quarantine and return to Bureau. August 7, 1893. To proceed to Pensacola, Fla. August 10, 1893. To proceed to Brunswick, Ga., for temporary duty. August 12, 1893. To report at Bureau. August 31, 1893. To represent the Service at Pan-American Medical Congress. September 5, 1893. To proceed to Philadelphia, Penn., and Reedy Island Quarantine. September 9, 1893. To proceed to Cape Charles Quarantine and assume command. September 11, 1893. To report at Bureau for temporary duty. September 13, 1893.

Wheeler, W. A., surgeon. Detailed for duty at Camp Loi August 14, 1893. To rejoin station. August 22, 1893. Detailed as recorder, Board for Physical Examination, Passed Assistant Surgeon H. T. Goodwin. August 22, 1893.

Carmichael, D. A., passed assistant surgeon. Granted leave of absence for thirty days. August 16, 1893.

Peckham, C. T., passed assistant surgeon. Granted leave of absence for twenty days. August 10, 1893.

Glennan, A. H., passed assistant surgeon. To proceed to Reedy Island Quarantine for temporary duty. August 30, 1893.

Magruder, G. M., passed assistant surgeon. To proceed to Pensacola, Fla., as inspector. August 10, 1893. To proceed to Brunswick, Ga., for temporary duty. August 23, 1893. To proceed to Beaufort, S. C., as inspector. September 9, 1893.

Kinyoun, J. J., passed assistant surgeon. Detailed as inspector, New York Quarantine. August 12, 1893. Detailed as member, Board for Physical Examination of Passed Assistant Surgeon H. T. Goodwin. August 26, 1893.

Goodwin, H. T., passed assistant surgeon. Granted leave of absence for thirty days. August 10, 1893. To proceed to Louisville, Ky., for duty. August 15, 1893. Ordered to appear for examination as to physical condition. August 22, 1893.

Vaughan, G. T., passed assistant surgeon. To represent Service at meeting of Pan-American Medical Congress. September 5, 1893.

Geddings, H. D., passed assistant surgeon. To report at Bureau for temporary duty. September 13, 1893. To proceed to Brunswick, Ga., for temporary duty as inspector. September 15, 1893.

Cafer, L. E., assistant surgeon. To proceed to Savannah, Ga., for duty. August 25, 1893.

Decker, C. E., assistant surgeon. To proceed to San Francisco Quarantine for temporary duty. September 3, 1893.

Nydegger, J. A., assistant surgeon. To proceed to Jersey City, N. J., for temporary duty. September 2, 1893. To rejoin station. September 9, 1893.

Oakley, J. H., assistant surgeon. To proceed to Quebec, Can., for duty. August 26, 1893.

Norman Seaton, assistant surgeon, To proceed to New York, N. Y., for temporary duty. August 18, 1893. To rejoin station. August 23, 1893. To proceed to Jersey City, N. J., for temporary duty. September 3, 1893. To rejoin station. September 9, 1893.

Sprague, E. K., assistant surgeon. To proceed to Cairo, Ill., for temporary duty. August 26, 1893.

APPOINTMENTS.

William Sturgis Bigelow, M D., of Boston, has been appointed by Governor Russell, a trustee of the Massachusetts General Hospital, as a successor to the late Frederick L. Ames.

W. R. **Stokes**, M.D., has been appointed assistant to the Pathologist at the Boston City Hospital.

RESIGNATIONS.

G. H. **Tilden**, M.D., has resigned the position of Physician for Diseases of the Skin to Out-Patients, and C. R. **Burr**. M.D., that of Assistant to the Physician for Diseases of the Nervous System at the Boston City Hospital.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, October 9, 1893, at 8 o'clock, P. M.

Dr. George Haven: "Some Cases of Laparotomy."

Dr. Joel E. Goldthwait: "The Treatment of Hallux Valgus."

Pathological specimens.

John T. Bowen, M.D., *Secretary.*

RECENT DEATH.

Thomas Foster Sherman, M.D., M.M.S.S., died in Boston, September 26th, aged thirty-seven years. He was a physician to the Boston Dispensary and to the Home for Little Wanderers, assistant physician to the Children's Hospital and assistant Instructor in Diseases of Children in the Harvard Medical School.

BOOKS AND PAMPHLETS RECEIVED.

The Era Key to the U. S. P., a Complete List of the Drugs and Preparations of the United States Pharmacopœia, Revision of 1890–3, giving official titles, common names and synonyms of the drugs, chemicals and preparations of the Pharmacopœia, with doses in apothecaries weights and measures with equivalents in metric terms. Compiled by the Pharmaceutical Era. Detroit, Mich.: D. O. Haynes & Co. 1893.

The Theory and Practice of Medicine Prepared for Students and Practitioners. By James T. Whittaker, M.D., LL.D., Professor of the Theory and Practice of Medicine in the Medical College of Ohio; Lecturer on Clinical Medicine at the Good Samaritan Hospital; Fellow of the College of Physicians of Philadelphia; Member of the Association of American Physicians, of the American Academy of Medicine and of the American Medical Association. With a chromo-lithographic plate and three hundred engravings. New York: William Wood & Co.

A Dictionary of Medical Science; Containing a full explanation of the various subjects and terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Pathology, Surgery, Bacteriology, Ophthalmology, Otology, Laryngology, Dermatology, Gynecology, Obstetrics, Pediatrics, Medical Jurisprudence and Dentistry, etc. By Robley Dunglison, M.D., LL.D., late Professor of Institutes of Medicine in the Jefferson Medical College of Philadelphia. Edited by Richard J. Dunglison, A.M., M.D. New (twenty-first) edition, thoroughly revised, greatly enlarged and improved, with the pronounciation, accentuation and derivation of the terms. In one magnificent imperial octavo volume of 1181 pages. Philadelphia: Lea Brothers & Co. 1893.

Lectures.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XVII.

FOREIGN SUBSTANCES IN THE THROAT.

WHERE do they go? Most likely to go into the alimentary canal. Occasionally they pass into the trachea. What different symptoms do they produce according to where they happen to lodge? In other words, what is the differentiated diagnosis between a suspicion of a foreign substance in the œsophagus or in the trachea?

If in the œsophagus, we naturally have great difficulty and reluctance in swallowing. Moreover, there is rapid increase in the secretion of all the fluids which assist in mastication and digestion in the mouth — great flow of saliva and mucus, that is quite common. These effects are not produced if the foreign substance has gone into the air-passages. If in the air-passages, there is no difficulty in swallowing. There is not an increase in salivation. If the foreign substance is in the œsophagus, it catches on one side or the other. The patient always inclines the head sideways and forwards to relieve the tension of the œsophagus; so that the characteristic position is a little like that of wry neck, where a foreign substance is in the œsophagus. Stabbing pain on swallowing, reluctance to swallow, soon followed by inability to swallow; if inability to swallow, the saliva constantly druling — that comes next in the stage. Soon after that, œdema of the throat, outside, under the skin; noticeable swelling and puffiness around the site of the foreign body. Peculiar position of carrying the head, salivation, inability to swallow and œdema — these seem to be the most marked symptoms when a foreign substance is in the œsophagus.

Now, on the other hand, if it has gone into the trachea, at first it produces intense symptoms of spasmodic croup. The foreign substance rides up and down beneath the vocal cords with each inspiration and expiration, strikes against the bottom of the glottis; produces irritation, spasmodic closure; and hence we have all the phenomena of spasmodic croup. The child appears to be suffocating. That passes off in a little while. The foreign substance drops to the bifurcation of the trachea, usually, and rests there; and beyond a sibilant, uneasy sort of breathing, there is not much indication of its presence. The characteristic position of the patient is rather upright and backwards, as they hold the head in croup, so as to lengthen the trachea, and give the best access of air. If there is any characteristic position, it is rather with the neck extended. There is no difficulty in swallowing; no salivation. If the foreign body remains, speedily bronchial secretion is excited, and necessity to expectorate comes on. That requires cough. Cough dislodges the foreign substance, drives it up and down against the vocal cords. There is then a repetition of the paroxysm of croup, which subsides again. I was once called to a case where a foreign substance was really the cause of the trouble, but the child was supposed to have the laryngeal stridor of spasmodic croup and nothing else, for several days and nights. Next positive bronchitis comes on; sometimes broncho-pneumonia. The child grows quite sick; goes through an attack of slight pulmonary inflammation, and then there is left chronic bronchitis, with frequent attacks of cough; every attack of cough bringing on an attack of spasm of the glottis. We have, then, if a foreign body has been some time in the trachea, the symptoms of chronic bronchitis added to those of spasm of the glottis; and the whole phenomena are somewhat like those of whooping-cough, for which they may be mistaken unless a careful observation is made. Fortunately, the child, if old enough, almost always says that it has swallowed something; or if not old enough, the majority of them are watched and seen to swallow something.

Once in a while one sees a case where the symptoms are mixed, and where it was hard to say where the foreign body has lodged. Subsequently, however, after operating and extracting the foreign body its position explains why its phenomena were so varied. When the foreign substance happens to get caught in the gullet, just behind the arytenoid cartilages, it provokes the fibres of the pneumogastric, and brings on spasmodic symptoms and difficulty of breathing; but it very rarely catches there. If you see a bi-vertical section made of the head and alimentary canal, you will find that the pharynx is a funnel-shaped cavity tapering to a point near the œsophagus. This point is just behind the cricoid cartilages; and at this point the constrictor fibres cease and the circular fibres begin. At this point there is a sort of purse-like constriction; and that forms a little ledge; and it is on that ledge that the foreign substance, if swallowed into the alimentary canal, almost inevitably catches; consequently, if the foreign substance has got into the throat, passes beyond the voluntary control of the palatine arches and cannot pass down, in nine cases out of ten it will lodge on this little ledge, just opposite the cricoid cartilage, and preferably on the left side, because the œsophagus inclines to the left in its passage down into the thorax. In this particular case I spoke of, the foreign substance did not go so far; and irritating the back of the larynx and arytenoid cartilages produced the symptoms of difficulty of swallowing and difficulty of breathing; but ordinarily the substance that is lodged at the commencement of the œsophagus produces only the symptom of difficulty of swallowing.

There is another class of cases in which not only difficulty of breathing is produced by a foreign body in the air-passages or in the œsophagus, but even suffocation and death. Such is the case in which a bolus of soft food is swallowed hastily, drops through the pharynx, lodges on this ledge, and there is too big to pass, and necessarily compresses the back of the trachea. The back of the trachea is devoid of cartilage. It is quite conceivable that a foreign body may compress there and produce death by suffocation. This is the ordinary way in which deaths are occasionally reported as occurring while the patient is eating. The patient is eating carelessly some large mouthful of soft substance; jumps up; throws up the hands; falls to the floor; turns blue; ceases to breathe, and dies. It is due to a bolus lodged, not in the trachea, but in the œsophagus, and pressing in on the back of the trachea. If assistance can be efficiently rendered at the moment, and a probang were at hand, so that the substance could be pushed down a little further, it would drop lower down into the œsophagus, and the patient would be saved.

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[1] These are [illegible] lectures printed from [illegible] [illegible] They were delivered to the third [illegible] part of the regular course.

The cases where foreign substances are inhaled, so to speak, into the air-passages, and are large enough to produce death by suffocation must be excessively rare, if they exist. In proof of that is the fact that so many foreign substances have been extracted from the trachea which have not caused death at the time of their first being drawn in; notably coins as large as the English sovereign, copper pieces and silver pieces have been carried into the trachea, producing spasm, but not immediate death.

So much for the essentials of diagnosis.

Now, in order to complete this part of the subject, we will follow up a substance supposed to have gone into the œsophagus, before taking the other class which have gone into the trachea. Most of them go down. A few of them lodge temporarily; and then after a few efforts, by swallowing a bolus of bread or drinking a draught of water, are swallowed.

Still another class are vomited up. The patient passes the finger down the throat and the tickling produces nausea, regurgitant action of the œsophagus comes on. The foreign substance is thrown up with the vomitus and the patient relieved. A considerable percentage of substances swallowed never get as far as the back of the cricoid cartilage, but lodge in the pharynx. Those are generally extracted through the mouth; many of them by the finger of the surgeon or physician when he arrives. The best way is to put a wedge between the teeth: put the finger in as far as possible to sweep around; and in very many cases bones, or fragments of meat containing bones in them, foreign substances like pins, hair-pins, shawl-pins put in the mouth by children, are readily detected, if they have not gone far beyond the palatine arch; and can generally be brought out by the finger, or reached by the finger, and extracted by the other hand with forceps. A large class of substances go into the œsophagus, lodge temporarily, but pass down and disappear from view; yet they give the patient the sensation and the belief that they are still in the œsophagus. That is the hysterical class of cases. They are more numerous, I think, than the real class of cases. Such a patient will come in and say he is quite sure he has a bone in the throat; that he got it in two to four days before, perhaps; and he is quite sure it is still there. You are quite sure that it is not there by the mildness of the symptoms; for no human being can tolerate a sharp substance in the œsophagus three days without producing intense local and constitutional symptoms. In such cases as these it is better, usually, to pass the bristle probang down gently, and then withdraw it. You find nothing. The moral effect is marked; and it needs only the effort of faith on their part to get them well.

Foreign substances which really lodge at the top of the œsophagus and do not become dislodged either upwards or downwards are then not very numerous; and when they are there they produce such a marked series of phenomena that there can be no mistake as to their presence. If then the patient with a history of having swallowed something he thinks has not passed, after two or three days presents the characteristic attitude, total inability to swallow, druling of saliva and especially commencing œdema of the neck, we feel that something must be done, at once, to relieve him.

Let us consider for a moment what takes place if they are not relieved. Numerous clinical histories have been collected, and quite a large series of experiments made on dogs, by inserting foreign substances into the throat and leaving them. These experiments have shown that the foreign-substance which remains beyond the third day almost always, if it remains unmoved, provokes abscess and eventual perforation of the wall of the œsophagus, and the various consequences that may follow; and a periœsophageal abscess may be behind the œsophagus, may be at the sides, may be in front. You will remember from the arrangement of the cervical fascia and the looseness of the tissues on which the pharynx, larynx and trachea glide in the action of swallowing, that there is really no barrier stretched across between the mediastina and the spaces of the neck; and if an abscess forms, there is nothing to prevent its gravitating down into the thorax and eventually penetrating the pleura; sometimes perforating the large vessels, and leading to death from hæmorrhage; frequently penetrating the air-passages and causing death by suffocation; and, in some rare cases, where the patient lives long enough, and the abscess forms behind the œsophagus, leading to denudation of the tissues over the bodies of the vertebræ, and positive caries of the spine itself. Usually, however, where the foreign substance remains long enough to provoke abscess, the case goes on to a fatal termination in the course of a week, or ten days; and autopsies have proved that such is the usual result, and such the destination of the foreign bodies. A foreign substance left in, means abscess; sometimes coming on in three or four days; and death taking place in one or two weeks, in the majority of patients.

What then shall be done? Extraction through the natural passages, through the mouth, is of course the first and most natural idea which would occur to one, and it has often been practised with entire success. Loops, snares, forceps and various devices are used to slip down into the œsophagus and to catch the foreign body and bring it up. The snares and nets have often brought up coin; the loops and forceps have often brought up substances like bone or pins. Great care and gentleness of course have to be used in manipulating and in extracting; for otherwise we shall push the edge or point of the foreign substance, if it happens to be sharp, through the walls of the œsophagus, and make that perforation which we dread. It is quite possible, also, to make a retropharyngeal abscess and perforation by the rough use of even a simple probang. So that in that class of substances which we judge it is safe to push down into the stomach, where there is a bolus of soft food or some vegetable substance, something not sharp and hard, or even a coin, such substances as that, we may push down by a probang with a sponge on the end; but we must use care and gentleness especially in that point behind the arytenoid cartilages where the pharynx first enters the œsophagus and lies like the finger of a glove; we must be especially careful there, or we may perforate the back of the alimentary canal, and lead to the retropharyngeal abscess, which would not have been caused by the foreign substance. One or two instances of death have occurred in that way. Pushing down or extracting through the natural passages is to be attempted, if the substance has not been there too long; but if the substance has lodged there as long as the third day, and œdema of the throat and threatening abscess is already imminent; it is questionable whether other methods had not better be used.

A few years ago there was revived and brought back from India an instrument which has been of the greatest assistance in extracting foreign bodies, called the bristle probang; it has a little collar of bristles attached to an ordinary probang sliding in an elastic catheter; when you pull out the probang, it forms a circle of bristles, and sweeps the œsophagus, and frequently brings out the foreign substance. Care must be taken to see that the bristles are all perfect; that their rounded ends are turned in. All parts of the instrument must be thoroughly examined and felt, at first, for fear that something may break off in the œsophagus in the struggle of the patient, while withdrawing the instrument. It is passed down gently until you are sure that it is near the cardiac orifice of the stomach; then unfold the little bristles, and withdraw slowly and gradually; and in very many cases the foreign substance is brought out entangled in the bristles. Blood almost always follows, whether the foreign substance is brought up or not. There is a little scraping of the mucous membrane which makes it bleed. The patient is sore for a few days afterwards, whether a foreign substance is there or not; but that soreness soon passes off. Carefully used it is a harmless instrument; and it is so reliable, that it has probably diminished the chances of any one doing an operation for a foreign body in the œsophagus, very much.

A substance may go into the throat of such a nature that you do not dare to push it down; and having been there so long that there is œdema and fever and other evidences of commencing infiltration, you do not feel it is safe to manipulate; what is left to do in order to save the patient's life? Obviously to try to remove it by external incision in the neck. This course would seem to be so plain, that it is quite surprising that although it was done early in the eighteenth century, it fell totally into disuse, and it was not until about 1842 or 1843 that it was revived again; and then with timidity; and not until about 1868, that it was done with frequency.

Up to 1868 I could collect only twenty cases; but at the present time I can find one hundred and fifty-nine; so that in the last twenty years one hundred and thirty operations have been done; and previous to the last twenty years, twenty operations had been done. This shows the immense progress the operation of œsophagotomy has made since it was found that it could be done safely. What was the bugbear in the way? People were doing quite as dangerous operations about the throat long ago. The older surgeons back to the time of Velpeau and the elder Dr. Warren did the most terrible operations with safety, and without ether. The reason was the belief that, if the œsophagus was opened, it would never heal; and that a fistula would be established which would forever render the life of the patient miserable; that fluids of all kinds would be constantly regurgitating through the wound in the throat, that an œsophageal fistula would be a permanent thing; and that, if the œsophagus was opened by the passage of substances and the movements of deglutition, healing would never be brought about. It was then the fear of a fistula, more than anything else, that interfered with the progress of the operation. Now, however, we know that that fear is groundless; and experience has demonstrated that wounds there will heal, and without sewing also; will fall together and heal by granulation, without sewing, perhaps faster than when they are sewed up; and a good many operators, of whom I am one, prefer to do the operation without sewing; and it heals exactly as well. So, also, in a number of cases in which I have opened the pharynx and made large openings into the throat about the region of the tonsils, the back of the pharynx and the arches of the palate, for various purposes, in no case has there remained a fistula; in no case have they been sewed up; and in many cases there has been no leak of food from the first moment after the operation was done; the action of the muscles of the pharynx closing the orifice. In the œsophageal cases I have had healing take place, always, in about two or three weeks, and never longer than four weeks. You need not imagine if you happen to incise to remove a foreign body that you will not have a temporary fistula, for you will. If you open the passage as low down as this, the first efforts at deglutition will be followed by the spouting out of large quantities of fluid through the opening. Gradually, as the patient goes on day after day, the quantity grows less and less; and from being a stream it becomes drops, and presently ceases altogether.

The fear of a fistula being dismissed, there is really nothing which should render the operation for extraction of foreign substances through the œsophagus any more difficult or dangerous than the ordinary operations of surgery. I say any more dangerous, with good proof, because in the cases I collected myself, a good while ago, the mortality of operated cases was just about 25 per cent.; and in the table which I have just taken from Dr. Ashurst, where there are 159 cases, there are 24 deaths, or scarcely one-sixth; so that it may be safely said that in the cases of foreign substances, where it is necessary to operate, three-fourths get well, and one-fourth, at the most, die. On the other hand, if let alone, it is almost sure that 100 per cent. will perish. Moreover in the twenty cases I collected it is instructive to know, that the four or five which terminated fatally after operation, had been deferred until abscess had already formed, and secondary absorptions, as proved by the autopsies, had taken place. As in the case of strangulated hernia, after fair attempts have been made to remove the foreign body by the natural passages, the sooner such an operation is done the safer for the patient; and the quicker the healing.

The operation is done by an incision similar to that for tying the carotid artery; and the sheath of the vessels is found but not opened; the edge of the sterno-mastoid, of course, is found, and then the vessels in their sheath; with the pneumogastric; — the sterno-mastoid is drawn outward and the larynx, myolohyoid muscle, and the long muscles attached to the larynx are drawn inwards; and gradually we pick our way down to the œsophagus. There is a place left by nature, near the cricoid cartilage, through which we may pick our way down until we may go to the pre-vertebral fascia, if we wish. The superior and inferior thyroid arteries and superior laryngeal nerve, and the recurrent or inferior laryngeal nerve, are the things to be looked out for. The first three are easy to look out for; the other is not. It is important not to wound the recurrent laryngeal nerve. It controls the sensibility of the larynx; and the impairment of its fibres is a certain injury to the vocal cords. If we avoid that wall of the œsophagus which lies near the trachea, we shall not wound the nerve; hence the incision should be made on the postero-lateral part of the œsophagus; that is, on the side and towards the rear of the œsophagus, and towards the vertebral column. It is very easy to get down there; then you put in the finger and see if you feel any foreign substance through the walls of the œsophagus. Usually you cannot. Then you find the only difficulty of the operation, and that is to open the œsophagus. The œsophagus is like the collapsed finger of a glove; lies in between the trachea and the vertebral column; nothing to stretch it. You are forced to introduce something as a guide. You pass a long catheter or stomach-tube into the mouth; into the pharynx and down past the point of incision. That brings the œsophagus up into view. You can then cut upon the posterior surface, upon the catheter, and make an opening, and then withdraw the catheter and enlarge the opening at your pleasure, and hold the sides open, and search for the foreign body. Sometimes it is opposite; sometimes below; sometimes above. It is extracted. There is no hæmorrhage. That is all, I think. There is nothing more to do, except that I should advise that the patient have absolutely nothing to eat for twenty-four hours; not a drop of any liquid or food. Thirst may be allayed by watery enemata thrown into the rectum; by allowing the patient to bathe his face and hands and wrists, which is a great comfort when feverish; and nothing should be given for the first twenty-four hours. Subsequently to that I have been in the habit of letting the patient swallow such liquids as were simple and homogenous; first water and then milk; or, if they wish it, strained beef-tea or broth. Iced milk is very grateful to the patient. The patient will sit up in bed and drink with perfect freedom and ease; get about one-third of the milk into the stomach, and the rest will pour out through the wound in a perfect jet. Why not give the nutriment the first twenty-four hours? To give the parts time to glue together a little, so that the fluids may not trickle down between the layers of the tissues and give rise to deep cervical abscess. Why not feed the patient with the stomach-tube instead of allowing anything to pass out through the wound? You may do so, if you wish. I have not thought it necessary. You must be aware, if you are going to feed the patient with the stomach-tube, that the tube has got to be passed below the level of the wound. Now this requires the stomach-tube to be passed a good ways. It requires you to steer it by the edges of the wound without irritating or making the parts bleed; and that has to be done three or four times in the twenty-four hours. I think this would interfere with the healing of the wound more than letting it alone. Some operators do one way, and some the other.

The essential thing is to make the diagnosis; do not wait too long. Get down to the œsophagus; stretch it, and cut in on the posterior side; extract the foreign substance; and, if the case has not been suffering too long, it will recover, almost certainly; at any rate, in three-fourths of the cases. The tolerance of nature in healing these cases is very remarkable. That was well instanced in a case of mine, which I always mention because it was very remarkable. The patient was a very stupid, drunken fellow, who, the first time, got a pin in the throat, and I did the operation; opened the œsophagus; removed the pin; kept him in the hospital three or four weeks, until he ceased to discharge any fluid through the sinus; and until the cut was a mere little line of granulations, almost healed; then I let him go home. He promptly improved the opportunity to get drunk again; and then tried to eat some rough meat with bones in it; and got a piece of it in his œsophagus, but coughed it out. It did not lodge there and he did not require any other operation. By this occurrence he burst open the whole wound and came into the hospital with a fistula thoroughly established. It looked discouraging with regard to healing; but after a month or six weeks it closed entirely. That shows the power of healing, contrary to the old idea that it was not safe to touch these cases at all.

FOREIGN BODIES IN THE AIR-PASSAGES.

The symptoms I have already described. They may be retained there a long while without killing the patient; many weeks; sometimes several months. Some substances, which are apparently innocuous when they are drawn into the trachea, afterwards change in a way to destroy life. It is very curiously the case with the vegetables like beans and peas. Beans and peas are favorite playthings with little children. They are apt to get them into the nose, or mouth; and if the child has a bean in his mouth and suddenly his attention is distracted, or it laughs or cries, and opens the mouth and inhales, the bean slips down past the guard of the epiglottis, and gets into the trachea, and lodges at the crossing of the bronchi; there produces the usual phenomena, but is not enough to obstruct respiration; but after twenty-four hours it excites secretion, swells, and leads to death from pneumonia, or atelectasis of the lung. Bear in mind that foreign substances always obey the law of gravity; and that any substance which has a large end and a small end will go down large end first. This is especially true of shawl-pins. The shawl-pin is an even pin all the length, with a wax or glass head. When coughed up and down the point is constantly cutting and pricking against the bottom of the larynx. Such a pin I removed from the trachea of a child after it had been in six weeks. This child had suffered a good deal from chronic bronchitis.

The symptoms are marked. What is the relief? The old remedy was to hold the child up by its legs, and to pound on its back, — occasionally, effectually. It was dangerous, however. The child is held upside-down, screams and cries, the substance drops on the glottis, spasm of the vocal cords is produced. Either it relaxes and the foreign substance comes out, or the child chokes to death in a very short time. The better way probably is not to attempt such a thing as that unless the means for doing tracheotomy are already at hand.

Opening the trachea is the only way to get at the foreign substance; and in this condition of things the child, not being in a state of profound dyspnœa except occasionally, it is perfectly proper and easy to give an anæsthetic — chloroform or ether. The child narcotized; the trachea opened in the usual manner; the sides are held open with hooks, and efforts made to find the foreign body. The foreign substance is sometimes thrown out in the gush of air that follows the opening of the trachea; and the substance occasionally is lost. If it is not expelled, it comes up into sight and disappears again. This cannot be the case with a substance which is impacted. Take a bean which has swelled. Symptoms would persist; no foreign substance would be seen. Nothing would appear. Then we should search the trachea with delicate curved forceps; and we can generally make out whether the two halves of the bronchi are clear or not. This failing, the next resource is to leave the trachea open; but not to put in a trachea-tube which would interfere with the expulsion of the foreign substance. The trachea must be fastened open; say, put a stitch opposite on each side, with two elastics attached, and fasten about the neck of the child; and carefully watch in order that nothing bad takes place; because you will remember that the child can breathe with its trachea held open in that way perfectly well as long as it keeps the head straight and lies on the back; but when it turns on the side everything shuts; therefore it has always seemed to me not so philosophical to do tracheotomy, and have the child treated without a tube, as it is to put in the trachea-tube. Excessive care in nursing must be had afterwards to prevent the child from turning the neck to one side, and suffocating. For these foreign substances you may sew the trachea open, and have the child watched, day and night. Many cases have occurred in which the foreign substance has been expelled during the first few hours after this has been done. Finally the foreign substance has been found lying on the pillow, where it had been expelled. After this, what? It may be safer perhaps to leave the cut in the trachea open, or perhaps put in a tube, for a day or two, until any chance of œdema of the glottis has gone by; and then the wound is allowed to granulate and heal, which it always does with readiness.

The operation of tracheotomy itself. There is no need to describe it. You see it done. You probably will all have an opportunity to practise it, sooner or later. The important question is what are the symptoms in the patient; no matter what the disease is, what are the symptoms in the patient which make you think now is the time to do it? We all know it is safer to do it early than late; that prolonged difficulty of inspiration and expiration; prolonged croup; prolonged spasm of the glottis, lead to changes in the air cells of the lung which render the child less liable to recovery after tracheotomy is done, if done late, than it would be if done early. The air cells get distended and stretched, precisely as they do in the case of the man who is constantly blowing upon wind instruments; who fills his chest and lets the air out slowly through the holes of the wind instrument to produce certain notes. It is well known that pulmonary emphysema and dilatation of the air cells is a common affection in a person who spends his life in blowing the flute, or clarionet, or cornet. A similar condition seems to be produced, rapidly, in the delicate air cells of the young child, after they have been having this forced retention of air in the chest from imperfect respiration through the chink in the vocal cords; hence the importance of doing tracheotomy in membranous croup, or diphtheria, early, rather than late.

Now there are certain symptoms of what we call dyspnœa, or difficult breathing, that come on, that are very significant. I would not call your attention to those which are so marked that any one who looks at the child would say "it is suffocating and near its death," when its nails have become lead color; when the complexion is slate-colored and blue; when the respirations are sighing and irregular and very imperperfect; and when the child is in a state of stupor from carbonization of the blood; — any body could recognize that condition, and, generally, then it is too late to do any good at all. The symptoms which are significant are these, — great pallor; pasty look of the face; constant restlessness; extension of the head and neck backwards to lengthen the trachea; croupy breathing, of course; retraction in the space over the top of the lungs, behind the collar bone; still more marked retraction at the epigastrium. Uncover such a child gently, and see and watch his breathing. You will find the intercostal spaces drawn in at every attempt to inspire; the thorax thrown out with immense force; retraction then of the abdominal muscles; retraction of the supraclavicular spaces; throwing back of the head; restlessness; pallor; a croupy sound, are the most prominent signs. When this class of symptoms are persistent, after a little watching, if you look carefully at the history of the case and find that they have been developing slowly a few days; that the voice has gradually become indistinct; that membrane may or may not have been seen on the tonsils; that all the symptoms point to a permanent obstruction in the larynx from some cause; — then is the time to do tracheotomy, or intubation, if you prefer that method of operating.

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PULMONARY TUBERCULOSIS WITH ESPECIAL REFERENCE TO ITS PROPHYLAXIS, HYGIENIC AND CLIMATIC TREATMENT.[1]

BY EDWARD O. OTIS, M.D., BOSTON.

"A sick man helped by thee, shall make thee strong." *Browning.*

(Concluded from No. 11, page 40.)

Exercise. — We are all agreed, I suppose, that tuberculous patients with much fever or who suffer from hæmoptysis should be kept at rest. With these exceptions, however, more or less exercise is to be advised for all cases of phthisis and will naturally come with the out-door life. The variety will depend largely upon the taste of the patient; and the amount, which must be carefully determined, upon the stage and type of the disease and the strength. If one is dependent upon his own exertions for his support there are many light forms of out-door work; or if, of necessity, he must spend a part of the day at work in-doors, he may utilize the intervals in a variety of out-door sports or exercises. If he is strong enough he may ride horseback, or a bicycle, or hunt picturesque bits of scenery with his camera, or fish or shoot. In the winter, skating, snow-shoeing or tobogganing may be the form of exercise. To have the mind pleasantly occupied at the same time is of decided advantage, and fortunate the man who has a hobby in the form of some out-of-door sport. While spending the summer at Estes Park, Col., some years ago, there was a poor fellow there, I remember, with advanced pulmonary disease, whose distressing cough often kept the ranch awake at night. In spite, however, of his miserable condition, he would persist in his favorite amusement of trout fishing whenever he was able to drag his emaciated form to the streams. When I left the park, I expected that a few weeks would be the end of him; but what was my surprise to learn that he was still fishing there the following summer. Out-door life in a mountain climate, exercise, and a mind pleasantly occupied, were evidently the factors in prolonging a not altogether unhappy existence against such heavy odds.

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[1] An Oration delivered before the New Hampshire Medical Society, June 20, 1893.

Whatever the form of exercise one thing must be insisted upon, namely: deep, full respiration and chest expansion. I have dwelt upon the importance of this as a prophylaxis of pulmonary tuberculosis; absolutely necessary is it in the treatment of the actual disease; and I believe it is one, if not the most effective factor in producing an arrest of the disease. Nature does this in the high altitude climate, which is, perhaps, the most important effect of altitude in climatic resorts. The rarified air of these regions stimulates one to take fuller and deeper respirations in order to obtain the requisite amount of oxygen, thus inducing greater chest expansion and more complete ventilation of the lungs. During the construction of the Oroya Railroad in the Andes of Peru, at an altitude of 15,640 feet,[12] some measurements were made of the native Peruvians employed at Yauliyacu with the following results:

Age.	Height.		Chest.
14 years	4 ft.	10 in.	36 in.
24 years	5	6½	36
21 years	5	4	36
16 years	5	0	34½
30 years	5	4½	34½

You notice the enormous chest circumference for the height. An American engineer increased the measurements of his chest four inches in two years by exposure to the rarefied air in these Andes. "The only explanation I can offer as to the nature of the influence of altitude," says an author quoted by Evans,[13] "and one to which I shall hold until something more satisfactory presents itself, is that people who have been born and brought up at great elevations have been always under the necessity of making frequent (or perhaps deep) inspirations, as a consequence of breathing a rarefied atmosphere: that they are continually practising a kind of pulmonary gymnastics, from which there proceeds a vigorous development of the breathing organs, and a greater power of resistance on their part to noxious influences from without."

There has recently been published an exceedingly interesting little book, written by an intelligent layman, narrating his experience in fighting pulmonary tuberculosis in his own person.[14] He attributes his cure largely to the habitual use of an inhaling tube. "To this instrument," he says, "I owe more than to all medicine, or to out-door exercise; and were I compelled to choose between the use of the tube for an hour and a half a day, and all other exercises and medicine without, for the removal of pulmonary tuberculosis, experience and observation would lead me to prefer the tube." If you will consider a moment the action of this little machine, you will observe that it is nothing more or less than a simple method of producing deep breathing and chest expansion, which is just what I have been contending for, and the extreme importance of which I have been trying to impress upon you. "To the use of the tube," continues Dr. Buckley, "the amount of time spent in walking and riding in the open air, and observance of certain additional hygienic methods together with the determination not to die, I owe my recovery." Merely to tell a patient to practice deep breathing is not sufficient. As a rule, he does not know how to do so, and often his respiratory muscles, especially the intercostals, are so weak that he cannot do it. Time and persistence and careful instruction will be required to accomplish this. In the beginning one should note, by measurement, the degree of chest expansion as well as the lung capacity, and these will serve as a basis of comparison with subsequent measurements, and indicate the effectiveness of the breathing exercise. I have already suggested the simple methods of accomplishing chest expansion; either with the arms at rest and the hands on the hip, or by an upward movement of the outstretched arms; slow, full inspirations are to be taken; or one may use the inhaling-tube, which is a useful device for accomplishing the same thing. If one has access to a well-appointed gymnasium, the different forms of lung-expanding apparatus can be used. It is hardly necessary for me to add that gentleness and moderation must govern the beginning, and the quantity of exercise should be adapted wisely to the patient's strength.

Habitation. — As pulmonary tuberculosis is a disease of in-door life, as little of this life should be lived as possible; all crowded halls and rooms, churches, closed vehicles of all kinds, street and steam cars should be avoided whenever possible. In the city, when one is obliged to ride upon a closed street-car, it is far safer to remain outside, even in cold weather than to undergo the risks of the generally impure air inside. The eloquent plea that the secretary of this society has recently made for better ventilation in railroad cars, and to which I call your attention with great pleasure, I trust will produce its results.[15] The church prayer-meeting, I am sorry to say, is often unmindful of the fact that holiness is more beautiful when given expression in a pure atmosphere. A country church in winter, and an unventilated vestry heated by a tight stove are prolific breeders of pulmonary tuberculosis; keep your patient out of them. When he is obliged to be in-doors, his room should be large and sunny and with but little furniture and that of the simplest kind. It should have painted floors that can frequently and easily be washed, and if possible walls without paper, but painted and varnished. Everything should be kept absolutely clean and well-aired. It is better to have a separate room for a bedroom, which should be large, sunny, and well ventilated, and neither gas nor a lamp should be used in it. It is well to bear in mind that an ordinary gas burner or lamp consumes as much oxygen as several adults. Both rooms should have an open fireplace; this must be insisted upon; it is the most ready and effective means of ventilation, and when heat is required, the air in the room can be kept cool and the patient warmed by radiation. Often, at not a large expense, a chimney can be added at the side of the house for the fireplaces, as is so frequently seen in the South. A large Franklin stove fulfils the purpose very satisfactorily. A damp cloth should be used for cleaning the furniture and the floor, instead of dusting and sweeping. The temperature of the rooms ought not to be above 65° F., or at the most 70° F.

Consider the condition of things in the average country house during the colder months of the year? The air is impure and stagnant; there is no ventilation; the temperature is perhaps 75 or 80, and the source of heat a tight stove. No daily thorough airing-out is ever thought of. Injurious enough to the most robust is this wretched atmosphere. What must be its effect upon the phthisical patient whom you so often find breathing it?

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[12] A. N. Bell: Climatology, New York, 1885.

[13] Evans: Phthisiology, New York, 1888.

[14] J. H. Buckley, LL.D.: A Hereditary Consumptive's Successful Battle for Life, New York, 1892.

[15] G. P. Conn, M.D.: Costs and Compensations, a paper read before the National Association of Railroad Surgeons, Concord, N. H.

If the situation of the residence can be chosen, a dry, sandy soil should be selected — not a clayey one. Sometimes, if the patient is living in a damp place, he may have some friend or relative who is more favorably situated, and who will receive him into his house.

The drainage and purity of the water should also be investigated. Wherever the abode, let it have an abundance of fresh air, keep the windows open whenever the weather will allow. It is said to be the habit of the present Chief Justice of this State to remove every window from his residence at the advent of mild weather, and not to replace them until compelled to do so by the approach of colder weather in the autumn; an example well worthy imitating with our phthisical patients. Impress upon them the dangers of in-door life; it is for those of strong lungs — if for anybody — not for the weak chested. I remember an Irishman who came to my clinic with some kind of a bronchial trouble, and who asked me how much longer he should stay in the house. "In the house," I replied; "we should all be better if there were no houses." "Begorra, I think you are right, doctor," was his reply. At any rate, we must admit that living in houses is accompanied with much risk.

Clothing. — In this climate the phthisical patient should wear woollen underclothing throughout, both winter and summer. Differences in the thickness may be made according to the seasons, but woollen all the time. It matters not so much what the outer clothing is, only do not permit the patient to be too heavily clad, particularly about the chest: Chest-protectors and the various kind of jackets, I believe unnecessary, if not injurious. A daily bath I think essential, the temperature being regulated according to the season. Sea-salt is often a desirable addition to it. In winter it can be taken before the open fire. A word as to the care of the sputa, a most important matter. Under no condition should it be received upon a cloth, handkerchief, or paper, or deposited upon the floor or ground, where it will dry and be disseminated in the air. Experiments have shown that dried tubercular sputum may be kept for periods of from ninety-five to one hundred and twenty days, and yet when innoculated into guinea-pigs may produce tuberculosis. It is a good plan to do as Dr. von Ruck told me he was in the habit of doing at his sanitarium in Asheville; frighten the patient by making him understand that, unless he exercises every precaution in regard to this, he is in danger of reinfection, or of infecting the still healthy lung portions. I generally use the small paper receptacles made for this purpose, with absorbent cotton at the bottom impregnated with some reliable bacillicide, such as a five-per cent. solution of carbolic acid or a solution of corrosive sublimate (1 to 500 or 600). The cotton is to be renewed every day or several times a day, and the receptacle itself is to be frequently destroyed. We must ever remember "that the sputum of subjects of pulmonary tuberculosis, is of all the excretions the greatest source of danger."[16]

The last subject of which I shall speak is that of climate, and I shall only be able to touch upon some of the salient points of such an extensive subject. Let me begin with a sentence from Osler,[17] which it will be well for us all to bear in mind. "When," he says, "the disease is limited to an apex, in a man of fairly good personal and family history, the chances are that he may fight a good winning battle, if he lives out-of-doors in any climate, whether high, dry and cold, or low, moist and warm." There is much encouragement in this for those of us who have to treat the majority of our phthisical patients at home. Bear in mind also another point, that change, *per se*, is often of great value, and sometimes, on the contrary, destroys the effect of the most favorable climate. I have visited many climatic resorts of pulmonary tuberculosis in this country and in Europe, and am tolerably familiar with the literature of the subject; and from what I have learned my conclusion is that there is no *one ideal* climate for the cure of this disease. Neither could there be, for varying conditions of the individual and the disease require varying conditions of climate. For example, one climate will promote good nutrition in one patient, another in another. There must be an adapability of the climate to the case. "Climatic treatment," says Jaccoud,[18] "is entirely a question of individual adaptation, and the problem is to determine which residence would be most appropriate to the patient in question."

Sometimes it will be necessary to change from one climatic resort to another, according to the changes in the disease or the individual. Furthermore, I do not think we are able yet to say what are the exact essentials of an ideal climate. Certain requirements, however, I think, we are sure of: first, a pure atmosphere; second, weather such that the patient can be out of doors most of the daytime during the whole year; third, as near eternal sunshine as possible. Most important, but possibly not always essential, is a dry soil and sub-soil. Dryness of the air and an equable temperature are also important, but it does not seem to me that they are always essential, especially equability, as it is generally associated with moisture.[19] The temperature of the air is a minor consideration, I think. Of all, *purity* of *air* is the most important point. In considering climate we must always keep in mind that "Climates which benefit consumption are found to fulfil one or both of the following indications: (*a*) The improvement of the local condition: (*b*) the improvement of nutrition and constitution vigor."[20] Increased experience and observation have taught me that a warm climate is not necessarily beneficial or a cold one injurious. Indeed the most successful curative climatic resorts at the present day are those of a cold or moderately cold climate, at least some portion of the year. I have no confidence in the warm and more or less moist climates, as for example, Florida and Havana, as curative. They may be used temporarily as a preliminary training for the higher attitudes, in cases where the vitality is low and one needs to exist with the least exertion; or they may be used as sedative and soothing, where there is no hope of cure. Whatever the climate selected, there are certain conditions which, in my opinion, must be fulfilled by the patient in order to gain the maximum of benefit from it. They are: (*a*) A long continuous residence; he should remain until he is cured, or it is proved that the climate does not agree with him. (*b*) Good sanitary and hygienic surroundings. (*c*) Nutritious well-cooked food. (*d*) An out-door life. (*e*)

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[16] Karl von Ruck: The Prophylaxis of Tuberculosis. Reprint from [illegible], April [illegible], 189[illegible].

[17] Practice of Medicine, New York, 1892.

[18] Pulmonary Phthisis.

[19] W. H. Geddings, M.D.: [illegible], Reprint, 188[illegible].

[20] Lindsay: Climatic Treatment of Consumption, MacMillan & Co., 188[illegible].

Exercise, unless especial conditions temporarily prevent. (*f*) A comfortable mental condition, and freedom from worry and anxiety. (*g*) To be under the constant supervision of a reliable physician.

I am more and more convinced of the great advantage of well-conducted sanitaria in climatic resorts. In many, if not the majority, of cases far better results are obtained than where the patient is left to himself. Success in the treatment of phthisis depends so much upon constant care in the detail of one's life, and this can be so much more satisfactorily done when constantly under the eye of a skilful physician and with the aid of all the equipment of a sanitarium. Unfortunately, I know of but few good ones in this country.

With these general considerations, I will briefly refer to certain especial climates and the regions where they are found, in which, experience has proved that pulmonary tuberculosis has been most successful treated. First, however, let me remind you that all stages of phthisis are not benefited by the same climate, and some by no climatic change, however favorable. Of course, the incipient cases are the most amenable to any good climate.

The classes of climate which have given the best results are: (1) the high altitude; (2) the medium altitude; (3) dry aseptic climates without altitude; (4) the oceanic climate.

Thus far the best results have been obtained, in my opinion, in the high altitude climates as represented in Europe by the Alpine health resorts, in the region about Davos; and in this country by various places in Colorado, particularly Colorado Springs. Davos is situated in a narrow valley, is of about 5,000 feet elevation, and is admirably equipped for the care of the consumptive. In Colorado an altitude of about 7,000 feet would give us a climate approximating to that of Davos, but superior in the amount of sunshine and clear, pleasant days. Colorado Springs is the best known to you and the best provided with accommodations. I believe, however, that there are many other places in this great State as (or more) favorably situated, if only good accommodations existed. Dr. Ruedi, of Denver, has recently suggested [21] Estes Park, a mountain plateau of great beauty and of about 7,000 feet elevation, as offering excellent climatic conditions for the treatment of phthisis; and I trust his plan of erecting a sanitarium there may soon be accomplished. I can testify to the wonderful charm of the park both in climate and scenery from a summer spent there a few years ago. Manitou and Denver are also resorts for patients. In the great Rocky Mountain zone innumerable high altitude resorts could and will in time doubtless be discovered and developed. I have need only to mention the high altitude resorts of the Andes, such as Santa Fe de Bogota, Quito, Arequipa, etc. They are obviously too far away to be of use to us, and we know but little of the local conditions existing there.

It is generally conceded that cardiac weakness, senile change, a nervous diathesis and pyrexia are contra-indications to the high altitude treatment. Lindsay [22] also includes rheumatism. The characteristics of the high altitude are: great purity of air, dryness of the air and soil, the coolness of the air temperature and the great warmth of the sun temperature, the rarefaction and low pressure of the air, the intensity of the light, the stillness of the air, and the large amount of ozone.[23] The effects of such a climate are: increase of the appetite, promotion of greater expansion and ventilation of the lungs, improvement of nutrition and digestion, and increase of muscular and nervous energy.

The climate of the medium altitudes resembles that of the higher, with the difference due to the less elevation, and the geographical situation. It is represented in Europe by many of the lower Alpine stations; for example, Les Avants (in the neighborhood of Lake Geneva, and 2,000 ft. above it), Gorbesdorf (in Siberia, 1,740 ft.) and Falkenstein (in Germany, 1,500 ft.) might be included in this class, and are famous for the sanitaria of Brehmer and Dettweiller. In this country we have, in the mountains of North Carolina, Asheville, 2,350 ft. high, with the admirable sanitarium of Dr. Karl von Ruck; South Western Texas and Southern California, inland, of an elevation of about 2,000 ft.; New Mexico, somewhat higher; and the Adirondacks, with an elevation varying from 1,500 to 2,000 ft. Near Saranac Village in these mountains is situated the sanitarium known to many of you by the valuable investigations concerning pulmonary tuberculosis, conducted there by Dr. E. Trudeau. Although cold and snowy in winter, yet patients remain there the year through. There are many regions in this State (New Hampshire) of moderate elevation, which, I believe, offer a fairly good climate for the consumptive, particularly in summer; such as Bethlehem, Gilmanton, Dublin, and others which will occur to you. That they are cold in winter is necessarily no objection for a continuous residence; the number of sunny days in winter, however, is somewhat limited and the climate is moderately moist. There is much to be done, it seems to me, in the careful investigations of the climatic resources of this State; only by a series of accurate observations extending over a number of years can any definite and trustworthy results be obtained. The pains-taking paper of the late Dr. Geddings [24] upon Bethlehem and Maplewood is an illustration of the kind of work that ought to be done.

Of the dry, aseptic climates of low elevation, Egypt is perhaps the best illustration abroad; there, on the borders of the desert, the climate is very dry and warm, the sunshine abundant, and the air pure. In this country there are various regions where these conditions exist; portions of Texas and Southern California, and the pine-belt of South Carolina and Georgia. Aiken, in the former State, is perhaps the best known resort, and its meteorology has been carefully studied by Dr. Geddings, whose favorable results in the treatment of phthisis there are doubtless familiar to you. Marietta and Thomasville, in Georgia, are also well known. Lakewood, in New Jersey, has many favorable conditions to recommend it — its dry, porous soil, environment of pine forest, good accommodations and easy accessibility. Minnesota and Canada must also be mentioned. If for various reasons the higher altitudes are inapplicable, we have these resorts of low elevation, which have produced good results. Of the oceanic climate, as illustrated by long sea-voyages, I have little to say, for the obstacles to its use are obviously so great that it can but rarely be employed. Surely one obtains here the purest of air and an equable temperature. Very much the same conditions can be found upon mid-ocean islands, such as the Madeiras and Canaries. In the latter is situated the valley of Orotava, "which Humboldt thanked God he had lived to behold." "Here the invalid may live in the open air — the air of the ocean." "The temperature never falls below 50° F., nor rises above 82° F., and it rains but forty-five days in the course of the year."[25] Surely a delightful spot in which to enjoy the benefits of an ocean climate!

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[21] Meeting of the American Climatological Association, May 25, 26, 27, [illegible], Philadelphia.

[22] Climatic Treatment of Consumption.

[23] Herman Weber: Croonian Lectures on the Hygienic and Climatic Treatment of Chronic Pulmonary Phthisis, London, 1885.

[24] The Climatologist, August, 1891.

If I were asked which of these classes of climate I should select for a case of pulmonary tuberculosis of good or fair general condition and not extensive disease, I should unhesitatingly choose first the high altitudes, for, undoubtedly, the best results so far have been obtained there. "A consumptive," says Solly,[26] "treated in an open resort in an elevated climate has three times as good a chance of recovery as has one treated in an open resort in a low climate, and twice as good a chance as one treated in a sanitarium in a low climate." The residence, however, must be a continuous one and perhaps for a life-time. Next, my choice would be Southern California, inland, or if I possessed greater knowledge of the region, perhaps, South-western Texas. Third, I should select Asheville, in North Carolina; and lastly the Adirondacks, or some of the resorts in the pine-belt of South Carolina and Georgia. There is a wealth of sanitaria in this country, with an almost infinite variety of climate, as yet hardly known and not at all developed. It remains for our profession to investigate with pains-taking fidelity these regions, and to make them available for the poor consumptive.

A few years ago in the mellowed light of the afternoon, it was my privilege to visit the great cathedral of Winchester. I was impressed with its majestic size, its grand and beautiful architecture, and its noble tombs to heroes and valiant knights of the Crusades. The atmosphere seemed heavy with the invisible spirits of those who left home and friends and all the richness of their lives to uphold the Cross in a distant land, and be true to the highest ideal of their day. As I wandered about, my attention was attracted by a humble tablet on the wall, erected to the memory of a physician. I have forgotten his name — that matters not — but I have never forgotten the tribute there to his services to suffering mankind. It was this, "The blessing of him that was ready to perish came upon me." What finer or more God-like deed, I thought, could be done by hero or knight, than to rescue those perishing from disease, and restore them to health and usefulness!

Fellows of the New Hampshire Medical Society, you go forth to meet during your next year's practice a thousand or more poor unfortunates ready to perish with the awful scourge of pulmonary tuberculosis. If you shall approach these cases with a greater hopefulness and a more determined spirit to help and cure them, and reduce the frightful yearly mortality, then, likewise upon you will "the blessing of him that was ready to perish" come. And what greater satisfaction can any true physician ask for than this?

A **new** use has been found for aluminium. It is said that the metal is to be employed in making artificial limbs.

Original Articles.

GUN-SHOT WOUNDS OF THE JOINTS.[1]

BY HERBERT L. [illegible]

Every surgeon knows that in the past there was a frightful mortality attending gun-shot wounds of the joints, and that these injuries usually meant amputation; exceptionally resection. Since the introduction of antiseptics, in the few instances in which its principles have been applied, there has been great improvement in the results, so far as life is concerned. With the introduction of small-bore rifles, which all the European nations (and at last our own government) have adopted, must come a reconsideration of the whole treatment of gun-shot injuries, and especially those of the joints.

I shall divide this paper into headings, and shall make broad statements in order to elicit discussion. It is written at best on insufficient data: hence the conclusions which I draw are advanced with considerable hesitancy. We can begin with this proposition, which will, I believe, be generally accepted, that we shall never know the full effects of the small calibre projectile until a war has taken place, and until such a calamity has occurred we must depend upon experimentation and theoretical reasoning.

The headings will be:

I. The effects of the new .30, jacketed projectile upon joints and individual joints.

II. The "firing-line" treatment of these injuries.

III. The field-hospital treatment.

IV. Complications and prognosis.

Under all these headings I shall consider the differences in the injuries inflicted between the .30 and .45 calibre projectiles.

I. — THE EFFECT OF THE NEW .30 JACKETED PROJECTILE UPON JOINTS.[2]

A most complete series of observations have been made by Capt. Louis A. LaGarde, of the United States Army upon "The Comparative Difference between Certain Wounds Inflicted by the Projectiles of the Large and Small Calibre Weapons." I am under the deepest obligations to Captain LaGarde for the privilege of seeing the specimens of bone injury by these projectiles, and for his permission to make abstracts from his paper, which has not yet been published. It would be more fitting if Captain LaGarde were to write this paper, as the specimens are unique and very valuable.

Our own government has finally adopted the Krag-Jorgensen rifle, and the experimentation of Captain LaGarde was carried out with what is known as the "experimental Springfield rifle of .30 calibre." Its ballistic qualities are quite equal to those of the new Mauser, Leble or Mannlicher rifle. The following is a description of the more important ballistic properties of these weapons as kindly furnished Captain LaGarde by authority of the Chief of Ordnance, United States Army:

"The Springfield rifle which has formed the armament of our foot troops since 1874 is a .45 calibre gun, the projectile of which has an initial velocity of

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[25] [illegible]

[26] [illegible]

[1] [illegible]

[2] [illegible]

1,301 f. s. Its projectile is made of compressed lead, cylindro-conoidal, cannelured and lubricated, weighing 500 grains, impressed by 70 grains of black rifle powder.

"The experimental Springfield rifle is a .30 calibre gun, the projectile of which has an initial velocity of 2,000 f. s. Its projectile weighs 220 grains, is made of a German silver jacket filled with a lead core, and it is neither canellured nor lubricated. It is impressed by 36 grains of smokeless powder."

The velocity and energy of the projectiles of the two weapons at different ranges are as follows:

VELOCITY OF THE PROJECTILES OF THE TWO GUNS.

Name and Calibre of Weapon.	Initial Velocity. f. s.	500 yds.	1000 yds.	1500 yds.	2000 yds.
Springfield, Calibre .45 .	1301	873	676	531	429
Experimental Spr'gfield, Calibre .30	2000	1103	804	627	495

ENERGY OF THE PROJECTILES IN FOOT POUNDS.

Name and Calibre of Weapon.	Initial Velocity.	Weight Grains.	Muzzle.	500 yds.	1000 yds.	1500 yds.	2000 yds.
Springfield, Calibre .45.	1301	500	1879	846	507	313	204
Experimental Springfield, Calibre .30,	2000	220	1954	594	315	192	120

It will be seen by the first table that the initial velocity of the small calibre projectile is far greater than that of the large calibre, and that the striking velocity at all the ranges is greater.

The penetration of bullets is proportional to the squares of their striking velocities. For equal velocities the penetration is proportional to the density of section. The form of the bullet and its power to resist deformation are also concerned in the penetration.

Considerable experimentation has been carried out by German and French observers upon the effect of small-calibre jacketed bullets as compared with the soft or hard lead bullets, and all agree in their conclusions. Bruns, Noel, Delorme, Chauvel and Nimier, Rogardik, Thurnwald and Reger are all men who have contributed to our knowledge. It is interesting to note that the calibre of fire-arms as used in European armies, which was formerly 18 mm. has been reduced to 7 and 5 and 8 mm., and in proportion the weight of the bullet has been reduced from 50 grammes to 15. The rapidity of the bullet has been increased from 400 to 600 metres a second. Experiments upon wood, iron, water and earth have been carried out, and it has been found that the force of the penetration exerted has been increased five or six times, but that the concussion of the bullet has been decreased, and that it causes a wound very like a cylinder, whereas the leaden produced a conically-shaped wound, the base of the cone being at the point of exit.

All writers agree upon dividing the effect of bullets into zones. In Zone 1, which extends up to 320 metres, the .30 calibre bullet has decided explosive [8] effects, but less than the .45 calibre.

Zone 2, which extends from 400 to 800 metres. The bullet produces a wound without any explosive effect. It is cylindrical, and not like the conoidal wound of Zone 1. Bones are perforated and splintered, but retain their form. The effect upon the soft parts is perforative and not especially destructive.

In Zone 3, from 800 to 1,200 metres, the wound is cylindrical. The wound of entrance is not larger than the projectile; the exit wound is only larger when bone has been traversed. The bones are perforated, but seldom shattered or splintered.

No particular study has been made of the effect of .30 calibre projectiles upon joints by European observers, but reasoning from the effect produced upon bone and the soft tissues and the increased penetrating power of the bullet, the effect upon joints at the various ranges will at times be complex, but usually less destructive than that of the .45 calibre. In a joint we have various densities of bone; we have a closed cavity filled with synovia, which is a capital culture medium for germs.

There will be a great deal of difference between a wound of the knee-joint and one of the wrist-joint, and it will be of great importance to decide at what range the bullet was fired. It can be readily understood that in a bullet wound of the knee-joint bits of the trousers and underclothing may be carried before the bullet, which may lodge within the joint and act as a foreign body. This would not be probable, for instance, in the elbow-joint or the ankle-joint. These considerations would naturally lead the surgeon to thoroughly explore the joint.

But a striking fact connected with the small-calibre projectiles is that in the mid-ranges their great velocity produces a perforative effect, and that not alone upon one man, but upon two or three. This was the experience in a number of instances in the Chilian War. Stitt, a United States naval surgeon, states that in the St. Augustine Hospital during the Chilian War, of 2,000 wounded, that those wounded with the .30 calibre projectile left the hospital a considerable period of time before some 300 of their fellows who had been wounded by the old projectile of over .40 calibre were convalescent. As an example of the conservatism which will undoubtedly be the rule in the treatment of joint injuries in a future war, Stitt relates two gunshot injuries of the elbow-joint in the San Juan de Dious Hospital; one received from a .45 calibre, the other from a .30 calibre. The injury which resulted from the .45 calibre demanded amputation, whereas that received from the .30 calibre resulted in a moderate synovitis of the joint, which required rest and passive motion a few weeks later.

It is interesting to note that Captain LaGarde's conclusions correspond with those of Continental observers, and he states that "the humane wound of the small bore rifle is especially observed in the joints and soft parts. Owing to the reduction in calibre the wounds in the latter partake more of the nature of subcutaneous wounds, and experience shows that they heal very kindly under appropriate treatment. It is not necessary in this case to dwell upon the destructive effects of the larger leaden projectiles upon joints. Suffice it to say that the greater frontage which it naturally possesses is made greater still by deformation, and that these facts with velocity sufficient to penetrate a joint, serve to convert the .45 calibre projectile into a very destructive missile."

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[8] The term explosive effects should not be confounded with the action of explosive bullets, but it refers to the action of the bullet upon the tissues with which it comes in contact, especially resistant structures, like bone or tissues, containing much water, like the brain, enclosed in cavities with rigid walls.

LaGarde writes: "When a resistant bone has been hit the foyer of destruction will show great loss of substance; the bone will have been finely comminuted; the pulverized bone will have been driven not only in the direction in which the projectile was travelling, but in all directions, and the pulpification of the soft parts will not only be limited to the track of the bullet, but the utter destruction is noticed some distance into the tissues. The wound of exit appears like a bursting forth of the skin; the track leading to the bone is conical in shape; the base of the cone corresponding to the wound of exit in the skin, and the apex to the seat of fracture. These explosive effects correspond to the velocity of the projectile at the time of impact, and the resistance offered by the part hit."

The following cases noted at Frankfort Arsenal will explain the marked difference in destructive effects by the two projectiles upon the spongy ends of bones:

"No. 1. Gun-shot injury of the lower part of the left femur; bullet marked No. 4, calibre .45, impressed by the velocity common at 100 yards, soft parts frozen. The wound of entrance is marked by a V shaped tear, each side of the V being 2.5 inches in length; the wound of exit is round, 1.5 inches in diameter. It is funnel-shaped, the base of the funnel corresponding to the skin and the apex to the point of destruction in the bone. The soft parts adjacent to the track of the bullet are a pulpified mass mixed with finely pulverized bone. One and a half inches of the external half of the shaft immediately above the articular surface has been carried away; the remaining part of the shaft is separated from the articular surface by a transverse fissure, whilst an oblique fissure extends into the shaft above 2.5 inches in length. The upper and external quadrant of the patella was chipped. There was no fissuring into the joint. The projectile was not recovered.

"No. 2. Gun-shot injury of the lower end of the right femur; bullet marked No. 3, calibre .30, impressed by the velocity common at 100 yards. The soft parts were frozen, on account of which the explosive effects were enormous. The projectile entered the femur just above the epiphyseal junction of the internal condyle and emerged posteriorly in a horizontal line, making an orifice the diameter of the projectile upon entering, and five lines in diameter upon leaving the bone. The perforation is well marked. The track of the bullet in the bone and between the latter and the wound of exit is lined by bony sand. There is a fissure scarcely visible to the naked eye running downwards and from before backwards through the articular surface, separating the two condyles almost equally. There is also a subperiosteal fissure 1.5 inches long running upwards from the point of emergence in the bone; there are a few small splinters of bone near the wound of exit still attached to the periosteum. The projectile was not deformed.

"That we should find a perforation so well marked in the spongy end of a bone within the range of explosive effects, makes the latter case very remarkable. As it is the only recorded instance of a perforation by the small metallic jacketed bullet within the explosive zone, it is but natural to infer that the frozen condition of the soft parts contributed to the result."

The two following injuries illustrate the difference in destructive effects upon the spongy ends of the bones entering into the formation of the knee-joint at 350 yards:

"No. 4. Gun-shot injury of the left tibia and fibula near knee-joint; bullet marked No. 5, calibre .30, impressed by the velocity possessed at 350 yards. The wound of entrance is round, of the diameter of the projectile; the wound of exit is marked by a longitudinal slit measuring one-third of an inch. The projectile entered the anterior portion of the head of the tibia, one-third of an inch from the articular surface, in the middle line; passing obliquely toward the outer side it emerged from the posterior surface of the head of the fibula. The orifice of entrance in the bone is equivalent in diameter to the diameter of the projectile; the orifice of exit is irregular, and one-third of an inch in its greatest diameter. There is no comminution. The knee-joint was not perforated, but the articular surface adjacent to the tuberosity shows a fissure which was not apparent in the recent state. The projectile was lost.

"No. 5. Gun-shot injury of the lower shaft of the right femur, bullet marked No. 3, calibre .45, impressed by the velocity common at 350 yards. The wound of entrance is 1.5 inches above the outer condyle, round, and equals in diameter the diameter of the projectile. The wound of exit is in the upper part of the popliteal space, irregularly quadrilateral in shape, three-quarters of an inch in its greatest diameter. The bullet entered the lower shaft 1.5 inches above the margin of the articular surface, one-third of an inch outside the median line. Nine large splinters are detached measuring from three to five inches in length. There are a number of deep vertical fissures in the upper and lower fragments; those in the latter do not invade the joint. The projectile was very much set up."

Then Captain LaGarde states that "The tendency on the part of the smaller jacketed bullets to perforate the spongy ends of bones increases as the velocity diminishes. After the 500-yards range perforations of these structures are rather the rule than the exception. We made no notes of injury to blood-vessels."

So far as I have been able to ascertain there have been no observations upon the effect of the projectiles upon blood-vessels, and I fancy that this work should be done.

II. — THE "FIRING LINE" TREATMENT OF THESE INJURIES.

The theory of the asepticity of a rifle bullet has been exploded by the experimentation of Messner and LaGarde. Messner's experiments were made by shooting a bullet into a tin can filled with sterilized Koch meat peptone-gelatine. A full charge of powder was exploded. The range was 125 and 250 metres. The conditions were as follows: (1) A non-infected bullet, can sterile. (2) Bullet infected (pure culture), can sterile. (3) Bullet non-infected, can sterile, but covered with a flannel covering which was infected with a known coccus, pure culture.

The results are given thus:

"(1) The shot canal through the gelatine showed no change or more frequently a more or less vigorous growth of "scheinmelpilz" or those varieties more commonly found in the air.

"(2) Without exception did the gelatine contained in the can show the development of the specific germ with which the bullet was infected.

"(3) Here also the shot canal was infected with the same germ with which the flannel covering of the can was infected.

"Although the experiments in the third class are not wholly convincing, still enough data is furnished by the rest of the work to decide the question in the negative."

Perhaps the most conclusive proof was furnished by LaGarde, who fired a .45 calibre bullet through a rabbit's ear and infected it with erysipelas, the bullet having been infected with the streptolococcus of erysipelas. He also communicated anthrax to three rabbits and one calf by shooting them with projectiles infected with anthrax bacilli. The wounds of entrance and exit in the .30 calibre in the mid and long ranges are slit-like, and have been compared to what would occur from the entrance of a knife. The skin of every subject of the reception of a gun-shot wound is, of course, septic. It is my belief that all that can be done for a patient receiving an injury at the "line of fire" will be:

(1) To check the primary hæmorrhage by means of tourniquets.

(2) To apply an antiseptic dressing (iodoform gauze) or some dry antiseptic. A cartridge shell of .45 calibre might be filled with iodoform and sealed up, and made a part of the permanent equipment of every soldier.

(3) To prevent further injury to the patient during his speedy removal to a field hospital.

To summarize, this means that every soldier should have an antiseptic dressing composed of some dry antiseptic, which will not need water to render it effective; and that he should have a tourniquet bandage, a suspender, that the company bearer may find his patient equipped for emergency treatment. This work will be done almost entirely by company bearers, under the direction of a medical officer. The ambulance corps will be busy in removing the wounded from the "line of fire" to the rear.

III. — THE FIELD OR BASE HOSPITAL TREATMENT.

Necessarily with this new projectile with its increased range of effectiveness field hospitals will have to be far in the rear. At this point a full equipment and a thorough system for immediate, rapid and accurate treatment of all injuries should exist. This will demand a corps of operating surgeons. The first thing to do in every case will be to wash, shave and sterilize the injured part. This will be done while the anæsthetic is being administered. The limb will then be rendered bloodless by an Esmarch bandage, and the surgeon with antiseptic precautions will explore the wound, and determine the amount of injury to the parts. He will take into consideration the character of the injury, the projectile producing it, the range at which it was fired, and the length of time that has elapsed since the injury was received. The best treatment of each case will be largely influenced by these considerations.

A gun-shot wound of the knee-joint from a .30 calibre jacketed projectile in Zone 1, 2 and possibly Zone 3, will require a thorough laying open of the joint, and its complete cleansing of dirt. A gun-shot wound with a .30 calibre in the shoulder-joint in Zone 1 will mean the mechanical cleansing of the entrance and exit wounds, the irrigating out the bullet track, and packing with iodoform gauze. The same injury occurring in Zone 3 may mean simply the washing of the external surface of the part, and excision of the wound of entrance and exit and no interference with the bullet track, but hermetically sealing it with a collodion and cotton (aseptic) or compound tincture of benzoin and iodoform dressing. A gun-shot wound of the hip-joint by a .30 calibre in Zone 1 means a thorough cleansing of the wound to its bottom, if possible, and tamponading it with iodoform gauze.

But I feel sure the rule will be to explore where there is any doubt of the cleanliness of the joint cavity. Plaster-of-Paris will enter largely into the treatment of joint injuries in future campaigns. Fenestra will be cut, and the wound dressed as often as circumstances demand.

IV. — COMPLICATIONS AND PROGNOSIS.

Complications in the treatment of these joint injuries will naturally arise, and they will have to be treated by the general rules of surgery. On the whole, there will probably be a greater mortality from the new .30 calibre than formerly; for not alone will a larger number of combatants be injured, but a greater number will die from primary hæmorrhage. But to speak of the prognosis of joint injuries from the new .30 calibre projectile it would seem as if not only would the ratio of mortality be greatly decreased, but the number of limbs saved and restored to usefulness would be very large. The simple cylindrical bored wound of the new .30 calibre projectile through the ankle-joint, if rendered clean, must be a far less serious affair than the conoidal smashing wound of the .45 calibre bullet.

The conclusions that may be formulated as regards gun-shot wounds of the joints with the new .30 calibre projectile are as follows:

(1) That joints having large synovial cavities will have to be thoroughly explored and cleansed, except possibly where the injury has been received at mid and long range.

(2) That small or superficial joints with small synovial areas will simply require cleansing and tamponading.

(3) That it will require a larger number of company bearers, Red Cross workers and surgeons than have ever been assigned for duty.

(4) That so far as joint injuries are concerned the new .30 calibre is more humane than the .45 calibre bullet.

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Aseptic Hairdressing. — A barber in Paris has posted in his shop the following sign: "All persons having a contagious disease of the beard or scalp are requested to inform the barber of it, that he may use special instruments and so avoid spreading the contagion."

RECURRENT TONSILLITIS.[1]

BY G. A. LELAND, M.D.

The subject of recurrent tonsillitis is one which is forced upon the attention of the general practitioner often with distressing frequency; and the young physician, perhaps also the older one, is often disgusted at his inability to prevent it, or to really palliate it. From month to month, or perhaps more frequently, these tonsils come under observation, with all their annoyance and distress, not to say danger; and the efforts put forth for relief are all but powerless. The onset of the exacerbation may be sudden, ushered in by a chill more or less marked, with high fever, followed by more or less formidable swelling, with exudation, white or yellow patches, etc., to subside after a week or two; or it may go on to abscess, intratonsillar or peritonsillar, with great distress, forced starvation, restless days, sleepless nights, extreme prostration and anxiety (both for patient and physician), requiring weeks or months for recovery. The mental state of the attendant is not an enviable one when he knows that he may have a sudden fatal termination from extreme faucial swelling, œdema glottidis, suffocation from sudden discharge of pus, or by involvement of the great vessels, the carotid and internal jugular, by extension of inflammation.

In general, there are two varieties of tonsils which are subject to such recurrence. First, is the tonsil which in an inflammatory attack simply rounds out an increase in size — smooth, red, shiny, the parenchymatous variety. The crypts or lacunæ are not markedly developed, but the lymphoid elements are increased in size and in number (Virchow). If the capsule is broken and the finger introduced, a soft, friable feeling is communicated to it, something like that of the normal spleen. After several inflammatory attacks, these tonsils are adherent to the pillars of the fauces, and especially when this adhesion has taken place, are they apt to be permanently enlarged, and even to close the faucial passage pushing forward the uvula, with every slight cold, or disturbance of the digestion, or from some other ill-defined cause, so that the voice and respiration of the sufferer are much affected.

The other variety is the chronic tonsil, which has a hard, rubbery feel, whose surface is full of crypts or lacunæ which run into its depth from one-quarter of an inch to one inch or more, which crypts usually contain inspissated secretion of a cheesy consistency and of a most offensive odor. This is the "lacunal" tonsillitis of Wagner or Brown. It may be large enough to just project beyond the pillars or it may reach even to the uvula. Because of the diseased condition of the interior of the crypts, it is especially liable to frequent inflammatory attacks from even the slightest cause. It acts as a foreign body in the fauces, producing a tickling, hacking cough, giving a malodorous breath; and doubtless keeps the general health of the patient down from the absorption of these decomposing cheesy masses through the tonsil itself, or from their being swallowed. It is said that attacks of indigestion light up inflammatory conditions in the tonsil. It is probably also true that the contents of the crypts excite or keep up a fermentative indigestion. This variety of tonsil is doubtless the result of repeated inflammatory attacks of the first variety.

It has always seemed to the writer that the ordinary methods of treating these enlarged tonsils have been extremely futile; that advocates of sprays, washes, gargles and pigments applied to the surface of the tonsil have lost sight of the fact that the tonsil is an organ of considerable size covered by mucous membrane, and hence these applications can have scarcely any more effect than that of a counter-irritant, externally applied to have an influence over any internal organ. Brudenell Carter in his work on the eye, speaking of blepharitis, says, "When Sidney Smith saw a little girl patting the shell of a tortoise in order to please the animal, he told her that she might as well pat the dome of St. Paul's to please the dean and chapter." It seems just as rational and just as efficacious to apply remedies to the outside of these enlarged tonsils. Even excision of the tonsil except of the first variety, as usually practised, fails to reach the bottom of the crypts; and, although it is often done with great benefit, it may also be considered a sacrifice of science to expediency. The stumps will still contain more or less of the crypts in this diseased condition, and if the stumps do not atrophy, as they commonly do not, the pillars of the fauces are still widely separated impairing the flexibility of articulation. But if the crypts themselves can be treated so that their contents will not remain to excite frequent inflammation, the tonsils will subside into a quiescent state and shrink to a small size, provided the fibrous elements have not been so largely increased as to interfere with shrinking. Hence about ten or twelve years ago, a suggestion found, I think, in a French medical journal promised to be a step in the right direction. This suggestion was that a syringe with a long nozzle bent at right angles an inch from the extremity, could be used to remove the decomposing matter from the lacunæ, and that then the tonsil would shrink away having lost the exciting causes of inflammation. I, therefore, had this syringe made and used it for a couple of years assiduously; but as it did not seem to meet the indications satisfactorily, or quickly enough, it has been used less and less in favor of a method which I saw mentioned some eight years ago, and which McBride says was advocated by Hoffmann, namely, the tearing away of the partitions between the crypts, so as to connect the many small contracted mouths into a few large, wide open ones.

As is well known, a tonsil which has suffered many attacks may have a surface more or less reticulated by fibrous bands between which are small holes which lead into crypts which are often large enough to contain many cheesy pellets; or the mucous membrane of the surface may be fibrous and tough. It is probably true that the septic contents of a crypt, acting as a foreign body, may start up an inflammatory attack which will close the mouth and so produce an abscess cavity, and this seems to be a rational explanation of recurrent abscess of the tonsil. Or the septic matter may be absorbed into the lymph spaces in the connective-tissue outside of and around the tonsil, and produce the peritonsillar abscess. Now, in the chronic variety of these tonsils these crypts can be united so as to form large mouths which will readily allow their contents to pour into the throat before they have become diseased. The introduction of caustics or the actual cautery into the crypts does not seem, at least in my hands, to accomplish the same result. First, because the application is a good deal wasted upon the contents of the crypts, since it is difficult and tedious to completely empty them; and, second, because it may not reach their farthest depth, and the inflammatory products produced by the application have the same small hole to get out of, or nearly the same, as before. Doubtless, however, good results are obtained in this way, although I think there is more discomfort to the patient, and less ease and facility on the part of the surgeon, than in Hoffmann's method. His blunt hook was used by the writer for a number of years, but cases were encountered where the tonsil was too tough to be easily torn by a blunt instrument. The idea then suggested itself that the inner edge might be made sharp, and that thus the instrument might be much more effectual and the operation more nearly painless. It was then that these knives were made by Goldthwaite & Co., at my suggestion, and I have treated this variety of tonsils for several years with them with the greatest comfort to myself and with the least discomfort to the patient. Gampert has lately called attention to this method, which he calls "decission of the tonsils." He also observes that many follicles communicate, and if the fistulous tracts be incised, the cicatrization occurs as in similar passages.

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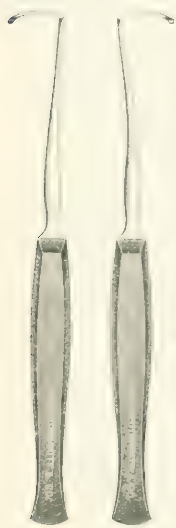
[1] Read before the Boston Society for Medical Observation, May 1, [illegible]



It is well known that the tonsil is not very sensitive, and I have often used this knife without the patient being aware that I was doing any cutting. The method is simply as follows: The olive-shaped tip of the knife is introduced into a crypt in the upper part of the tonsil, and then turned downward and inward and made to come out by another in the lower part. The substance of the organ between these two holes is then cut through. This can be repeated from three to ten times at a sitting until the surface of the tonsil presents the appearance of being full of slits. There is usually not much hæmorrhage, and this knife can be introduced oftentimes to its fullest extent without danger. As soon as the bleeding has ceased, the slits are painted with Monsel's solution, or with a mixture of glycerine and tincture of iodine in equal parts. These solutions may be put upon the end of the cotton-wrapped bent applicator and crowded down to the bottom of the tonsil. This is done for antisepsis, and to prevent the wounds from uniting immediately as they tend to do, thus rendering the operation futile. The patient is advised to gargle with hot water very frequently for three or four days, and to return in a week for another operation, if necessary. Dobell's or Seiler's solution, or a little borax, may be added to the hot water. It usually requires from four to eight sittings to cause a large tonsil to recede from the median line to a position almost out of sight behind the pillars of the fauces. If the tonsil is very fibrous and hard there will be left small projections upon the surface. These can be readily nipped off with adenoidal forceps or can be seized by long dressing-forceps and removed with a blunt-pointed bistoury. The patient is then instructed to return on the slightest symptom of the old trouble, that any crypt which has escaped treatment may be attended to. In adults this method can be carried out with the greatest facility and ease, and often in children as young as ten years of age. I have also been able to operate with satisfaction, although with a little more necessary persuasion, in children as young as five or six; and recurrent tonsillitis is not apt to occur younger than that, at least in my experience. The first variety of tonsillitis, in which the crypts are not so much developed or so fully diseased, is much benefited by this method if the capsule is torn or cut and the solution applied to its interior, and perhaps even if only adhesions between the tonsil and the pillars of the fauces are cut away by this method. It has been said by some one, whose name I have forgotten, that these adhesions can be removed by the galvano-cautery flat knife. I have tried this on one or two cases, only to give it up because of the pain of the application and the extreme soreness of the throat afterward. By the use of this knife, however, the pain of the operations is comparatively insignificant; and, although the tonsil may be sore for a day or two, it is not so sore as to give the patient great inconvenience. Oftentimes the patient returns, and says that the throat has not been sore at all; but, of course, in this, as in many other things, there are various degrees of complaining.

In Lennox Browne's third edition, in speaking of "Chronic Inflammation of Tonsils," he says: "Treatment of chronic lacunar disease is very tedious and unsatisfactory when the tonsils are not hypertrophied. It has been proposed to squeeze out the cheesy secretion from each diseased crypt, and then to apply solid nitrate of silver or other caustics — preferably the galvano-cautery if available — to the cavity. Such measures are, however, but too frequently only tentative, and not of permanent benefit. It is better to treat such cases on general principles, according to the diathesis and to give guiacum or chlorate-of-potash lozenges. Whenever (as is almost certain to occur in these cases) active inflammation causing enlargement takes place, it is to be rather encouraged than arrested, and the gland then removed." He says he has frequently pursued this plan with the most satisfactory results; but it is in just these cases that the method of Hoffmann finds the happiest application. Often the inflammatory attacks are not extensive enough to produce an enlargement of sufficient size to be seized by the guillotine; and at all times, preferably when there is no inflammatory engorgement, the little crypts can be entered by these olive-pointed right-angled knives, their mouths enlarged or united, and the cavities shaped so that they cannot retain their easily decomposing secretion. There are often seen cases, where the tonsils are of minimum size, where only two or three crypts are chronically diseased, but where these cause the patient frequent discomfort, annoyance or alarm. It would be tedious indeed to wait until they were large enough to be guillotined.

(To be continued.)

A law in Germany requires that all drugs intended for internal use be henceforth put up in round bottles, and those for external use be placed in hexagonal bottles. This enactment is precautionary against poisoning.

REDUCING THE TONSILS.[1]

BY THOMAS AMORY DE BLOIS, M.D.

There are conditions in the throats, of both children and adults, in which it becomes necessary to reduce the size of the tonsils. This does not refer to the enlargement of inflammation, nor to the sometimes sluggish return of tonsils to their normal size after more or less severe attacks of tonsillitis. But whether congenital, the result of disease, or the accompaniment of certain diatheses, the fact still exists that in certain cases the tonsils interfere with the well-being of the individual and relief of some kind is called for.

This interference sometimes manifests itself by lessening normal and quiet respiration, particularly during sleep — less often it is shown in the act of swallowing; besides there is a popular belief, that recurrent attacks of tonsillitis are due to the enlarged condition of the tonsils. But this latter is probably a substitution of cause for effect! Frequent attacks of tonsillitis will in most cases produce enlarged tonsils, rather than be caused by them.

Entire removal of the tonsils, or a complete peeling out of the gland, is an operation which was once practised in Italy, but has now fallen into disuse, and as a substitute for it, a slicing off of a portion was much used. This amputation was done both by the bistoury and scissors and also by the tonsillotome. The latter had various mechanical actions — cutting while sliding back, cutting while being pushed forward, cutting by circular scissors, cutting both tonsils at the same time — to be used according to the fancy of the operator or inventor, and all resulting in the same clipped gland, with a hard, flat, cicatricial surface in the fauces.

The pain of tonsillotomy even under cocaine was considerable; the dread of the operation, where it was understood, was great. Although I have removed tonsils under ether, I think it is generally considered that the operator should have the assistance of the patient in freeing the respiratory tract from blood. Then if you did not use ether, you had the panorama of the screaming child, the hysterical mother, the cracked ice, and the nasty, styptic iron — not dangerous but very unpleasant! The blood frequently oozed; it seldom spurted; and although, as Dr. D. B. Delavan, of New York states, there is not a fatal case of tonsillotomy on record,[2] yet bleeding to syncope has sometimes occurred.

To obtain the same result, perhaps to crawl out of the cutting operation, many substitutes have been devised. Injections of different kinds into the structure of the tonsils were used, applications of nitrate of silver or London paste (caustic potash) being pushed to the bottom of the crypts of the tonsils. Sometimes considerable benefit was derived from the ulcerative action of these escharotics.

I have used electrolysis in chronic hypertrophy of the tonsils, in which cases I sometimes introduced one and sometimes two electrolytic needles. I certainly got absorption and diminution in size by the action of the galvanic current; but the operation was slow, was painful and had to be frequently repeated, and each successive treatment brought only repeated dread to the patient.[3]

Following in the footsteps of Dr. Charles R. Knight, of New York,[4] I have removed tonsils with the cautery loop, either fixed or contractile; but this adds little to the advantages of ordinary tonsillotomy, except the arrest of hæmorrhage and the sealing up of the cut surface.[5] Dr. Knight's experience with the cold-wire snare ecraseur is, to say the least, not encouraging; even under cocaine the pain was described as being so intense as to form a great obstacle in the mind of the patient (an adult) to submitting to the removal of the other tonsil with the galvanic cautery loop. As regards the effect of the mode of removal on the subsequent cicatrization, it does not seem to me to make very much difference. The burned surface seems to repair as quickly as the cut surface; both leave the same hard cicatrix. Of course there is always the liability of burning the pillars of the fauces and causing some inflammation and œdema from that accident.

Another operation, not original perhaps with my colleague Dr. Leland, but at any rate first used here by him, consists in the transfixion, from one crypt to another, of the tonsil, with a stiff, steel probe. (I have for this operation made use of the ancient and discarded steel hand-plugger of the dentist.) Then the intervening tissue is torn through by a more or less vigorous tug or twist. After half-a-dozen or so of these tracts had been thus divided, the gland is left to suppurate and contract during healing. I have made use of this procedure frequently, particularly, as is often the case at the City Hospital, after the patient has been thoroughly cocainized, it is discovered that the electricity has decamped for parts unknown. Then this tearing operation is the best thing to do to conciliate the parents, who expect something to be done and who have been sent there with that expectation, possibly, by their "family doctor."

I confess that sometimes, in Dr. Leland's operation, I have wondered whether the whole tonsil and perhaps the pharynx besides, would not come away when I sometimes tugged to break through a particularly thick bridge of tissue. And besides this, I do not think the after-results are quite as beautiful as they should be. There is a very gnawed or worm-eaten look to the surface — suggestive of the shaggy coat of the chorion under powerful microscopic enlargement. The mucous covering of the tonsil has certainly been saved, but there is an untrimmed look about the whole thing, like an unfinished picture.

Lastly, we come to ignipuncture. Fifteen years ago, before the discovery of the local anæsthesia of cocaine, and when the galvano cautery was not much in use, Dr. F. H. Bosworth, of New York, was in the habit of thrusting a silver wire, previously heated over a spirit lamp, through enlarged follicles of the pharynx to bring about scar contraction. This operation, after the general use of the galvano-cautery point, became quite the routine procedure. Exactly when this ignipuncture was used in the reduction of enlarged tonsils is difficult to state. Dodart[6] reports it as the operation of choice. In a paper by [illegible][7] "the method by galvano puncture is highly praised." Valat,[8] and Wilhelm Roth[9] both speak in praise of the operation, particularly for children. "Roth advises the operation, preceded by an application of a twenty-per-cent. solution of cocaine, to be repeated four or five times at intervals of two or three days. He finds this sufficient to reduce the tonsils to their normal size, with scarcely any pain and without the risk of troublesome hæmorrhage, which contrary to his own experience," he says, "is not uncommon, especially in young children."[10]

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[1] Read before the Boston Society of Medical [illegible]

[2] Annals of the Universal Medical Sciences, [illegible]

[3] [illegible] Washington, [illegible]

[4] [illegible]

[5] [illegible] operation with the cautery loop.

[6] [illegible]

[7] Annales de maladies de l'Oreille du Larynx, etc., July, 1888.

[8] [illegible]

Whether the tonsils of the American present are larger and more difficult than those of the German past, I know not; but certainly I have never obtained the brilliant results nor the total absence of pain depicted as above. At the City Hospital during the past winter, I have operated with the galvano cautery in about thirty cases during six months of continuous service. These cases ranged in age as follows: there was one case of two years of age; one of three years; three of five; one of six; seven of seven years; one of eight; one of ten; three of eleven; one each of twelve, thirteen and fifteen years; two of sixteen; one each of seventeen and nineteen; three of twenty years; two of twenty-one, and one of twenty-three years. After that there was one case of thirty-one, and one of forty, illustrating Sir Morell McKenzie's theory that the tonsils undergo spontaneous atrophy after thirty years of age. I endeavored to do what I could for as many patients as I saw. I do not know whether this number out of, we will say, four hundred new patients (such being about the attendance of the winter months) would represent the proportion of enlarged tonsils; but that is all that the record shows. My usual procedure is as follows: Allow that the patient is a child of five or six years of age, I make an application to the tonsils, with a cotton stick wet with a solution of muriate of cocaine, say of a strength of four or five per cent. I try to get as little of this into the pharynx as possible and endeavor to keep the child's mouth open and tongue quiet until some drying or absorption has taken place. Then they are allowed to expectorate, and of course they get rid of all the cocaine on the tonsils. In five or ten minutes I repeat the operation, and watch the pulse and also the child, for toxic symptoms are possible! If the child be strong, I may make a third application. In the case of an adult it is about the same, except that I use a ten or twenty per cent. solution of cocaine. At the expiration of perhaps fifteen minutes from the time of the first application, while holding the tongue down with a depressor, I push the cautery point down into the tonsil about a quarter of an inch. I purposely try not to strike one of the crypts, the mouths of which I do not care to seal up. The pain, I do not think is very severe, even after you have got through the mucous coat which I believe is the limit of cocaine anæsthesia (when it is not injected). Some slight inflammation follows and some little sloughing from the burned parts. I have occasionally seen a diminution in size (which I estimated at about a quarter) follow at the end of ten days after the first burning. The ignipuncture should be repeated perhaps three times, which will probably give as good results as can be obtained in this way. I will not burden you with a history of my thirty cases, and tell you how much relief A. B. got, and how much C. D. did not. In a treatment of this kind it is largely routine, one case closely resembling another. About half the cases will show some improvement after the first burning, and this will be more apparent in children of from five to fifteen years of age than in any other cases, for the younger ones do not tolerate a proper application either of cocaine or fire, and in the older ones the tonsils do not seem to reduce so easily.

There are certainly one-quarter of the cases in which progress is either so slow or so unsatisfactory that further treatment in this way is abandoned. Then the tonsillotome will make its appearance. I have had four such cases. It appeared to be the only thing to do. I do not wish to convey the impression that galvano-caustic puncture is by any means a perfect method of treating the tonsils. But take it all in all, it is the best that we at present have at our command, and it is certainly far better than the wholesale clipping which formerly was the fashion, when we believed that every enlarged tonsil should be cut.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, May 1, 1893, **DR. J. G. MUMFORD** in the chair.

DR. DEBLOIS read a paper on

REDUCING THE TONSILS.[1]

DR. G. A. LELAND presented a paper on

RECURRENT TONSILLITIS.[2]

DR. FARLOW: The tonsil is an organ liable to have all sorts of irritants about it and in it, and these irritants should be removed if possible. Troubles with the teeth, tongue, mouth, pharynx, naso-pharynx and stomach can cause the tonsil to enlarge. It should be noted whether the tonsil is adherent to the pillars of the fauces and such adhesions should be freed. All secretion should be removed from the follicles and especially from between the tonsil and the anterior pillar and from the sulcus between the upper and lower lobes of the tonsil, the two latter being favorite places for the retention of large masses of irritating secretion.

Where there are a number of enlarged and diseased follicles I have been in the habit of breaking down the walls between the follicles and opening up several follicles into one common opening, in the way that several fistulous tracts might be better drained by laying them open into a common tract. It is also possible to cut out a piece of tonsil which contains several diseased follicles near together.

Dr. DeBlois speaks of cocaine working on the surface of the tonsil only. According to my experience, the tonsil is not a sensitive organ and cocaine used on the mucous membrane causes sufficient anæsthesia to allow very deep cauterizations and incisions without pain.

In children with soft tonsils internal treatment is often of great service and local astringents are of some, but not much, benefit. I have been able to use the cautery in many instances with very good effect. But where the tonsils are the seat of true hypertrophy and are very large, it is, by all means, the best plan to remove them. I usually give a little ether, just enough for primary anæsthesia, put the cold wire snare well round the base of the tonsil and with the écraseur movement it is possible to remove the enlarged organ without the loss of any blood. Where the tonsil does not project sufficiently to be caught in the wire I have sometimes cut the capsule and with my finger broken up the friable inside of the tonsil with the result that a considerable diminution in size has followed.

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[9] London Lancet, February 16, 1889.

[10] C. H. Knight, in paper as quoted before.

[1] See page 375 of the Journal.

[2] See page 373 of the Journal.

Dr. DeBlois has spoken of the tonsils atrophying as one grows older. I have had a lady in my office to-day, 57 years of age, both of whose tonsils are very large — a simple hypertrophy.

With regard to intratonsillar abscess, as spoken of by Dr. Leland, I should say that such cases were very rare. I have seen a few instances of cysts, resulting from the retention and liquefaction of secretion in several follicles whose walls had broken down forming a cyst near the surface. But true abscess has usually been found around and not in the tonsil.

Two years ago I had a very interesting case of conversion of the entire tonsil into a large cavity filled with cheesy matter. The opening to this cavity was quite small. After thorough evacuation and disinfection a few applications of the cautery caused the entire cavity to close up so that I was no longer able to find the opening.

Dr. Temple: I should like to ask the reader whether in these cases of recurrent tonsillitis in children eight to twelve years old he has had any better results following out the lines of treatment early, say at the age of eight or nine, than where the case has been delayed longer, in other words, whether the recurrence of the trouble does not place the tonsils in such a condition that it is hard to treat them effectually by the method he suggests.

Dr. DeBlois: I think treatment should be carried out as soon as we observe the enlarged condition of the tonsils.

In reply to Dr. Farlow I would say that it seems to me the difficulty that he spoke of in cutting through and then using the cautery-point when cutting away the dividing lines between several crypts is, that the chances are, that you do not seal up from the bottom. If you can be sure of striking the bottom of your cavity it certainly is a very excellent way to use the cautery. I think that after the operation of tearing or burning down the tonsil, then if tonsillotomy is necessary it certainly affects the stump that remains. Since I wrote this paper I saw for the first time one of the cases which I spoke of where I had persistently burned through and endeavored to reduce a tonsil in a young woman of sixteen and finally, as a last resort, cut it out with the guillotine. The stump was scarcely visible. I had never seen a stump disappear as this one. Generally they stand out with a hard flat surface with sharp edges requiring a secondary operation to remove them.

Dr. Farlow spoke of not having mentioned the matter of peeling out the gland. I think I spoke of it in the first part of the paper as having been practised in Italy. Dr. Daly, of Pittsburgh, had a way of seizing the tonsil with a pair of sharp-pointed forceps and drawing it [illegible] removing it with a sharp curved bistoury. I think that there has been in use a method with the cold wire snare of removing *parts* of the tonsil, particularly where it is lobulated.

Dr. Leland and I have written on rather different subjects. He took up the conditions connected with inflammatory processes in the tonsils, whereas I took only the chronic hard condition not connected with inflammation, except as a result.

Dr. Leland: I simply advocate this method as one I have used about eight years. I think it would be an easy one for the general practitioner to adopt. It is not adapted to all tonsils. Some of the large rubbery tonsils we cannot take the time to do in this way. If we can get a pair of tonsils out in five minutes, it is folly to take six or eight sittings to do it. Where you have a nervous family, with one or both parents very much opposed to having the guillotine used, and more opposed to having ether used, you can rather surreptitiously introduce this knife and the tonsils shrink away very satisfactorily.

Dr. Nichols: I have had ever since I can remember one or two attacks of tonsillitis in the winter, and a year ago last December, Dr. Leland united the crypts of one tonsil with the blunt hook; and about ten days later, the other with the knife. Since that time I have never had any trouble in the way of tonsillitis.

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Recent Literature.

The Chronic Disorders of the Digestive Tube. By W. W. Van Valzah, A.M., M.D. New York: J. H. Vail & Co. 1893.

This is a small octavo of 150 pages, and is a combination and reprint under one cover of various articles previously contributed to several medical journals. A paper on sea-sickness is added. There are five chapters, and two papers are added in an appendix. The author has aimed to make each chapter complete in itself. We notice in the text quite a number of foreign idioms, and there is also a tendency to "fine writing," which had better be spared where so large a subject is condensed into so small a book, and where there is an expressed desire to make each chapter complete in itself. The chapter on sea-sickness will not carry a large measure of comfort either to the perplexed practitioner or the perplexed patient.

The International Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. Eleventh Year, 1893. New York and Chicago: E. B. Treat.

The opening article in this book, "The Present Status of Therapeutics," by Professor Hare, is excellent. This is followed by the brief mention of a number of new remedies; but the main portion of the volume, which is illustrated, is devoted to what is called, "A Dictionary of New Treatment in Medicine and Surgery, 1893." Diseases are here alphabetically arranged, recent methods of treatment outlined, and the names of the physicians who have employed the given treatment, together with references to their articles, are added. "The Medical Annual, 1893," published in England, contains the same text as "The International Medical Annual," except for a few pages at the end of the volume, together with a mess of advertisements, etc., of interest chiefly to British practitioners.

THE BOSTON

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THURSDAY, OCTOBER 12, 1893.

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"MEDICAL EDUCATION IN AMERICA."

IN the issue of the London *Lancet* of September 2. 1893, which is devoted to medical education, there is an article on medical education in America. The article, on the whole, is not an injudicious or discreditable one. The author criticises us from a somewhat elevated stand, and points out the mistakes we have made, says we are doing very well, but does not think that on the whole medical education in the leading schools in this country is on a par with medical education in England. He takes Harvard and Yale as the types of the best medical schools in this country. Some of the criticisms which he makes are good, others are not. Some of his statements are correct, others are not — as is too often the case when a Briton writes or talks about persons or things pertaining to other countries than his own islands.

It has not occurred to us for some time past to make any comparison between the leading medical schools in this country and the English schools. So far as we can judge by the fruits, medical education in the best schools in this country is far ahead of that in the English schools. For one well acquainted with medical literature there can be no doubt that the decadence of medical science in England during the last forty years has been most marked. This decadence commenced at the very time when medical science began to bloom in Germany under the influence of the stimulus which great teachers like Virchow, Rokitansky, Skoda, Frerichs and Traube gave to it. The reason is not far to seek. The stimulus which was given medical education in Germany at that time was due to the greater use of the experimental method in medical science leading to a closer investigation of the problems of disease. The falling off in England has been largely due to the small place given in medical education to the laboratory and to research. In medical education in Germany there is the further advantage of a close union between general and medical education. The medical faculty is the faculty of medicine of a great university, and profits by the stimulus which it receives from other branches of learning.

There is no doubt that the antivivisection laws of England have exerted a marked influence in retarding the advance of medical science. The very class in England which regards it as a noble sport to harry foxes to death with hounds and which shoots tame pigeons, is horrified at the idea of performing an experiment on a carefully anæsthetized animal, though such an experiment might greatly increase human knowledge. We, here in America, have also felt the need of laboratory teaching and research, and it is only in comparatively recent years that that part of medical education has begun to have the importance given it which it deserves. To the Johns Hopkins University, as well as to Harvard and one or two other schools, must be accorded the credit of giving to the laboratory the high place which it should properly hold in education.

At the present time in Harvard, as far as the student is concerned, the facilities for teaching in all branches of medicine are fully as great as can be found elsewhere. The clinical material for the purposes of teaching is abundant. The teachers are well-trained men familiar with the best methods of teaching in Germany and France, and they are sufficiently numerous to permit close contact of the student with the teacher. In most of the departments the student has the advantage of learning the views of different men on the same subjects. Abundant opportunity is given him to familiarize himself by practice with the methods of investigating disease. In obstetrics, not only does he have the various stages of labor explained to him at the bedside, but no student leaves the school before he has himself attended a number of cases of parturition.

The numerous hospitals of the city give him abundant opportunity for hospital work as a resident interne. Nor have the scientific branches of medicine, if one may speak of them as separated from the practical, been neglected. The first and second years of his course are largely given up to study in these branches. He receives in these both theoretical and laboratory instruction. The opportunities given him for laboratory work in anatomy, histology, medical chemistry, (including examination of urine), physiology, bacteriology and pathology are unsurpassed in any of the European schools. The theoretical lectures and laboratory instruction are given in a building conveniently located and admirably arranged for the purpose, the cost of which the author of the article in the *Lancet* learned on direct inquiry — with the view possibly of advocating the construction of a building with the same admirable equipment in England. The little slur with which the statement of the cost is accompanied may be regarded as both harmless and gratuitous.

As far as the student is concerned he is well taken care of, but the medical school which would be the medical faculty of a great university, has another duty to perform. Only a part of its duty is done when it sends out its young men well equipped for the practice of their profession. The university has a much higher duty to perform in advancing human knowledge, and it is this which is its glory, and which gives it its best reputation. When we think of the great universities abroad, we do not think of them so much as educational centres where men are taught, but we think of them as the places where knowledge is increased. We think of the laboratories of Berlin, not as places where the student is instructed, but as the places which gave Virchow and Helmholtz facilities for their work. We do not think of the hospitals there, as the places where preeminently medicine is taught, but as the places which gave the material and the means for the work of Traube, Frerichs and a host of others.

There can be no doubt that we think too much of what is called the practical side of medical education. Medicine is not a fixed science; there are comparatively few laws in it which are certain and of general applicability. Many of the supposed facts which the student learns will be found to be erroneous in the course of a few years; and if he has not learned to investigate for himself, to observe and reason independently, then he has not learned the best. And this best sort of training cannot be given him; it must grow into him and become a part of him. It is only possible for him to acquire it when he is in contact with men who are investigators, and when the spirit of investigation is in the air he breathes. We cannot give a man malaria; we do not know exactly the manner in which it enters into him; but if he go into a country where, as they say in the south, "the air is full of it," he will have his chill in due season.

Certainly the best men we have here and the best men in England also, are men who after their medical education at home (applying the term medical education to the years of study before a degree is given) have studied in the Continental universities, especially in the universities of Germany. What is it that they get there which has such an influence on them? It is not that they have superior opportunities of seeing disease; it is not that the facilities for teaching there are better than ours; but it is their contact with men who are investigators, and the absorption through such contact of some of the spirit of investigation. For such a medical department, especially for the scientific branches, large endowments are necessary. Larger endowments, even, than any of the German universities have, because here the cost of living is enormously in excess of what it is in Germany.

That with the same facilities our Faculties of Medicine would be as productive of good as the German cannot be doubted. Our medical schools have been hampered in the first instance by the absence of a close and integral union with those other branches of learning which compose the faculties of a university, by being more or less technical schools where the art of medicine is taught; secondly, by the absence of endowment, making the remuneration of the teachers dependent on the fees of the students, and the work of research almost impossible.

THE BACTERIOLOGY OF DIPHTHERIA.

It is now generally admitted that the Klebs-Löffler bacillus is the cause of diphtheria, hence the presence of this bacillus in the exudate is necessary for accurate diagnosis. This fact is now recognized and the bacteriological study of this disease is everywhere assuming great importance.

It is known that the presence of a false membrane is not characteristic of diphtheria, for various caustic chemical agents may produce it, and parasites other than the diphtheritic bacillus, such as the staphylococcus aureus and the streptococcus pyogenes.

Veillon has lately published [1] an interesting *résumé* of the mode of action of the Klebs-Löffler bacillus and of other micro-organisms influential in producing or favoring the complications of this disease.

The Klebs-Löffler bacillus having gained access to the excoriated skin or mucous membrane and effected lodgment there, multiplies actively; sometimes, though very rarely, it causes only a little redness (angina without false membranes), but generally, it produces a violent inflammation of the mucosa, and soon a false membrane appears. In fact, the parasite vegetates on the surface of the epithelium, where it readily secretes its toxic products, the mucosa becomes congested, œdematous; the epithelial cells swell and become vesicular; the chorion is infiltrated with leucocytes and a few red corpuscles; the small vessels are often thrombosed; at the same time, the exudated fibrine forms on the surface of the mucosa a thick network whose meshes enclose lymph cells, red corpuscles and necrosed epithelial cells. It is in the interstices of this false membrane that the bacilli pullulate; "*they never penetrate the mucosa, they never invade the glands, the internal organs, the blood.*" This last statement is not in accord with other observations and is probably more positive than our present knowledge would justify.[2]

But the activity of the bacillus is not limited to the production of the false membrane, the angina and the croup; it secretes a toxine which is readily absorbed and poisons the whole organism. This toxine, studied by Roux and Yersin, is fabricated out of the protoplasm of the bacillus, and is found in abundance in the culture bouillon and may be freed, by filtration, from the bacilli. This poison, which bears a striking similarity to a diastase, or to the venom of certain serpents, is soluble in water, and is precipitated by alcohol; it is attenuated and destroyed by a temperature of 60° C to 100° C.

Gamaleia believes this poison, which has not yet been isolated in a state of purity, to be a nucleo-albumin derived from the bodies of the bacilli. It is

[1] Semaine Médicale, September [illegible].

[2] Journal, Vol. CXXIX, p. [illegible].

extremely active. A centigramme of the evaporated residue of a bouillon culture is sufficient to kill eight guinea-pigs, each weighing a pound. By the inoculation of this poison in animals, almost all the characteristic lesions of diphtheria may be reproduced. Sometimes a subcutaneous injection causes mortification of the skin and an eschar. It is this toxine which produces the general prostration, the fatty degeneration of the liver and heart, the nephritis and albuminuria, the fibrinous effusions in the pleura, congestions and even hæmorrhages in the internal organs, and lastly, the paralyses so characteristic of diphtheria.

That the disease, though primarily local, very soon becomes general by reason of its toxine, is proved by the fact that these paralyses often follow benign cases, and death has been known to supervene by syncope in full convalescence — evident proof that the myocardium has been touched by the toxine.

But, in a great many cases, the diphtheritic bacillus and the toxine which it secretes are insufficient to explain all the lesions and symptoms of diphtheria; for, in fact, the disease is much more complex than has been generally supposed. Certain accessory germs, mainly cocci, during the course of the disease invade the pseudo-membrane, the inflamed mucosa and sometimes the internal organs, having obtained a nidus favorable for their development in the diseased focus. These accessory germs increase the severity of true diphtheria. It is these, in Veillon's estimation, which form the thick exudates which cover the tongue and the gums, and which cause the fetidity of the breath. These microbes are principally the streptococcus pyogenes, the pneumococcus and the staphylococcus pyogenes.

The streptococcus exists quite often in the mouth of the healthy man and under the influence of a disease like diphtheria, it might be expected to develop abundantly and become pathogenic. Even where it is not a previously harmless parasite of the mouth, it may be introduced, through dust, in the air of respiration. This parasite seems to augment the inflammatory reaction; it tends constantly to infiltrate the mucosa, and it often penetrates the glands by the lymphatics, causing suppuration. It is found in the tracheal or peritracheal abscesses after tracheotomy; and in a certain number of cases, it causes the purulent pleurisies and the broncho-pneumonias which are so formidable when occurring in diphtheritic children. The toxine of diphtheria, by its depressing influence, evidently favors the development of the streptococcus, which often infects the entire organism, causing those septicæmic forms which are so often fatal.

Next in frequency after the streptococcus comes the pneumococcus, which may be found in the false membranes, and like the streptococcus may cause suppurations, otitis, purulent pleurisies and broncho-pneumonias. Sometimes this microbe is associated with the streptococcus.

The staphylococcus pyogenes is much less frequently associated with the Klebs-Löffler bacillus; it may, according to Veillon, cause suppurations of little gravity (small abscesses) and impetigenous eruptions. In rare cases, the bacteria of putrefaction have been found associated with the specific bacilli and the pyogenic cocci, causing secondary gangrene (Netter).

As a result of this knowledge of the pathogeny of diphtheria and of the accidents which attend it, and which may be defined: (1) local accidents due to the Klebs-Löffler bacillus; (2) general accidents due to the toxine; (3) accidents due to the secondary infections, it is evident that the treatment must be sufficiently complex to oppose each of these sets of morbid manifestations.

The parasite being localized in a limited point of the mucosa, it is natural that means should be sought to destroy it *in situ* and prevent its development. The remedies which have been employed with this intent are manifold; the ideal antiseptic must be active enough to kill the bacillus or arrest its multiplication, while so little caustic as to respect the integrity of the mucosa. Löffler favored corrosive sublimate, Roux and Yersin phenic acid. The sulforicinated phenol has high endorsements; the same may be said of camphorated naphthol.

The difficulty is to reach the parasite, which is generally well protected in the meshes of the false membrane. Veillon, in accordance with the principal authorities of the French school, advises ablution of the false membrane by means of cotton wool wrapped around curved forceps. Rather, however, than wound the mucosa and make it bleed, he would let the pseudo-membrane alone, contenting himself with sprays and irrigations to limit the spread of the disease. The lavages should be very frequent, every hour or even every half hour.

To antagonize the toxine, Veillon regards the frequent irrigations also as excellent, for these may be expected to wash away a part of the poison, which is soluble in water. As the toxine has been found to be much less active in an acid medium (as shown in culture bouillon), lactic or tartaric acid may with advantage be used as one of the remedial agents to be frequently employed in the form of spray or irrigation; Veillon prefers a saturated solution of boric acid to which lactic acid is added in the proportion of one per cent.

But as no local applications can affect the toxine which is already absorbed and in the blood, some antidotal agent must be sought for that can meet and neutralize the poison in the organism. It may be that such antitoxine will be long a desideratum, but Veillon expresses much faith in sero-therapy, which he thinks has "a brilliant future" awaiting it. Behring and Kitasato seem by their studies to have arrived at a method of attenuation of the diphtheritic virus by which guinea-pigs may be rendered immune against diphtheria, and an injection of trichloride of iodine is said to have the same effect in animals that have been inoculated with the Löffler bacillus. An animal in which Behring's serum has been injected is found weeks afterward to be protected against powerful doses of the virulent toxine.

At the present time, these experimental notions seem for many reasons to be with difficulty applicable to man, and often when the physician is called in, the toxine has already made irreparable ravages in the economy. The method of sero-therapy will, however, be perfected and future experimenters will, perhaps, succeed in obtaining a curative serum still more active, or they will isolate the antitoxic principle, which will be easier to manage.

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MEDICAL NOTES.

Notification of Tuberculosis. — The Philadelphia County Medical Society has appealed to the Board of Health, of Philadelphia, to place tuberculosis upon the list of contagious diseases to be reported to the Board.

Yellow Fever. — The outbreak of yellow fever at Brunswick, Ga., has increased steadily the last week. On October 1st there were twelve new cases reported and this number has increased daily until there are now about thirty new cases each day. The death-rate so far has been low. The disease, which appeared at Jessup October 1st, has not assumed a serious aspect there as yet.

Cholera. — The number of cases of cholera reported from infected districts in Europe is steadily diminishing; but there is a constant increase in the number of places reported infected. This is especially true in Spain and Holland, where widely separated districts are reporting each a few cases daily. In Italy there is a decided improvement in the epidemic, both in Palmero and Leghorn and Naples where there are but a few new cases. In Russia there is a very large number of cases, with a heavy mortality. Moscow, Kieff, Podolia and Nijni Novgorod are the most severely afflicted, having a total of about seven hundred deaths a week with a constantly increasing number of cases throughout the provinces. So far the quarantine station at El Tor has been remarkably free from the disease and but one case has occurred among the pilgrims.

An Anomalous Biceps Muscle. — Thebault recently showed to the Anthropological Society of Paris a human biceps muscle which had three supernumerary muscular bundles. One rose from the long belly of the biceps and was inserted in the pectoralis major. A second had its origin from the fleshy body of the muscle and joined the brachialis anticus. The third bundle extended from the upper surface of the muscle to the superior margin of the capsule of the shoulder-joint. This anomaly is analogous to the condition found in the gibbon.

Paris Water-Supply. — The doubts at first entertained as to the sufficiency of the new water-supply of Paris, have been completely cleared away. The 110,000 cubic metres delivered by the new pipes from Avres are more than sufficient; and even the long drought failed to overtax the supply, 28,000 cubic metres more than last year having been available. The Seine water will soon be no longer used, as plans have been submitted to bring to Paris water from Breuil. The effect of this new water-supply will be to greatly improve the health of Paris.

Medical Fees in Russia. — An official regulation of medical fees is to be exercised by the Russian Government. There are three classes, divided according to the Russian social scale which is in itself somewhat complicated. The obligatory fee in each class is proportionate to the supposed ability to pay. The first class includes capitalists, landed proprietors, manfacturers, bankers and merchants in large cities who are expected to pay a fee of five roubles. The second class, professional men and employés of the seventh and eighth class, pay three roubles, while all others, villagers, etc., are to be treated for thirty kopeks.

BOSTON AND NEW ENGLAND.

Report on Sanitary Legislation. — At the next meeting of the Section for Clinical Medicine of the Suffolk District Medical Society, October 18th, the committee appointed to secure from the legislature improved sanitary legislation will make its final report.

Public Bathhouses. — The Boston public bathhouse statistics for the past summer show a smaller attendance than that of last year, there being a difference of nearly 120,000 in the total number of bathers. The houses for men that are most largely patronized are those at L Street, South Boston, and at Craigie's Bridge, and those most used by women at the Charles River Bridge and at M Street. There were 159,771 bathers in June, 430,505 in July, 358,905 in August, and 88,297 in September. The total number of men was 825,614, and of women 181,864.

Conference of Charities and Correction. — The first New England Conference of Charities will be held in Channing Church, Newton, on October 24th, 25th and 26th. Besides the general subject of charity organizations, sessions will be devoted to the discussion of "The Feeble-Minded," "Probation, in Relation to Punishment of Crime," and "Destitute, Neglected, and Morally Exposed Children."

Recent Bequests. — The will of the late Dr. Parsons, of Providence, bequeathes his medical library to the Rhode Island Medical Society, and four thousand dollars to the Rhode Island Hospital, to establish a free bed in memory of his father, Usher Parsons. The residue of the estate, after paying all of the bequests, is to go to the Rhode Island Hospital. The estate is reported as very large.

NEW YORK.

Professor von Helmholtz's Visit. — Professor von Helmholtz sailed for Germany on October 7th by the steamer *Saale*. On the evening of the 6th, he delivered an address on the ophthalmoscope at the

College of Physicians and Surgeons; after which a reception was given him at Columbia College by President and Mrs. Low. On the following night a reception was given in his honor at the Century Club. During his stay in New York Dr. Helmholtz was the guest of Dr. Herman Knapp, and an interesting episode of his visit was his meeting with Dr. Alexander Graham Bell, whose invention of the telephone was one of the results of the professor's investigations into the laws of sound.

Death of Dr. Richards. — Dr. Thomas L. Richards, one of the young physicians who contracted small-pox from the case at the Vanderbilt Clinic which was mistaken for one of chicken-pox, died on October 1st at the Riverside Hospital on North Brothers' Island. The other physician, Dr. Norris, who had the disease in a very light form, and who, during his convalescence, rendered all the service that he could to his unfortunate comrade, was discharged from the hospital cured on the very day that Dr. Richards died.

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Miscellany.

SMALL-POX IN THE "GOOD OLD DAYS."

A correspondent sends to the *Lancet* the following curious advertisement of the last century, as a comment on the present continuance of antivaccination sentiment. The prevalence and dread of small-pox in those days is hardly to be imagined now:

> "Wanted, a man between twenty and thirty years of age, to be a footman and under butler in a great family; he must be of the Church of England and have had the small-pox in the natural way. Also a woman, middle-aged, to wait upon a young lady of great fashion and fortune; the woman must be of the Church of England, have had the small-pox in the natural way, very sober, steady and well-behaved, and understand dress, getting up lace and fine linen and doing all things necessary for a young lady that goes into all public places and keeps the best company. Enquire of the printer of this paper. — Oct. 1, 1774."

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BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30th are as follows:

The number of new patients treated at the Central Office is 26,405, classified as follows:

Medical Department. — Men, 2,838; women, 5,212; children, 3,647; total, 11,697.

Surgical Department. — Men, 2,311; women, 1,095; children, 824; total, 4,230.

Department for Diseases of the Skin. — Men, 875; women, 595; children, 342; total, 1,812.

Department for Diseases of the Nervous System. — Men, 649; women, 571; children, 79; total, 1,299.

Department for Diseases of the Throat and Nose. — Men, 888, women, 816; children, 540; total, 2,244.

Department for Diseases of Women. — Women, 919.

Department for Diseases of the Eye. — Men, 214; women, 206; children, 194; total, 614.

Department for Diseases of the Ear. — Men, 178; women, 194; children, 207; total, 579.

Department for Diseases of the Genito-Urinary System. — Men, 1,694; women, 45; children, 1; total, 1,740.

Department for Diseases of the Rectum. — Men, 132; women, 65; children, 5; total, 202.

Orthopedic Department. — Men, 39; women, 36; children, 51; total, 126.

Dental Department. — Men, 215; women, 263; children, 435; total, 913.

The number of visits made by patients, old and new, at the Central Office is 63,876, classified as follows: Medical, 22,346; surgical, 41,530; total, 63,876. The number of patients treated in the Districts is 16,326 (including 213 cases of midwifery) classified as follows: Men, 2,848; women, 635; children, 7,127; total, 16,326. The results of treatment in the Districts are as follows:

Discharged, cured or relieved	14,925
Removed to hospitals	1,067
Died	327
Remaining under treatment	82
	16,401
Under treatment at last annual report	75
	16,326
The number of patients treated at the Central Office and in the Districts is	42,731
The number of cases of midwifery attended during the year	213
The number of cases attended since July, 1856	7,052
Whole number of patients since October, 1,796	1,203,978
Whole number of patients since July, 1856	1,085,175
Average daily attendance at the Central Office	210
Largest number present any one day, September 25th	336
Smallest number present any one day, December 26th	42
Number of recipes put up at the Central Office during the year	68,045
Number of house recipes	52,869
Number of district recipes	15,176
Largest number put up in one day, April 10th	378
Smallest number put up in one day, December 26th	49
Number of paid recipes	62,375
Number of free recipes	5,770

The following changes in the staff have been made:

Surgeons. — Dr. Rufus E. Darrah in place of Dr. Arthur K. Stone.

Physicians. — Drs. William H. Prescott, J. J. Thomas, Augustus S. Knight, William E. Chenery, John L. Morse, in place of Drs. Dixwell, Sherman and Washburn.

Department for Diseases of the Nervous System. — Dr. Frederic Coggeshall. Assistant, Dr. William R. Woodbury in place of Drs. Bullard and Burr.

Department for Diseases of the Throat and Nose. — Dr. William S. Boardman in place of Dr. Coolidge, Jr.

Department for Diseases of the Eye. — Drs. Edward L. Parks and Frederic A. Davis in place of Drs. Hall and Jack.

Department for Diseases of the Ear. — Assistant Dr. Joseph Hicks in place of Dr. Bryant.

Department for Diseases of the Genito-Urinary System. — Dr. Charles M. Whitney in place of Dr. Tilden.

Department for Diseases of the Rectum. — Dr. Hodges resigned.

Orthopedic Department. — Dr. Frank S. Whittemore in place of Dr. Darrah.

District Physicians. — Drs. Edward A. Peace, Malcolm Stone, Benjamin Tenney, Edwin W. Dwight, Franklin G. Balch, John B. Blake, Horace D. Arnold, Frederic B. Lund, John Dane in place of Drs. Knight, Craigin, Hicks, Wentworth, Thomas, Chenery, Prescott, Whittemore and Holden.

Apothecary. — Joseph S. Lang. Assistant Apothecaries. — Wallace Maccullum, Arthur D. Macdonald.

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OBITUARY. — WALTER GAY STEBBINS, M.D.

Dr. Walter G. Stebbins died of diphtheria at the Boston City Hospital, October 8th, aged twenty-eight years. He was a son of the late Judge Stebbins and was born in Springfield, Mass. He graduated from Yale College, where he held high rank as a scholar, in 1886. After studying law for a year, he entered the Harvard Medical School in the fall of 1888, and received his degrees of A.M. and M.D. *cum laude* in 1892. He served as surgical house-officer at the Boston City Hospital for eighteen months ending last

January. In his work at the hospital he showed a good surgical judgment and scrupulous attention to the comfort of his patients, many of whom had occasion to be grateful for acts of personal generosity and kindness which he went out of his way to render. Following this service he was house-officer at the Boston Lying-in Hospital from March to September, his work being always faithful and invariably stamped with a deep impress of his individuality. After a brief vacation he returned to the City Hospital for the few weeks prior to his departure for Europe, to act as Executive-Assistant and Admitting-Physician in the absence of one of the regular staff.

He began his duties at the hospital on Tuesday noon, September 26th. On that afternoon he examined, among other cases an applicant for admission to the diphtheria ward, and on the following day, two more. Thursday evening he complained of a slight soreness of his throat. On examination nothing was to be seen but a few follicular patches on one tonsil and a general redness. Friday night a membrane had formed on that tonsil and a few follicular patches were to be seen on the other tonsil. That night a diagnosis of diphtheria was made, which was verified on microscopic examination. Early on Saturday morning September 30th, he was removed to a private room in the diphtheria ward, and vigorous treatment was begun. Sunday morning he developed an intensely septic condition, and from that time the decline was constant and progressive. His courage was unbroken, and he had faith in his recovery to the day of his death.

He was a close observer and a clear, logical thinker, deeply interested in the more serious relations of his profession. Tenacious of purpose and of great though unostentatious industry, he was singularly modest and genuine in his manner. To his friends there was a sense of something rare in his friendship, for his outward reserve and air of self-absorption was not readily broken; but when acquaintance had ripened into friendship, there was shown great depth and warmth of kindliness. A keen sense of humor and an unexpected vein of drollery made him a most charming companion. His sense of honor was fine and instant. He was conscientious, generous and self-reliant, retiring in disposition and exceedingly courteous in manner.

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Correspondence.

A STATEMENT OF SOME FACTS IN REGARD TO THE ORIGIN OF THE PRACTICAL APPLICATION OF ANÆSTHESIA IN SURGERY.

BOSTON, October 2, 1893.

MR. EDITOR: — The following, my contribution to a discussion in the Oral Section of the Pan-American Medical Congress last September, I should like to have go on record in the JOURNAL, which already has published so much of value in regard to the introduction of ether as an anæsthetic. That sulphuric ether was repeatedly used as an anæsthetic by Dr. Long of Athens, Ga., in his surgical practice as early as 1840, seems indisputable from the reliable evidence collected and published by the late Dr. Marion Sims of New York, but a few years ago.

The fact that Dr. Long did not publish it to the world does not affect the priority of its use.

Next comes, about four or five years later, the experimental discovery and practical application by Dr. Wells of Hartford, Conn., of the anæsthetic properties of nitrous oxide gas.

Then come facts known to me personally, as I was "behind the scenes." About a year or more later, Dr. Morton, remembering vaguely that Dr. Wells had faith in anæsthesia by the inhalation of something, applied to Dr. Jackson with the request if there was [illegible] be so used. Dr. Jackson informed him that in his personal experience, sulphuric ether had relieved his suffering from the accidental breathing of chlorine gas, adding a caution in regard to its use. Dr. Morton, finding Dr. Jackson's information correct in regard to the "letheal" effects of sulphuric ether, by persuasion induced Dr. Jackson to unite with him in procuring a patent to control its use. Dr. Jackson's medical friends reminding him of the breach of ethics in getting such a patent, he withdrew from the patent. It was *then* that Dr. Morton claimed the sole discovery of ether anæsthesia, and wishing to have some other respectable backing, he went to Dr. John C. Warren, then the head of the surgical staff of the Massachusetts General Hospital, and said, in his persuasive way, that he had discovered a "compound," which he called "letheon," that would prevent pain in surgical operations, and would be pleased to show its effects on some hospital patient.

Dr. Warren consented to the trial, which proved successful; but he, with the rest of the staff, declined to adopt or endorse it unless they knew what it actually was. Of course, Dr. Morton had to tell them that it was sulphuric ether. They then began its use; and it was *their endorsement* which gave it the successful start in the surgical world, without which it is very probable it might have fallen into the list of empirical fancies.

The summing up of these facts seems like this: First, Dr. Long's successful private practice, followed after several years by Dr. Wells's success, which his diffident nature hindered him from pushing to notoriety. Then Dr. Jackson's instruction to Dr. Morton, which he followed out and brought to the notice of Dr. Warren and the surgical staff of the Massachusetts General Hospital; which staff, having eliminated its elements of quackery, tried effectually, and with their substantial endorsement gave it to the world. To that *endorsement*, it seems, is due the permanent consideration that anæsthesia has since received.

JACOB L. WILLIAMS, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 30, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,891,[illegible]	[illegible]	305	[illegible]	12.00	[illegible]	1.95	4.20
Chicago . . .	1,1[illegible]	[illegible]	[illegible]	25.62	[illegible]	[illegible]	[illegible]	4.41
Philadelphia .	1,115,[illegible]	[illegible]	[illegible]	19.20	[illegible]	7.80	3.30	[illegible]
Brooklyn . .	[illegible]	330	152	16.50	11.70	9.00	.60	4.20
St. Louis . . .	[illegible]	—	—	—	—	—	—	—
Boston . . .	[illegible]	[illegible]	[illegible]	22.36	14.19	[illegible]	.86	3.01
Baltimore . .	[illegible]	—	—	—	—	—	—	—
Washington .	[illegible]	107	[illegible]	[illegible]	12.09	8.37	7.44	7.44
Cincinnati . .	[illegible]	94	41	—	7.42	[illegible]	[illegible]	1.06
Cleveland . .	290,000	77	35	[illegible]	[illegible]	11.70	[illegible]	[illegible]
Pittsburg . .	[illegible]	[illegible]	[illegible]	34.29	[illegible]	13.97	[illegible]	5.08
Milwaukee . .	250,000	[illegible]	41	40.04	4.62	24.64	3.08	7.70
Nashville . .	[illegible]	22	[illegible]	18.20	27.30	4.55	4.55	[illegible]
Charleston . .	[illegible]	[illegible]	10	[illegible]	21.04	—	[illegible]	2.63
Portland . . .	[illegible]	7	1	[illegible]		—	14.28	—
Worcester . .	[illegible]	46	19	[illegible]	13.02	15.19	6.51	6.51
Fall River . .	[illegible]	[illegible]	33	[illegible]	3.92	[illegible]	1.96	1.96
Lowell . . .	87,191	31	[illegible]	[illegible]	[illegible]	22.61		3.23
Cambridge . .	77,100	18	10	[illegible]	[illegible]	27.77	5.55	[illegible]
Lynn	[illegible]	[illegible]	10	25.00	7.14	10.71	—	3.57
Springfield . .	[illegible]	19	6	[illegible]	—	10.52	10.52	[illegible]
Lawrence . .	[illegible]			—				
New Bedford .	[illegible]	18	[illegible]	44.44	11.11	[illegible]	5.55	[illegible]
Holyoke . . .	41,[illegible]	[illegible]	[illegible]	[illegible]	11.11	55.55	—	—
Salem	32,233	10	[illegible]	[illegible]	—	10.00	—	10.00
Brockton . .	32,140	[illegible]		—	12.50	—	—	—
Haverhill . .	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Chelsea . . .	30,264	[illegible]	3	—	7.69	—	—	—
Malden . . .	[illegible]	4	2	[illegible]	50.00	25.00		
Newton . . .	[illegible]			—	—	—	—	—
Fitchburg . .	[illegible]	11	4	18.18	[illegible]	[illegible]	9.09	—
Taunton . . .	[illegible]	[illegible]	1	50.00	[illegible]	[illegible]	—	[illegible]
Gloucester . .	[illegible]	16	6	[illegible]				—
Waltham . .	[illegible]	6	[illegible]	50.00	16.66	50.00		—
Quincy . . .	19,642	4	1	—	—	—	—	—
Pittsfield . .	[illegible]	1	1	—	—	—	—	—
Everett . . .	[illegible]	[illegible]	2	—	—	—	—	—
Northampton .	16,331	[illegible]	[illegible]	—	—	25.00		—
Newburyport .	14,073	[illegible]	[illegible]		12.50	—		—
Amesbury . .	[illegible]	—	2	66.66		33.33	33.33	—

[illegible]
[illegible] diphtheria and croup,

diarrhoeal diseases, whooping cough, erysipelas and fevers), 180, diarrhoeal diseases 302, consumption 310, acute lung diseases 219, diphtheria and croup 120, typhoid fever 91, whooping-cough 34, scarlet fever 20, cerebro-spinal meningitis 19, measles 11, small-pox 10, malarial fever 7.

From whooping-cough Chicago 9, Philadelphia 8, New York 6, Brooklyn 4, Pittsburg 3, Boston 2, Washington and Cincinnati 1 each. From scarlet fever Philadelphia and Boston 3 each, New York, Chicago, Pittsburg and Milwaukee 2 each, Brooklyn, Washington, Cincinnati, Cleveland, Lowell and Somerville 1 each. From cerebro-spinal meningitis New York and Washington 4 each, Worcester and Lynn 3 each, Chicago 2, Philadelphia, Brooklyn and Gloucester 1 each. From measles New York 8, Milwaukee, Nashville and Springfield 1 each. From small-pox New York 10. From malarial fever New York 4, Brooklyn 3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending September 23d, the death-rate was 19.7. Deaths reported 3,897; diarrhoea 534, diphtheria 46, fever 88, whooping-cough 80, scarlet fever 63, measles 21, small-pox (London and Bradford 2 each, West Ham and Birmingham 1 each) 6.

The death-rates ranged from 13.7 in Portsmouth to 30.3 in Preston; Birmingham 19.8, Bradford 18.8, Cardiff 16.5, Halifax 17.6, Leeds 24.0, Leicester 18.4, Liverpool 25.0 London 18.9, Manchester 18.9, Newcastle-on-Tyne 21.2, Sheffield 22.3, Sunderland 26.8, West Ham 18.6.

METEOROLOGICAL RECORD,

For the week ending September 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..24	30.17	62	70	54	75	71	73	W.	N.W.	10	3	C.	O.	
M..25	29.95	62	68	55	89	95	92	S.E	S.W.	10	12	O.	R.	.05
T..26	30.30	52	[illegible]	48	80	66	73	N.W.	S.	15	6	F.	O.	.02
W..27	[illegible]	[illegible]	54	47	80	84	[illegible]	N.E.	N.E.	6	8	O.	O.	
T..28	[illegible]	52	58	[illegible]	76	83	80	N.W.	N.	12	6	O.	C.	
F..29	[illegible]	48	[illegible]	43	73	85	79	N.E.	N.	12	17	F.	R.	.01
S..30	30.00	52	60	[illegible]	[illegible]	56	60	N.	N.W.	20	6	C.	O.	.02
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 30, 1893, TO OCTOBER 6, 1893.

By direction of the Secretary of War, leave of absence for three months is granted **Captain William D. Crosby**, assistant surgeon.

Majors Alfred A. Woodhull and **Alfred C. Girard**, surgeons, are detailed as delegates to represent the Medical Department of the Army at the annual meeting of the American Public Health Association to be held at Chicago, Ill., from the 9th to the 14th of October, 1893.

MEDICAL SCHOOL OF HARVARD UNIVERSITY.

Evening Lectures.

The Faculty of the Harvard Medical School invite graduates in medicine to attend on Wednesday evenings, at 8 o'clock, at the Medical School, any or all of the evening lectures on special subjects which have been arranged according to the following schedule:

Prof. C. J. Blake. "Middle-ear Operations." Two lectures. October 18th, 25th.

Prof. Thomas Dwight. "The Topographical Anatomy of the Thorax and Abdomen, illustrated by frozen sections." Two lectures. November 1st, 8th.

Asst. Prof. M. H. Richardson. "The Applied Anatomy and Surgery of the Vermiform Appendix," "The Anatomy and Surgery of the Gall-Bladder," and "Abdominal Emergencies." Three lectures. November 15th, 22d, December 6th.

Prof. H. P. Bowditch. "Anthropometry and the Laws of Growth." Two lectures. December 13th, 20th.

Prof C. S. Minot. "Structure and Functions of the Uterus." Two lectures. December 27th, January 3d.

Asst. Professor Ernst. "Advances in Bacteriology." Two lectures. January 10th, 17th.

Dr. Edward Cowles. "Mental Physiology." Two lectures. January 24th, 31st.

Dr. W. F. Whitney. "The Pathology of the Fallopian Tubes, including Tubal Pregnancy." Two lectures. February 7th, 14th.

Prof. E. S. Wood. "Urinary Diagnosis." Two lectures. February 21st, 28th.

Dr. John Homans. "Ovariotomy." Two lectures. March 7th, 14th.

Dr. J. J. Putnam. "The Present Status of the Therapeutics of Nervous Diseases." Two lectures. March 21st, 28th.

Dr. P. C. Knapp. "Traumatic Nervous Affections." Two lectures. April 4th, 11th.

Dr. Myles Standish. "Functional Nervous Disturbances due to Ocular Errors." One lecture. April 18th.

Asst. Prof. T. M. Rotch. "Infant Feeding." Two lectures. April 25th, May 2d.

Prof. F. W. Draper. "A Special Medico-Legal Subject." One lecture. May 9th.

Dr. Henry Jackson. "Diseases of the Heart." Two lectures. May 16th, 23d.

SOCIETY NOTICE.

Massachusetts Medical Society, Suffolk District. – The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, October 18th, at 8 o'clock.

Papers: "Malignant Endocarditis," Dr. G. M. Garland.

"A Case of Dysphagia and Dilatation of the Œsophagus with Pneumatosis," Dr. G. Liebmann.

Report of the committee appointed by the Section on Clinical Medicine of the Suffolk District Medical Society: "To Secure from the Legislature Improved Sanitary Legislation," by Dr. David W. Cheever, Chairman.

F. C. Shattuck, M D., *Chairman.*
Henry Jackson, M.D., *Secretary.*

APPOINTMENTS.

Drs. Franklin G. Balch, John B. Blake, John Dane, Edwin W. Dwight, Frederic B. Lund and **Edward A. Pease** have been appointed district physicians to the Boston Dispensary.

RECENT DEATHS.

Walter Gay Stebbins, A.M., M D., M.M.S.S., died at the Boston City Hospital, October 8th, aged twenty-eight years.

Dr. Cesare Olivieri, died in Naples, September 17th, aged seventy-one years He was one of the most conspicuous figures in the Naples school, being the director of the Pellegrini Hospital and clinical lecturer at the Incurabili. He had for some time been afflicted with a grave tracheal malady and underwent a few days ago the operation of tracheotomy at the hands of his pupil, Dr. Mottola. Everything had gone well and artificial respiration was established and maintained, without inconvenience, but in the early morning of the 17th, Dr. Mottola on approaching the bedside saw that the throat had been wrapped round and round with a towel. He addressed Dr. Olivieri, and, receiving no answer, found that he was dead, having withdrawn the canula from the throat, which he had afterwards enveloped in the manner described. On a table was a letter in which Dr. Olivieri, in despair of ever being cured of his malady and shrinking from the prospect of continued suffering, had expressed his determination to put an end to his days.

BOOKS AND PAMPHLETS RECEIVED.

Chloroma and its Relation to Leukæmia. By George Dock, M.D. Reprint. 1893.

The Bile Salts, Urea, etc., as Therapeutic Agents. By Samuel G. Dixon, M.D. Reprint. 1893.

A New Instrument for Controlling Tonsillar Hæmorrhage. By H. Hoyle Butts, M.D. Reprint. 1893.

Address on Hygiene. Delivered by Prof. Samuel G. Dixon, M.D., at the meeting of the State Medical Society, Williamsport, Pa.

Results in Ninety Cases of Pulmonary Tuberculosis Treated at the Winyah Sanitarium at Asheville, N. C., from May 1, 1891 to May 1, 1892, with a Comparison of Results Obtained With and Without the Use of Tuberculin. By Karl von Ruck, M.D., Asheville, N. C. Reprint. 1893.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S., Lecturer on Anatomy at St. George's Hospital, London. New American, from the thirteenth enlarged and improved English edition. Edited by T. Pickering Pick, F.R.C.S, Examiner in Anatomy, Royal College of Surgeons of England. Philadelphia: Lea Brothers & Co. 1893.

Original Articles.

ISOLATING WARDS AND HOSPITALS FOR INFECTIOUS DISEASES.[1]

[illegible], M.D.,
[illegible]

THE finding of the "Rosetta Stone" unlocked the secret which the ages had thrown over Egyptian hieroglyphics. The discovery of the bacillus was the key to the mystery of the cause, development and spread of infectious diseases. The impossible became possible. The pathological laboratory has demonstrated that infection is a micro-organism whose characteristics are being gradually revealed; and, what is of greater importance, it has taught us the agents for its destruction.

The physical laboratory has not exhausted the limits of the power and usefulness of electricity, nor has the pathological laboratory yet worked out the full scope of infection in its multifarious and far-reaching destructiveness.

These investigations, and the deductions from them, will make the basis of future professional treatment and the management of infectious diseases; but the economic and social bearings of the problem demand study from other points of view. Time forbids an historical or statistical review, and I proceed at once to briefly work out a few hospital equations that are paramount in the management of infectious diseases.

This audience needs not to be told that on the first appearance of an infectious disease, it should be immediately removed to a place of isolation, not only for its proper treatment, but for the protection of others. If the case appears in a home, probably an attempt will be made to isolate there, usually resulting in a separation that does not isolate. Epidemics are created by such futile attempts. Sanitary practice does not keep pace with sanitary knowledge. Not removing a person with an infectious disease to a hospital or some place securing absolute isolation, should be held as a punishable offence against society. Public health will never be assured till an enlightened popular sentiment co-operates to this end.

Every general or cottage hospital should have a suitable place to promptly isolate all cases of infection that may arise within its own walls. Infection, in this connection, includes not only eruptive fevers, but also all diseases liable to convey surgical infection. In recent years, whenever a general or well-appointed cottage hospital is built, a separate building is found among its resources for this purpose. But there are many pretentious hospitals having more than one hundred beds for general medical and surgical diseases, founded twenty years or even less, without such provision. The same is true, not only in America, but in England, even in London, owing to the original defective plan, or for want of the money necessary for the construction of such a building. There are scores of pretentious hospitals in the United States where provisions for infectious cases cannot be found outside the buildings where such cases may arise. When an infected case appears, the usual policy is to temporize by placing it in some part of the building supposed to be less exposed than the ward where the case previously was assigned. This makeshift is never satisfactory; and if other persons escape, it is usually by a happy chance. No hospital of modern construction should for a moment hazard any compromise in providing proper isolation in a building for exclusive use of infectious cases. With such a building properly equipped, and with a suitable ratio of intelligent nurses, whose hospital life is regulated by discreet and rational rules, the management of infection becomes somewhat easier. In wards having a score or less of patients suffering with a variety of infectious diseases, the regulations demand great exactness. The problem becomes yet more difficult when the wards number from forty to fifty such cases. In municipal hospitals having several hundred beds, many infectious cases, eliminated from the regular medical and surgical wards, must be provided for. This aggregates quite an array of infectious cases, in one ward for men, another for women. Besides the complication of infection, requiring the greatest skill, these wards are generally attended by the Visiting and House Staff, who are likely to have duties in other parts of the hospital. The relations of these wards to other parts of the house, in the matter of domestic service, supplies, clothing, laundry work, and the infinite number of minute adjustments, all combine to exact the most judicious and vigilant *régime*. Many cities or large towns of from 8,000 to 15,000 inhabitants have cottage hospitals, which are forced to meet the requirements of their communities. They cannot select their cases where public opinion is not yet rightly educated on such matters, and the hospital is apt to condone harmful admissions, under the delusion of keeping peace. Medical science demonstrates that public welfare makes imperative special isolating wards, not only in municipal but in cottage hospitals. This is more easily accomplished in hospitals that are private corporations, but is difficult in hospitals dependent on municipal appropriations.

There is a variety of practice about admitting to the wards connected with general hospitals such infectious diseases as scarlet fever, diphtheria, measles and the ordinary infectious diseases occasionally epidemic. But no hospital, either large or small, municipal, corporate or cottage in its organization, should receive infectious fevers into its general wards. Is it absurd to state a rule so self-evident? I have frequently seen, in this country, a case of scarlet fever or diphtheria simply removed from the other children by putting it in a room by itself — a mere pretence of isolation. I have also seen in a prominent London hospital, with a medical school attached, cases of scarlet fever and diphtheria in beds contiguous to those of patients with ordinary medical diseases. Exclude infectious diseases from all general hospitals, unless provided with separate special buildings for each disease. These wards should be absolutely isolated by distance, with separate service, both nursing and domestic; and the physicians and surgeons in charge, as well as the house staff, should have no active connection with the general wards. Every precaution should be taken to render the care and treatment, if not absolutely, yet practically, independent, so as to reduce the possibility of carrying infection to other parts of the hospital. With obvious advantages, it is far from the ideal plan. The difficulties and dilemmas of infectious-disease wards attached to a large hospital, are so numerous that the wisest policy seems to forbid it, except as a relief for cases developing within its own walls. In large communities, the only system that is beyond criticism is to make for infectious diseases a separate establishment, independent and isolated. Bear in mind in this discussion that cholera, typhus fever and small-pox are excluded. Obviously, from their deadly nature, these must each be treated in a hospital specially devoted to its care, isolated in location as well as classification, although not necessarily under different boards of government. It is comparatively easy to lay down dictums indicating the best method, but pernicious conditions exist in many American cities which complicate the problem. It is a lamentable fact that the cities in this country possessing accommodations for infectious diseases among the poorer classes, to say nothing of the "well-to-do," can be counted on the fingers of one hand. To the best of my knowledge, Boston is the only large city where a hotel guest or a citizen in good circumstances can obtain suitable accommodations in a hospital if he is ill with diphtheria, scarlet fever or small-pox. In most cities the better class of corporate general hospitals absolutely refuse him admission. He is referred to the health authorities. What then? Generally the resources at their disposal are merely barracks or old buildings, diverted to hospital purposes after being abandoned as unsuitable for uses less humane. I do not forget the numerous cottage hospitals, with special isolating wards, which have sprung up within the past fifteen years in our more thrifty and enterprising towns. This indicates a growing intelligence in medical matters and the possible advance to separate buildings.

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[1] [illegible]

But it is in the larger municipalities where the proper accommodations are most deplorably lacking. This situation is the more humiliating, considering how many American cities and towns erect new and pretentious hospitals, at almost needless expense, on the best modern lines, while little or no progress is made towards establishing isolation hospitals for the poor, to say nothing of buildings to which the better class would resort. We recognize the superior systems employed in European capitals, especially in Germany, and also in the health districts of Great Britain, notably the urban sanitary districts.

Political methods, so rampant in municipalities, greatly affect sanitation and public health, and too often prove a stumbling-block to progress. The present rapid strides in scientific, educational and industrial affairs, and in public works, absorb so much energy and capital, that public sanitation will wait indefinitely, unless the medical profession employs Wendell Phillips' favorite weapon, "Agitate, agitate!" Optimists would fain believe that the trend of education, the truths of the laboratory, the altruistic spirit of the times, will eventually make clear to average intelligence the importance of having the proper means for stamping out the deadliest foe to public health. It is the duty of hospital workers and sanitarians not to cease forcing upon public authorities the necessity of intelligent action, until every municipality, through its public treasury, shall provide special hospitals always available for infectious diseases. Is it not the wisest policy to put such hospitals under the immediate control of the local board of health? They have so close a connection with other vital matters properly belonging to health boards, that it conduces to unity of action to have the suppression of infection under one authority — a practice that obtains in Great Britain.

But what general plan shall be pursued for special infectious disease hospitals, say, in a city of about 500,000 inhabitants, with a total requirement of perhaps 250 beds?

The first step is a site sufficiently large for liberal distribution of buildings, reasonably easy of access, and yet well isolated from sections thickly populated. In the present state of public opinion, if it is *not* easy of access, it defeats its own ends. Small-pox, like cholera and typhus, should be provided for in a hospital by itself; and the opinion of so eminent an authority as Dr. Thorne Thorne, that a small-pox hospital should not be within a mile of an inhabited house, is a wise and safe guide. As in Glasgow, small-pox might be cared for within the boundaries of an infectious disease group of buildings, but administered by itself, and having no physical contact with the rest of the establishment. Other divisions should provide for the ordinary infectious diseases, each disease having its own buildings with divisions for each sex. Each building may be absolutely separate, and yet a component part of the whole. The group should have an administration building, a domestic building, a service house containing the heating installation, laundry, mortuary, and a special home for nurses and the domestic service. Nurses should always, especially in infectious disease hospitals, be given quarters of their own in a building not occupied by patients, and of a quality to attract the class of women most desirable for hospital work.

The wards should be of moderate size, not to exceed thirty beds. The number of buildings for each disease should be sufficient to allow one building to, so to speak, "lay fallow" for renovation and disinfection. This reserve is a large factor in reducing the mortality in an infectious-disease hospital. This generous installation of site, buildings and appointments, is not always practicable, either from the topography of a city, an available site, or the financial condition of a municipality. Such establishments, we are happy to say, do exist. The Belvedere Hospital for Infectious Diseases in Glasgow, Scotland, is a most notable example. It covers thirty-one acres of land, and has thirty-five buildings with accommodations for infection usually prevalent in a large city. No better argument for insolation hospitals can be adduced than a rehearsal of the experience of the health authorities of Glasgow in changing the most unhealthy city in Great Britain, with the largest mortality, into a clean, healthful city, with a low death-rate.

A more feasible but less perfect arrangement is a site in or near the thickly-settled portions. Insure the best possible isolation by high walls and perfect administration. Provide separate administration and service buildings, give each disease and sex its own wards, and keep the ratio of beds to patients as liberal as possible. Such provisions, intelligently planned and wisely administered, will afford a powerful weapon to crush out infection. Liverpool, a city especially exposed to infection, has an admirable instance of a hospital of this class; and so eminent an authority as Mr. Henry C. Burdett, assures us, that, "on the whole, this hospital may fairly be regarded as one of the best arranged infectious hospitals yet erected. Considering the restricted site, the arrangements are most satisfactory."

The opinion is gaining ground among hospital superintendents and sanitarians that large numbers of infectious cases cannot be treated to the best advantage under one roof without increasing the mortality-rate. This has been demonstrated in hospitals and institutions devoted to the care of sick children. The ideal way to treat a case of acute disease highly infectious, would be to have two rooms which the patient should occupy alternately for twelve hours, with proper safeguards in all the conditions of transfer. The same law of rotation, with a larger proportion of time, would be admirable for the occupancy of infectious disease wards. Many small, isolated buildings on one site yield better results than a few buildings of a larger size on a restricted site. Increased cost is an objection to this. Unfortunately, public opinion, squeamish and short-sighted in public sanitation, backed by legislators ambitious for low tax-rates, and cajoled by the always sensitive tax-payer, is an active and potent obstruction to the more intelligent methods.

Fire departments recognize that it is the first five minutes that counts; so the first case of infection is the most important one to fight. Dr. Thorne Thorne has made the most exhaustive study ever attempted on infectious disease hospitals, and he instances scores of examples to show that epidemics have been crushed by having the means to isolate the first case. He insists that such buildings should be constructed in non-epidemic times, rather than under conditions of panic, and that immediate and permanent usefulness of hospitals is impaired by hurried erection.

In conclusion, I am asked how the City of Boston ranks in the means for the suppression of infectious diseases.

Boston has possessed, since 1877, a small-pox hospital with accommodations for fifty ward patients, and six rooms for private paying patients. By the irony of fate the last private patient was a well-known Boston poet. The hospital is half a mile from the nearest habitation, located on an excellent site, well-appointed as most cottage hospitals, which it resembles in external appearance. It is to-day, and has been every day during the last sixteen years, occupied by a man and his wife, both nurses experienced in the disease, and ready at all times to receive a patient. It has its special ambulance which can always be summoned by telephone, and a reserve of portable huts and protected nurses when many cases occur. Dr. McCollom, the City Physician, confidently asserts that 150 small-pox patients can be properly provided for at forty-eight hours' notice. This, again, is a good illustration of Dr. Thorne's proposition; and the suppression of small-pox in Boston, and its very low mortality through a long series of years, is an object-lesson worth heeding.

The Boston City Hospital has 484 beds, distributed among eighteen wards, including a men's ward of ten rooms, each accommodating four cases, either of erysipelas, cellulitis, pus in any form, or any uncleanly case arising within our own walls or from outside. There is also a ward containing twelve rooms, accommodating forty-eight women, which receives similar cases, including pelvic or puerperal septic cases.

The hospital also has two other wards, one for scarlet fever and one for diphtheria, each having thirty-two beds for both free and pay patients. These are separate buildings, built in 1886, of high cost construction, and in air-supply, heating and ventilation, service rooms and special appointments, equal to the best of modern hospital wards; indeed, they are the most admirable of the hospital. In all respects they supply the same amount and quality of professional care, nursing and comforts afforded by any ward in the hospital, whether free or paying. The nursing is done by the nurses in the Training School, and the seniors of the House Staff are in turn isolated for attendance in the wards.

These wards are administered by the strictest regulations and are practically isolated; but their proximity to the general wards imperils others, and proves the correctness of my proposition that no wards designed for infectious fevers from without should be an integral part of a large general hospital. In spite of every safeguard, and after allowing for sources of infection from ward visitors and the dangers imminent to a hospital of 750 people, cases now and then do crop out that may fairly be attributed to the infectious fever wards. The labor involved in a large general hospital is always great and exacting. Ought it to be augmented by the strain of preventing the transmission of infection from special wards to the non-infectious wards?

During the last seven years, 752 cases of scarlet fever and 2,227 cases of diphtheria have been treated in these wards. It has given a wide experience of the dangers of isolation disease wards on the grounds of a large general hospital, and teaches "how not to do it."

This unhappy condition, I am glad to say, will soon be remedied. After a repeated and persistent course of education imposed by the hospital management upon the city authorities, Boston is constructing a special hospital for infectious diseases which I feel sure will be unrivalled in this country. The trustees already have $237,000 solely for this purpose. This, however, will not complete it, and $140,000 additional has been promised in the next loan bill, making $377,000 for this special purpose. Contracts have been made for $203,000, and the buildings are well under way. Time forbids a description of these buildings, but they are in the best lines of modern hospital construction, and intended for 250 patients, at a cost of about $1,500 per bed. The plans and details are the result of much study of eminent authorities, and will give Boston a strong weapon for fighting infectious diseases. For the present, it will be under the management of the Boston City Hospital, and will be administered in a manner equal, and we hope superior, to the general wards. The plans of these wards may be seen in the Boston City Hospital exhibit in the Anthropological Building.

In the May number of the *Forum*, the learned President of this Section, in an article on municipal sanitation, asks this question, "Where is the place to which a lady living in a boarding-house, or temporarily stopping at a hotel, could take her child afflicted with scarlet fever?"

In Massachusetts, the cities of Boston, Cambridge, and Newton, all possess such accommodations. Three other hospitals in New England have isolation disease wards, either under construction or projected. The isolating wards of the Boston City Hospital have private rooms for eighteen paying patients at $15.00, $20.00 and $25.00 per week. Their accommodations, treatment, nursing and general care, including diet, compare well with that usually given medical and surgical paying patients in first-class general hospitals.

Boston goes a step further. The hypothetical case of scarlet fever — and also any citizen, rich or poor — can have his clothing and all fabrics exposed to infection, taken for purification to the new and well-equipped sterilization house of the Board of Health and returned, without charge.

Hospitals are only one part of the splendid enginery demanded for working out the extermination of infectious diseases. I cannot forbear calling attention to the collateral means. There must be efficient local boards of health, co-operating with State boards, all of which are controlled by a central national organization under the United States government. The highest intelligence of expert sanitarians would thus penetrate all communities and concentrate action on a common foe.

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TRACHEOTOMY AND INTUBATION AT THE BOSTON CITY HOSPITAL.[1]

BY GEORGE W. GAY, M.D.,
Visiting Surgeon.

Previous to July 1, 1892, tracheotomy for croup had been done 514 times at the Boston City Hospital. One hundred and sixteen patients recovered (22 per cent.). Intubation has been done 502 times between December 31, 1886, and the above date. There were 91 recoveries (19 per cent.). In 58 instances both operations were performed, and only 7 recovered (12 per cent.).

A clearer statement of the facts would be as follows: primary tracheotomies 456, recoveries 110 (24 per cent.); intubations without tracheotomy 442, successful 90 (20 per cent.). This shows a difference of four per cent. in favor of the older operation.

Before the introduction of intubation 327 tracheotomies had been done and 95 recovered (29 per cent.). Since the new method came into vogue in this hospital in December, 1886, 129 primary tracheotomies have been done, with 15 recoveries (11 per cent.). During the latter period the ratio of recoveries under the various modes of treatment is as follows: intubations 20 per cent., primary tracheotomies 11 per cent., secondary tracheotomies 12 per cent.[2]

In estimating the relative value of tracheotomy and intubation it is well to have a clear understanding as to the purposes for which these operations are done; as to the definite results to be reasonably expected from them. In the great majority of cases of croup the result largely depends upon three conditions, to wit: laryngeal obstruction, bronchial croup and septicæmia. Now it is more than doubtful if either of these operations has any direct influence whatever upon the extension of the membrane, or upon the septic infection. They are done to overcome any obstruction to free and easy respiration located in the larynx, and no other direct result can reasonably be expected of either procedure. The type of the disease, more than all things else, determines the result of the treatment.

The great importance of giving relief to the laryngeal difficulty is indicated by the nature of the affection itself and also by the fact, that life is prolonged, and more time is thereby obtained in which to combat the various complications. In very many instances the operations are succesful and satisfactory, although the result of the disease is fatal. The patient succumbs to sepsis in some of its various forms or to some other complication, but has no more trouble from the dyspnœa. The operative or surgical part of the treatment was successful, in that it accomplished all that could have been expected of it, by overcoming the difficulty in breathing through the larynx.

Hence, I submit, that a more rational criterion by which to estimate the comparative merits of tracheotomy and intubation would be the amount of relief to the laryngeal dyspnœa resulting from each operation. Judged by this standard, rather than by the result of the disease, which operation gives the most satisfactory relief to the difficult and labored respiration of acute laryngeal stenosis in children?

Every one who has had much to do with tracheotomy, is familiar with the favorable change, which follows the introduction of the tube into the trachea, providing the obstruction is not too low in the air-passage. Unfortunately the respite after both operations is all too brief, but for some hours it is so striking that one needs to be on his guard as to the ultimate prognosis.

In 110 cases of the later intubations at the Boston City Hospital, a record of the immediate effect of the operation upon the dyspnœa was made, with the following results: In 75 instances the relief was immediate and complete: 22 patients were so much benefited that no further operative treatment was required. In 13 cases no relief was obtained by the laryngeal tube. In one instance membrane was pushed down in placing the tube. Immediate tracheotomy was done and the child recovered. In another favorable case it is doubtful if the tube entered the larynx at all. In several of the cases little or no relief was obtained by opening the trachea after intubation, which is not an uncommon result, except in those instances of displaced membrane.

Any method of overcoming the dyspnœa of croup, which gives sufficient relief for all practical purposes in nine cases out of ten, as indicated above, is worthy of our respect and consideration.

Does tracheal section relieve dyspnœa in those cases in which intubation fails? That is the key to our subject and a correct answer will decide the question at issue. Should membrane be pushed down by the laryngeal tube and the patient be unable to expel it, then tracheotomy may be depended upon for relief. These cases, however, are not very common and there are not many exceptions to the rule, that if intubation does not relieve the dyspnœa, little benefit need be expected from tracheotomy. It is obvious that neither operation will do much good, if the obstruction is situated below the point reached by the tracheotomy tube which does not extend enough lower than the laryngeal tube to make any difference in the result. Cases of rapid or difficult respiration due to extension of the morbid processes or to sepsis, are not benefited by any method of treatment with which I am familiar.

Secondary tracheotomy has been performed 58 times in this hospital previous to July of this year. Seven recovered (12 per cent.). It will be noticed that the results of primary and secondary tracheotomies in late years are about the same, and are due to the fact, that only the worst cases are subjected to this mode of treatment. Intubation, even if not successful, does not seem to lessen the patient's chances for relief, except in the gravest cases, when any disturbance may result in collapse. Except in those cases in which the laryngeal tube becomes occluded in its introduction, very little benefit resulted in many instances from opening the trachea, after a fair trial of intubation. It is best just to say, that the lack of skill and experience must be held responsible for some of the failures of the new method in the above cases, rather than the character of the operation itself. The failures of intubation were generally due to pushing down membrane, faulty introduction of tube, or to the obstruction being situated so low that no operation could give relief. In the great majority of cases the right tube, properly placed in the larynx, will afford adequate relief to the acute symptoms of laryngeal obstruction.

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[1] Read before the Surgical Section of the New York Academy of Medicine, October 20, 1892.

[2] For the later statistics in this paper I am indebted to Dr. W. H. Prescott, formerly house-surgeon.

The fact that 502 intubations have been done at the Boston City Hospital during the past five and a half years, and only 129 primary tracheotomies, shows pretty conclusively, that the new operation has supplanted the old one to a very considerable extent in that institution. Intubation, as a rule, is the primary operation, and only in case of failure, is the trachea opened. Considering the large number of surgeons who have charge of our diphtheria wards at different times, it is remarkable to what an extent this operation is performed. There is necessarily a personal equation in these matters, and unless a particular mode of treatment has much in its favor, it is hardly to be expected that a dozen different surgeons would resort to it year after year in preference to its old and well-established rival. Such are the facts, and the lesson is unmistakable.

Intubation is by no means a perfect method of relieving laryngeal obstruction. That is yet to be invented. But it has sufficient advantages to give it a permanent place in the treatment of this affection. It will never entirely supplant tracheotomy, as the latter possesses some desirable features which cannot be claimed for the former. The most important of these is the facility of swallowing. The dysphagia is the most serious objection to intubation. In a small number of cases it is difficult to get the patient to take sufficient food and stimulants by reason of the choking at every attempt to swallow. A good nurse possessing tact and perseverance can overcome this difficulty to a great degree, but unfortunately such a person is not always attainable. In a hospital this objection does not have that importance which appears in private practice. In a large proportion of cases, however, the difficulty is not great enough to lead one to abandon the plan of treatment.

Among other objections to the laryngeal method are the facts, that occasionally the tube is coughed up repeatedly; that it becomes occluded; that there is no expectoration; that for some reason, not always apparent, it does not relieve the dyspnœa; and, finally, that the tube can not always be introduced into the larynx. While it is true that all of these complications are met with, yet they are not sufficiently common, nor so difficult to overcome, as to lead any one, who has had a fair amount of experience, to give up the method. Tracheotomy is by no means free from complications, such as hæmorrhage, sudden blocking up of tube, shock, etc.

That any one with reasonable dexterity, who has done both operations a good many times, should consider the new one the more difficult to perform, is beyond my comprehension. One requires from five to ten minutes including the time necessary for preparation; the other from half an hour to an hour. In the new operation no anæsthetic is required; the light is of secondary importance; there is no hæmorrhage, and except in the worst cases little danger is to be apprehended from shock.

Unless one's early experience with intubation has been peculiarly favorable, he is prone to condemn the method upon insufficient evidence. Croup is not an easy disease to manage by any method known to the profession, and the new one is no exception to the rule. A fair amount of skill, perseverance and experience are requisite for a satisfactory management of these cases. From thirty to fifty examples of each operation are necessary to enable one to form an intelligent opinion of the advantages and disadvantages, the accidents and complications incident to each. Personal peculiarities will always be a factor in choosing the method of treatment. But the strongest advocates of intubation will be found among those who have had the largest experience, which is the best and safest of all teachers.

In conclusion, allow me to say, that in a majority of cases I think intubation is preferable to tracheotomy for the relief of acute laryngeal obstruction in children under seven years of age for the following reasons: It relieves dyspnœa; it is more quickly and easily done; consent of parents or guardians is more readily obtained; it will be resorted to earlier in the disease; it requires no more skill and care in the after-treatment than does tracheotomy; the tube takes care of itself; it is less likely to "gum," or to become obstructed; no anæsthetic is required; as there is no cutting, there is no hæmorrhage; it is not regarded as a surgical operation by the parents and friends; and finally, the records of the Boston City Hospital indicate, that the results are nearly as favorable, as after the other method of treatment.

Such are the reasons for the opinion expressed in this paper, and they are based upon the experience of my colleagues, and of myself, in upwards of a thousand operations. The type of the disease will vary at different times, thereby affecting the results. Accidents and complications will occur not infrequently in both plans of treatment. But after making due allowance for these facts, as well as for individual preferences and peculiarities, I venture the statement, that Dr. O'Dwyer's operation will remain in the opinion of a large number of surgeons for a long time to come, what it is at present, a reasonably safe, efficient and satisfactory method of relieving acute laryngeal stenosis in children.

TRACHEOTOMIES AND INTUBATIONS AT THE BOSTON CITY HOSPITAL TO JULY 1, [illegible]

([illegible])

	No.	Recov.	Per cent.
Tracheotomies,* total	[illegible]	[illegible]	[illegible]
Intubations, total	[illegible]	[illegible]	[illegible]
Tracheotomies, primary	[illegible]	11	[illegible]
Intubations, without tracheotomy	[illegible]	[illegible]	[illegible]
December 31, 1886, *to July* 1, 1892.			
Intubations, total	[illegible]	[illegible]	[illegible]
Tracheotomies, total	187	22	11
Intubations, without tracheotomy	[illegible]	[illegible]	[illegible]
Tracheotomy,† primary	[illegible]	1	11
Tracheotomy, secondary	[illegible]		[illegible]
Tracheotomy,‡ to December 31, 1886	327	95	29

* Dr. W. H. Prescott.

† Prescott and Goldthwait: Boston Medical and Surgical Journal, December 31, [illegible]

‡ Lovett and Munro: [illegible], July, [illegible].

It is stated in a German paper that more than twice as many people died in London last winter from influenza as died in the same city, during the year 1843, from cholera.

RECURRENT TONSILLITIS.[1]

BY G. A. LELAND, M.D.

(Concluded from No. 15, page 374.)

The following illustrative cases may bring out some points that have not been touched upon in the foregoing, and emphasize others:

Case I. Miss M. G., a lady of thirty summers or thereabouts, was sent to me on the 24th of August, 1889, for an earache which had been coming on for a day or two. Examination of the ear showed no congestion or bulging, denoting inflammation or effusion into the tympanum; and I told her, therefore, that probably the pain in the ear was reflex from some other cause, very likely from the throat. On inquiry, she said that she had a little sore throat at the present time, that she had been subject to recurrent attacks of tonsillitis for four or more winters, that during every winter a slight cold would start up an attack of tonsillitis, which would last from four to six weeks, including recovery. As she was much in society, these attacks of tonsillitis interfered very much with her winter's pleasure since a slight cold taken while out of an evening meant being housed for a month or more. During these winters constant treatment with gargles, sprays and applications gave no lasting benefit. These attacks occurred also in the summer, but with less frequency; the ears were apt to feel full and to itch a good deal. Examination of the throat showed both tonsils very much enlarged, surfaces pitted with holes, through which projected the tops of the inspissated secretion filling them. The left tonsil at this visit was red and swollen, as if taking on a slight degree of inflammation. I introduced the blunt hook and tore away the partitions between several of the crypts, expelling much of their contents, and causing a little depletion by hæmorrhage, and then washed them out with Dobell's solution by means of the long-nozzled syringe. She expressed herself as immediately relieved of the earache, and continued her journey to a summer resort. As she was in transit, I was unable to do very much of an operation and was content to simply relieve the discomfort in the ear. She experienced this relief for some time, but soon after had a large swelling come on the left side of the neck, which was very painful and was accompanied with considerable fever and malaise. The resident physician at the resort could see no reason for it on examination of the throat, and had to await developments. Finally, an abscess burst, probably in the under part of the tonsil, out of sight, and the physician could not find the opening, but much blood and pus were discharged for three or four days. This produced a great deal of physical depression, and the patient was quite a long time in recuperating. On October 16th, I again examined the throat and was able to find no lesion to account for the abscess or its place of exit. Having determined to have her tonsils reduced by the method in question, I united several of the crypts at this sitting, and painted with equal parts of tincture of iodine and glycerine. She remarked that her ears felt very well until the day before, but she then began to feel the old irritation return. This operation was repeated on October 26th and November 14th, when some of the little light-colored, fibrous-feeling tips were cut off with the bistoury. By this time with these four operations, the tonsils, which at first projected perhaps half-way to the uvula, had shrunk down to the level of the pillars of the fauces. February 20 and 24, 1890, I again saw her with a very severe cold, but no trouble at all with the tonsils. On May 19th, she had a very mild attack of inflammation of the fauces and naso-pharynx from a cold which occluded the left nostril, and the tonsils were somewhat involved in the inflammation. The few crypts remaining were brought into notice by the inflammation. They were torn and cut again and a few projections removed. This was repeated on May 29th and June 3d, which last operation was for trimming up, and a few little holes were enlarged and again painted. At the end of the summer I saw her again for a slight cold which she had in the head, but she had had no symptoms of tonsillitis throughout the summer. In January of 1891, tonsillitis was very common, almost epidemic, and her right tonsil was seared a little on the 14th of the month with the galvano-cautery point in order to treat a very small point of local redness. Since that time she has had no trouble at all with her throat. I saw her about a year ago, the tonsils had disappeared behind the pillars of the fauces, and in looking at her throat one would never suspect that they had ever been enlarged. This then is the fourth winter since her tonsils were operated upon, and from being formerly laid up several times in the winter with this recurrent disease, she has had absolute immunity from it, and I have no reason to doubt that it will be permanent.

Case II. Mr. P. J., seventeen years of age, was sent to me October 31, 1889, by the foregoing case who was a relative. On the sixth and seventh year before, he had been much troubled with attacks of tonsillitis, but they were not very severe. The tonsils were very large, especially the left one, projecting even to the uvula, the surfaces studded with the mouths of crypts, and bands of fibrous tissue reticulated over their surfaces. They interfered very much with speech, especially with singing and together with a few adenoid vegetations in the naso-pharynx, interfered also very much with breathing. Five years before he had had an acute inflammation of the left ear with rupture of the membranum tympanum and hearing was variable, sometimes much impaired, with colds. He submitted very gracefully to the operation in question, and by the last of December, after seven sittings, the tonsils had disappeared behind the pillars of the fauces, the pillars themselves had come together so as to be in their usual position, and his voice, color, flesh and general health were very much improved. In this case the parents were averse to the amputation of the tonsils with the guillotine, and were pleased to think that they could be reduced in another way which did not seem so barbarous. A letter from his mother, received last week, says: "He has gained much in flesh and color; his general health has improved; and he has had no further trouble with the throat, which formerly caused him to lose much time from his studies."

The following case is interesting because an intratonsillar abscess:

Case III. Miss C., a lady in good circumstances, and of about thirty-two summers, had from a child been troubled with very severe ulcerated throats which continued till she was about twenty-seven, when they took on the added evil of abscess formation. The first attack was double, one on each side, eleven years ago. She never had more than one attack per year except once when the second attack occurred in January, but was much lighter than the May attack. The regular attacks occurred in May and in *every* May. Three weeks were usually required before the abscess broke, and two more before she was able to sit up a moment; and usually four months before she recovered her usual tone; and then it was time to look forward to another attack. Each attack was followed by one of acute rheumatism. I saw her about three years ago, with Dr. Bush, at the height of the attack. I was unable to reach pus with the curved bistoury; and I think I have never, before nor since, seen so much suffering in such an attack.

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[1] Read before the Boston Society for Medical Observation, May 1, 1893.

In the fall, after recuperation, the method of treatment under discussion was employed by me and she was seen about the usual number of times, and the tonsils shrank away very satisfactorily. The next May was to test the result. On the 31st day at noon, she appeared at my office, just twenty-three months ago, saying that the old trouble was again upon her. One small red nodule appeared in the centre of the right tonsil. It was incised, and a small amount of greenish pus exuded. She went home relieved, only to call me again at about nine o'clock for increasing pain and fever, chilliness, headache, and in general, the old symptoms. A small amount of pus showed at the site of the puncture, and the hole was enlarged. With her reluctant permission, I introduced the tip of my right digit into the mouth, and finding the incision, pushed it into the tonsil where was found a cavity whose wall felt like the inside of a rubber ball. The opening was torn very wide on withdrawing the finger. The pain was very severe, and bravely borne. She was sure she would be ill as usual the next morning, but at my call, was up and about, dusting the parlor, after a quiet, painless, restful night.

Since then she has had no tonsillar trouble, and only one slight sore throat. Her general health is much improved; she has much less rheumatism; and has noticed the better sound and flexibility of the voice, and absence of fatigue in its use. From being constantly debilitated, she is now in robust health.[2]

Case IV. Mrs. A. P., (twenty-seven, married, with several children) has had tonsillitis and an irritable sore throat (but never quinsy, so-called, or tonsillar abscess) for eleven years; never was free from a sore throat summer nor winter, always worse in winter; her voice was much affected, both for talking and singing, and singing was entirely given up on account of it; general health was much impaired and weight was only from ninety to one hundred and nine pounds, although according to her stature she ought to have weighed over one hundred and twenty; complained very much of trouble with breathing while asleep and frequently had to moisten mouth with some gargle or drink which was constantly kept by the bedside; had constant dropping down the throat and malodorous breath, but had no trouble with ears and no dyspepsia, rheumatism, nor gout; had diphtheria nine years ago and thinks throat has been aggravated very much since.

On examination, the tonsils were found to be moderately enlarged, surface perforated by crypts containing more or less cheesy, decomposing secretion; nasopharynx reddened and somewhat thick, markedly so at the lymphatic patches behind the posterior pillars. There were a few small adenoids in the vault. She submitted at the first visit, October 31, 1890, to the operation in question upon the left tonsil, and a number of pieces were removed with the forceps and bistoury. A weak solution of borax, as hot as could be borne, was ordered for gargle. She was also operated upon on the 7th, 14th and 21st of November, and a few adenoids were at the same time removed with the forceps. She did not suffer much between the visits, and having a good deal of "sand" was obliged to submit to but four operations in all. The tonsils shrank away entirely between the pillars of the fauces, and she was dismissed with the recommendation to come again should a single follicle start up to be inflamed, and give her any idea that the old symptoms were returning. I have not seen her since; but a letter dated April 26th of the current year says that she has had no symptoms of a sore throat since the treatment was finished, nor of catarrh; that she has had no odor of the breath and not a sick day since; that she can talk and sing as well as ever; and that her general health has improved, and her weight is now between one hundred and twenty-five and one hundred and thirty pounds. It is not to be expected that she will ever be troubled again.

Case V. A little girl, G. H., seven years of age, has had trouble with adenoids and tonsils since birth. At two years of age she had scarlet fever and the throat has been very sensitive and tonsils very troublesome ever since. At the first visit, December 7, 1892, she was just recovering from the fourth attack of tonsillitis during that year. There were two attacks the previous winter, one in the summer and one the first week in September, and the day before the visit she was out for the first time since another attack. This last time the tonsils were enlarged for two weeks, and painting with iron, etc., was not of much avail until eight days ago the attack culminated in an acute tonsillitis. Under the care of another practitioner she had been kept along, and the naso-pharyngeal hyperplasia had satisfactorily diminished as she advanced in age, but she has had on the average about four attacks of acute tonsillitis every year. Being so young it was thought advisable to do but little at each operation, but in this case the parents were glad to find a method which would not require tonsillectomy. She submitted to seven operations only, which were considered sufficient, for the tonsils had shrunk well away, although the surfaces were slightly nodular. She went away with the ordinary injunction as to the return of the inflammation in even a single follicle; and on February 10th (the last operation occurring on the 26th of January), on a very rainy and stormy day, I was sent for in a hurry because it was thought the tonsils had again lighted up; but at my visit I found the child playing about apparently perfectly well, with no sore throat. The parents had been frightened because she had awakened that morning a little languid, as usual in such attacks, and they had seen some redness about the fauces, and thought that my prognosis was refuted. I was very happy to assure them that, although the fauces were slightly reddened, the tonsils were not affected at all, and that there was no cause for alarm.

She has gone through this very trying spring, when sore throats have been more than usually prevalent, without another attack.

Of course, I do not consider this case as one which is of as much importance as the others which have been longer finished; but I report it as one which, under the old methods of treatment, for five years at least has still had four attacks of "quinsy sore throat" every year, and which in a most trying season since operation has thus far escaped; and I am almost willing to wager she will have continued immunity from her old enemy.

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[2] [illegible]

It would be useless to continue to enumerate cases which have been benefited, since their relation would be believed by some and disbelieved by others, as is often the case; but these few are cited as examples of the beneficial effect of a treatment which I am persuaded is not in common use among physicians, both general and special. This method is not brought forward as the best in all cases, but in those cases where the tonsils are too small to reach with the guillotine; in those where there are but a few diseased crypts; in tonsils which perhaps are not enlarged at all, it is of the greatest value, at least in my hands. It is advocated as a very good method where, as is so often the case, the patients or their parents are much averse to the amputation of the organs; and certainly, in my experience at least, when this method is carried out to a satisfactory termination, the stump left is much better than by any other method. I do not claim any originality in bringing it forward except that perhaps these knives, which I have not seen described nor recommended before, I think are an improvement over the blunt hook of Hoffmann, which certainly gives a great deal of pain where the tonsils are toughened by fibrous hyperplasia.

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Clinical Department.

CHOLECYSTOTOMY FOLLOWED BY CHOLECYSTENTEROSTOMY: A FINAL REPORT.

BY I. P. HURD, M.D., NEWBURYPORT, MASS.

IN the JOURNAL of March 28, 1893, is a preliminary report by Dr. G. W. Jones, of a case of cholecystenterostomy performed by him in Newburyport early last January. It becomes my duty as attending physician of the patient to make a final report. The poor woman unfortunately died early in April of marasmus resulting from the operation.

The first operation, cholecystotomy, performed about a year ago in the Anna Jaques Hospital, was called for by the wretched condition of the patient, who had for several years been suffering from repeated attacks of gall-stone colic, unfitting her for her work. My diagnosis of biliary lithiasis was confirmed by that first operation, eight gall-stones of variable size (and facetted) having been removed. No calculi were discovered in the common bile-duct or in the cystic duct. It was not at the time determined whether there was present any stenosis of the choledochus. The patient made a good recovery, but a biliary fistula remained, which refused to heal, though repeated attempts to close it were made by Dr. Jones and by myself. The fact that this fistula would not close, and that there was an almost daily escape of bile, and in quantities which often weakened the patient, led us to think that there must be partial stenosis of the choledochus, not *total* stenosis, for there was evidence (coloring of stools, absence of jaundice) that some bile constantly found its way into the intestine.

Miss C., in October, went to Cambridge for further medical advice, and came home early in the winter resolved on having another operation performed, which might cause the bile, then running off by the fistula, to be utilized, and might restore her to health again.

This operation is well described by Dr. Jones in the JOURNAL article above mentioned. After the intestine (believed to be a loop of the ileum) was attached to the gall-bladder in the manner described by Dr. Jones, it was perforated, a drain made of silk-worm gut was inserted into it, and the deep wall of the gall-bladder with the intestines dropped back into place. The opening into the gall-bladder was packed lightly with gauze, and the central abdominal incision was closed and sealed with collodion.

The immediate result of the operation was favorable. For a fortnight there was no untoward symptom. Dr. Jones's report was made from data communicated by me and Miss Bement, the nurse, down to about January 25th. Then constant fæcal and biliary discharges manifested themselves. These discharges were biliary and mucous only till about the time when I took out the silk-worm gut drain, ten days after the operation, when fæcal matters and chyle began to be mingled with the discharges from the fistula; I say, *chyle*, for there was often material that seemed to be imperfectly digested food, and I was on several occasions assured that broth, milk, etc., had been voided by the fistula in almost the same condition as when swallowed. Miss Bement had seen milk appear at the fistula five minutes after being swallowed.

It was supposed at the time of the last operation that there would be no doubt about the rapid healing and firm cicatrization of the old fistula; there would now be no longer any reason why biliary, much less fæcal matter, should be discharged externally. The event was different from what we fondly expected. We had now, not only our old biliary fistula, but a fæcal fistula along with it — a fæcal fistula communicating with some part of the small intestine rather high up. An attempt was made by Dr. Jones and myself about the middle of February to close up this fistula. We cut around it till we had dissected up a funnel-shaped tube leading down to the gall-bladder; around this a stout catgut ligature was thrown, and the portion above was enclosed in a buried catgut suture bringing the freshened tegument well together. It was all of no avail; in three days the discharge had burst through the artificial coverings interposed to compel it to seek the natural channels.

From that time Miss C. went rapidly down. Appetite became *nil;* there was constant vomiting of food and drink: and it soon became necessary to stop all nourishment by mouth and to feed the patient by rectal enemata. It is seldom that a physician is compelled to witness a more painful and hopeless illness; the only relief that could be given for the distress was the subcutaneous morphine injection.

A swelling (which eventually nearly or quite subsided) formed over the right lobe of the liver which led me to fear the formation of hepatic abscess. The continued outflow by the fistula excoriated the external parts and made them very painful; this distress was only partially mitigated by absorbent powders. The obstinate vomiting of alimentary matters, of glairy mucus, the burning pain experienced along the gullet and in the stomach might have suggested acute gastritis; but we often witness the same symptoms in ileus and volvulus. There was a dry and parched tongue and incessant thirst. The urine was scanty and high-colored and the bowels constipated, though copious stools could be elicited by glycerine injections. For a time there was a decided icteroid hue of the teguments and conjunctivæ.

There is no particular reason for dwelling further on a case which was as distressing as it was disappointing to all concerned. Miss C. lingered on, and died of inanition and starvation about the middle of March. The quantity of nourishment taken by mouth for more than six weeks was very small; and the amount actually appropriated much smaller, for very little was really retained. The poor woman was, as might be supposed, exceedingly emaciated.

In the absence of a post-mortem examination (which was denied) no entirely satisfactory analysis of the symptoms and explanation of the cause of death is possible. What I have to suggest is largely of the nature of conjecture, and will be comprised under two heads:

(1) A fæcal fistula was established between a portion of the small intestines and the abdominal wall, giving an escape externally to much excrementitious matter with more or less chyle. Unless such fistulous orifice can be closed, serious results are certain to happen, as our best surgical authorities testify. I might quote in point from Cooper, Chelius, Gross, Erichson, Druitt and others. Sir Astley Cooper, for instance, mentions the case of a man with a strangulated umbilical hernia which sloughed and occasioned an artificial anus. As he was recovering from the effects of the strangulation and sloughing, and was allowed to take food in any considerable quantity, it was observed that part of what solids he ate passed out at the artificial anus within half an hour after he had swallowed them, and that fluids passed out in ten minutes after they had been taken into the stomach. Although he took sufficient food to support a healthy person, he wasted rapidly, and died in three weeks. On examining his body after death, and tracing the jejunum, the lower part of that intestine was found entering the hernial sac, and in it the opening was situated.[1]

(2) The intestine in this operation was brought into direct communication with the gall-bladder so that the latter was in all probability constantly contaminated by fæces and microbes from the small intestine. In fact, the gall-bladder, by virtue of the operation, was converted into a diverticulum of the intestine. Hence the possibility — I may say the probability if not certainty — of infection of the liver by way of the intestine. The bile, as is known, does not flow continuously but intermittently; though undoubtedly antiseptic, it can not act when it is not present. It has seemed to me, the more I have thought of it, that by making the gall-bladder a *quasi* diverticulum of the intestine, we furnish just the best possible conditions for microbic infection of the liver. In the physiological state, the intestine, if not shut off from the mouth of the choledochus by a membranous valve, is virtually excluded from the duct by the fact that the latter opens obliquely into the digestive tube, passing through the muscular coat of the duodenum whose contractions act the part of a valve; moreover, the choledochus becomes narrowed at its mouth to such an extent that in a state of rest its lumen is virtually effaced.[2] It will be seen that the conditions are altogether different when, instead of having the intestine with its microbes and fæcal contents nearly shut off from the liver (which even then in certain morbid states cannot altogether protect itself from infection), we have the intestine in direct communication with the gall-bladder by a fistulous orifice.

I am aware that the ready reply to this argumentation will be that every operation of the kind — every cholecystenterostomy — presupposes just such direct communication between the intestine and the gall-bladder, that there are now on record some ten successful cases, and that in one successful case, that of Mayo Robson, it was the colon that was made to communicate with the gall-bladder.

No one can reply to this objection till he has ascertained the subsequent history of all the cases on record. How many of these reported cases have been complete and permanent cures?

But granting the entire success of a part if not all of the cases, from that of Winiwarter in 1881 to Mayo Robson's last operation, we can only suppose a satisfactory result possible by a process of cicatrization and healing which shall closely imitate the natural physiological condition, that is, a minute orifice of communication, and a membranous barrier or valve to oppose the passage of fæces into the gall-bladder, while permitting the flow of bile from the gall-bladder into the intestine. Possibly this result might have been attained in our case, provided we had not put in that drain of silk-worm gut, *or provided I had removed it earlier.*

But it is useless to speculate further as to the causes of failure in this unfortunate case. The operation as performed was unquestionably a brilliant one; and the untoward result, in connection with such theoretical considerations as I have indicated above, has convinced me that cholecystenterostomy must always be an eminently hazardous operation.

HISTORICAL RETROSPECT.

The first to advise the operation of cholecystenterostomy was Nussbaum in 1880, for cases of irremediable occlusion of the common bile-duct. The first to perform it on the human subject was Winiwarter, in 1881. The second operation was performed by Kappeler, six years afterwards. The operation was done at one sitting. July 6, 1887, he incised the gall-bladder and duodenum and approximated them with a suture of serous and mucous coats. There was complete recovery. Montastyrsky operated about the same time, and lost his patient. Socin, November 19, 1887, performed cholecystenterostomy in a manner similar to Kappeler, with recovery of the patient. The fifth case was that of Fritzsche, April 24, 1888. The case was one of impaction of gall-stone in the choledochus. He made an opening into the intestine and gall-bladder and united incision with catgut sutures of mucous coat and silk sutures of serous coat. Patient died on May 4th.

The sixth case was that of Mayo Robson, March 2, 1889. He joined the gall-bladder with the colon, uniting mucous and serous coats with chromicized catgut sutures. He reports a good recovery. The seventh case is that of Terrier, August 13, 1889. After incision of gall-bladder and duodenum, he approximated with two rows of sutures, put in drainage-tube, and sutured the gall-bladder to the abdominal wound. He reports a good recovery. This case strikingly resembles the Jones and Tuttle case whose unfortunate termination I have here reported. The eighth case is that of Courvoisier, March 28, 1890, who attached the gall-bladder by serous sutures to the colon, after having opened the choledochus and curetted several gall-stones out of the hepatic duct.

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[1] [illegible]

[2] [illegible] Paris, [illegible].

There are a few more cases to add — some successful, some unsuccessful. Bardenheur's two cases both terminated fatally. He united the gall-bladder to the duodenum with an elastic suture in the centre and a single row of silk sutures around it, expecting that the elastic suture would produce a pressure atrophy, and that a fistula would remain. The autopsy of both these patients showed that the result expected was not obtained. Czerny in the *Annals of Surgery*, October, 1892, reports two more cases; one died of hæmorrhage, and the other survived the operation.

July 30, 1892, Lambothe, of Belgium, operated on a patient who had an external biliary fistula following cholecystotomy. "He drew out a piece of the colon through an incision in the abdomen close to the fistula, and then applied Dupuytren's enterotrite in the manner that that author used it for the repair of an artificial anus, finally performing a plastic operation to close the external opening." The report says that "the patient survived the very tedious operative procedures." Korte, in 1891, reported to the Berlin Medical Society a case in which the suture was used for approximation; the patient recovered.

Dr. J. B. Murphy, of Chicago, whose able and exhaustive article in the *Medical Record* for December 10, 1892, will long be quoted in connection with the subject of cholecysto-intestinal operations, reports two cases of his own, performed in 1892, in which the results were favorable. He was the first to propose, in order to overcome the tremendous difficulties of the *technique* of the operation, the use of an apparatus which he calls the "anastomosis button." These buttons consist of two hemispheres which are inserted in slips or ends of the viscera to be operated on. These hemispherical bodies are held together by an invaginating cylinder. A running thread is placed around the slit in the viscus, so that when it is tied, it will draw the cut edges within the clasp of the bowel. A similar running thread is applied to the slit in the viscus into which the other half of the button is inserted, and the viscera are then brought together. Pressure atrophy at the edge of the bowel is produced by a brass ring supported by a wire spring. The opening left after the button has liberated itself is the size of the button.

This device "retains its position automatically"; the union "is effected without sutures"; it produces a pressure atrophy and adhesion of surfaces at the line of atrophy; "it insures a perfect apposition of surfaces without the danger of displacement."

The operation, as Dr. Murphy describes it, must be one of great ease and safety.

There are two points brought out in Dr. Murphy's paper which are of interest in connection with the case of my patient. The one is in relation to the effect of a permanent fistula of the gall-bladder and constant escape of bile secreted, such as frequently follows cholecystotomy. When the fistula of the gall-bladder only allows a portion of the bile to escape, the patient and animal, as in Dastre's experiments on artificial biliary fistula, can live without suffering greatly from the loss; that is, they are capable of digesting with a much smaller quantity of bile than they naturally secrete. But if we let the entire quantity of bile escape through the fistula, the patient soon succumbs.

In the case of my patient, there was a permanent biliary fistula remaining after the operation in the spring of 1892, and at times an excessive escape of bile, yet not all the bile that the liver secreted was lost (as was determined by the character of the stools) and there were, in fact, days, when there was no discharge from the fistula. I think that I am right in affirming that during all these months, this young lady, though weak and unable to work, had yet a fair digestion and did not emaciate.

The second point is this: In all the successful operations on animals that have been recorded, the establishment of a cholecystenteric fistula has been followed by more or less contraction of the orifice of communication between the gall-bladder and intestine, and the formation of a valve on the intestinal side of the opening by one or two folds of mucous membrane closing over it, permitting the bile to flow out, but preventing the entrance of any thing from the intestine. The gall-bladder also undergoes marked contraction. Murphy calls particular attention to this point. In one of his cases (a dog which had been made the subject of experimentation) the necropsy showed the gall-bladder contracted to a tube not much larger than the ductus choledochus, and a valve formed by a fold of intestinal mucous membrane. Water would flow freely from the side of the gall-bladder into the bowel, but would not flow from the bowel into the gall-bladder on account of this valve. It is not only probable, but may be regarded as certain that in all the really successful operations in the human subject a similar protective valve has been formed, and a similar contraction of the gall-bladder has taken place.

It is evident that where the gall-bladder is attached to the abdominal wall — as in my patient — the difficulties in the way of such a salutary result would be greater. Reasoning from the unsuccessful issue of this case and all the facts as stated above, I am inclined to advise surgeons after they have once done a cholecystotomy and failed, never to attempt a cholecystenterostomy. Had the primary operation in the case of Miss C. been a *cholecystenterostomy* performed according to those modern methods of technique which have given the best success, and with which my friends Jones and Tuttle are so familiar, it is quite probable that it would have been a success. But in saying this, I do not desire to be understood as attaching any blame. A cholecystomy is always the easier and safer operation, and unless the surgeon is perfectly sure that he has stenosis and occlusion of the ductus choledochus, he will naturally and rightly choose this operation in preference to a cholecystenterostomy.

I have dwelt somewhat at length on this subject for this operation has but lately acquired a right of domain in surgery; it is a formidable operation and surgeons want all the light which they can get before attempting it; and the case I have reported has its lessons.

An advertisement recently appeared in a New York daily, offering $5,000 to any man who would submit to an experimental surgical operation involving some risk. One hundred and forty-two answers were received. Two physicians in Ecuador are the advertisers, who wish to establish a gastric fistula, and repeat the observations made by Beaumont on St. Martin.

A CASE OF CHRONIC TETANUS FOLLOWED BY SCARLET FEVER.

BY [illegible] HOWARD [illegible], M.D., SANDY RUN, PA.

On the [illegible] of June 2, 1892, John G., age 18, presented himself in my office, complaining of stiffness of his jaw, pain in the masseter muscles, and a feeling of general muscular soreness. On examining him I found that he was unable to open his mouth farther than to admit the end of his thumb. His tongue, he stated, felt somewhat swollen. Temperature 99° F. He had vomited on the previous day, being compelled to stop work, which was in a swamp in severely hot weather. I noticed that upon the palmar aspect of the right hand near the base of the index finger, a recent scar about one inch long, and on inquiry found that three weeks before he had been cut with coal in the mines, producing a wound which had healed slowly. At present there was no pain nor discharge. Being able to swallow, I gave him a prescription containing fifteen grains of bromide of potassium and ten grains of chloral hydrate every three hours.

June 7th, I saw the case in consultation with Dr. Neale of Upper Lehigh. Patient had a temperature of 100°; pulse 90; had bitten the tongue; and from the description of the mother, he evidently had had an attack of opisthotonos during the night. He complained of severe pain in the epigastric region (the abdominal muscles being in a state of tonic spasm), increased muscular soreness and slight constipation. Urine negative. The bromide of potassium was increased to thirty grains and the chloral to twenty grains every three hours.

June 8th. Temperature 99.4°, pulse 88. Had slept well during the night, and also during the day. When awakened, felt quite refreshed, but would soon become drowsy. Had had no convulsions, but still complained of epigastric pain. Ordered one-tenth of a grain of calomel every hour, as a laxative.

June 9th. Opisthotonos twice during the night, and had bitten tongue.

June 11th. No opisthotonos, nor so much rigidity of masseter muscles. He could open his mouth far enough to admit the last phalanx of his thumb. Reduced the dose of the bromide and chloral one-half. From this time on the patient had no return of the convulsions, and the rigidity and pain in the masseter and abdominal muscles became less. Temperature ranged from 100.4° to 98.6°, and the pulse from 99 to 72.

June 26th. Walked a little with a cane.

June 29th. Felt well, with the exception of headache, but with a temperature of 103.2°, and pulse 110. Had had no evacuation from the bowels for three days, he having run out of the calomel, which had acted throughout the disease very successfully as a laxative. Gave an enema of hot soap suds.

June 30th. Temperature 102°, pulse 80.

July 1st. Temperature and pulse normal. Stopped the bromide and chloral.

July 5th. Patient progressed nicely until this date, when he developed a temperature of 105°, and a marked and typical rash of scarlet fever. There was a distinct history of contagion seven days before. The fever pursued a regular course, free from complications. Desquamation began July 11th; first in fine scales; then they increased in size, were thicker and more or less immovable, accompanied by some fissuring of the skin. Removal of the flakes disclosed a raw weeping surface beneath, soon to be covered by another set of brownish-gray fish-like scales.

Thus did the process keep on for the remainder of July and during August, September and a portion of October. Improvement first took place upon the face, which had not been so severely affected as were the trunk and extremities. Healthy skin then showed itself in the upper extremities; next upon the trunk and lower limbs; and lastly the feet became free from the scaling process.

Aside from the fact that all cases of tetanus are interesting, this one is rendered more so by its being followed so closely by scarlet fever, having such a pronounced and prolonged stage of severe desquamation, which would lead one to the conclusion that, owing to the nature of the preceding disease, with its large expenditure of nerve force to the peripheral motor nerves, the healthy action of the trophic nerves of the skin, had in some way been compromised, and the nervous system so exhausted, as to permit the scarlatinal malady to produce such excessive dermal inflammation.

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Medical Progress.

REPORT ON THERAPEUTICS.

BY F. H. WILLIAMS, M.D.

THREE CASES OF ATROPINE-POISONING, ONE TREATED WITH TANNIN AND TWO WITH MORPHINE.

C. **Binz**[1] reports two cases of atropine poisoning and quotes others which illustrates the use of morphine as an antidote to atropine.

In the first case, which was treated with tannin, a boy, seven years old, took nearly the whole of a bottle of solution of atropine, intended for the eyes, which according to the recipe, contained .05 atropine sulphate in 10 c. c. of water. A few minutes later he lay raging on the floor, alternately screaming and laughing, in constant motion and with a flaming face. About half an hour after the atropine was taken, his physician gave him one gramme of tannin, but in spite of this the raging condition lasted for two days in undiminished violence and then it gradually decreased until on the fourth day he fell into a deep sleep and recovered.

In the second case, a boy three years old, took, between 8 and 9 A. M., a solution of atropine intended for the eyes; the exact amount taken could not be determined. About 12 o'clock he was brought into the clinic and his stomach was washed out; the patient was restless, threw himself about, uttered fearful sounds and did not recognize his father and mother. At 12.15 P. M., .003 of hydrochlorate of morphine was subcutaneously administered, but it did not bring rest. At 12.30 another injection of .005 was given and a few minutes later all appearance of disquiet had ceased and about 1 o'clock the boy was in a sound sleep. At 4 P. M. he waked up and was again excited. At 5 P. M. he took some milk with relish, but there was manifestly still much physical disturbance and .003 morphine was again injected. Quiet followed, but no sleep. At 11 P. M. he fell asleep and gradually recovered without further use of morphine.

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[1] Centralblatt für [illegible], No. [illegible]

The third case was that of a workman, fifty years old, who had suffered since 1885 with sciatica. In one of these attacks his physician, by mistake, injected subcutaneously atropine sulphate instead of morphine. A few seconds after this the patient was in a raging condition, tried to climb up the walls and thought he was pursued by animals and fearful forms. Twenty drops of .01 of morphine in 25 c. c. of water was administered every hour. In the afternoon the patient gradually became quiet and sleep followed. Except for great exhaustion during the days that followed, the patient was well and since then has had no sciatica.

Binz concludes by saying that morphine would not be suitable for every case, nor in every stage of atropine poisoning, but only in the excited stage. Choral hydrate may be used instead of morphine, but it has a more weakening effect on the heart than the latter and must be used with great care.

THE TREATMENT OF MALIGNANT TUMOR BY REPEATED INOCULATIONS OF ERYSIPELAS; WITH A REPORT OF TEN ORIGINAL CASES.

Dr. William B. Coley[2] gives in more or less detail an account of six cases of sarcoma and four of carcinoma in which he has used erysipelas inoculations. In addition to these 10 cases of his own he refers to 28 other cases of sarcoma and carcinoma in which erysipelas, either spontaneous or artificial, intervened. Of these 38 cases, erysipelas occurred accidentally in 23 and was the result of inoculation in 15 cases. Seventeen of these cases were carcinoma and there resulted three cures and one death; 17 were sarcoma and there resulted seven cures and one death; four were sarcoma or carcinoma and there were two cures.

Dr. Coley groups by themselves the 15 cases (seven carcinoma, eight sarcoma) in which erysipelas was artificially produced and states that among these there were three cures; carcinoma, 1; sarcoma, 2. He then goes on to say, "when we reflect that in nearly all these cases the tumor was not a primary growth, amenable to operative treatment, but either a recurrence after operation had been tried and failed, or from its nature inoperable, then and then only are we in a position to fully estimate the importance and value of erysipelas as a *curative* agent." The writer next considers the cause of cancer, its treatment by repeated injections of fluid cultures and the dangers associated with erysipelas, and draws the following conclusions:

(1) The curative effect of erysipelas upon malignant tumors is an established fact.

(2) The action upon sarcoma is more powerful than upon carcinoma in about the ratio of three to one.

(3) The treatment of inoperable malignant tumors by repeated inoculations of erysipelas is both practicable and not attended with great risk.

(4) The curative action is systemic and probably due chiefly to the toxic products of the streptococcus, which products may be isolated and used without producing erysipelas.

(5) This method should *not be employed indiscriminately* until further experiments have proved its limitations.

A note at the end of this article contains the following:

"*Toxic Products.* — During the past month I have been using a preparation of the toxic principles of erysipelas in four cases of inoperable sarcoma. The injections have been made into the tumor itself, and repeated every forty-eight hours. The reaction has been almost identical in character with that produced by true erysipelas, though milder in degree, and it has always passed away within twenty-four to forty-eight hours.

"The temperature has never risen above 103.5°, and has usually dropped to normal the following day. I have frequently made use of the toxic products of the *bacillus prodigiosus* in combination with the products of the erysipelas coccus, to intensify the action of the latter and always with the desired effect. (This peculiar action of the one germ upon the other, I may add, was noted by Roger in his recent experiments on rabbits.)

"Every one of my four cases of sarcoma has shown a marked and progressive decrease in the size of the tumor, and in one case (*vide* paper, Case VI) a sarcoma of the back and groin, the tumor has entirely disappeared and the injections have been stopped. The patient has regained his normal weight (one hundred and sixty-five pounds) and has returned to work.

"These results have been so encouraging that, for the present at least, I have decided to use the toxic products of erysipelas in preference to inoculating the germ itself. The advantages of doing so are very great. The necessity for isolation is avoided and the action of the products can be so carefully regulated that the danger element can be entirely eliminated."

[The erysipelas inoculations are obviously attended with danger to the patient; the toxic products should rather be chosen and the results of their further use will be awaited with great interest. F. H. W.]

OBSERVATIONS ON THE NATURE AND TREATMENT OF ANGINA PECTORIS.

Dr. J. Burney Yeo[3] after discussing the known modes of causation of attacks of angina pectoris, summarizes the indications for treatment as follows:

(1) To maintain or improve, when defective, the general nutrition; to avoid all strain, physical and emotional; and so to relieve cardiac feebleness and excessive effort.

(2) To relieve dyspeptic conditions and flatulent or fæcal distension of the stomach and intestines.

(3) To forbid the habitual consumption of agents which may exercise a toxic action on the heart, such as tea, coffee, tobacco, alcohol, etc., or that may introduce or develop toxines in the alimentary canal.

(4) To avoid and remove all gouty and other blood contaminations.

(5) To give such tonic remedies as may improve the cardiac tone and lessen existing tendency to cardiovascular degeneration.

(6) To relieve the paroxysmal attacks by sedatives and stimulants.

(1) Under the first indication Dr. Yeo speaks of the necessity of careful attention to hygienic measures; the life of the patient must be one of complete repose of mind and body — a repose alternated with gentle exercise. Life in the open air and in a mild climate is also beneficial. The diet must be carefully looked after and sometimes be almost exclusively of milk. If the digestive powers are greatly weakened it may be necessary to have recourse to pre-digested foods or to give with the food some artificial digestive agent. The writer mentions a number of dishes that may be

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[2] American Journal of Medical Sciences, May, 1893.

[3] The Practitioner, May, 1893.

easily assimilated and then goes on to say the physician should see that a sufficient quantity of water is taken, both for eliminative and assimilative purposes, a point often overlooked.

(2) The co-existence of dyspeptic states must be treated in accordance with general principles — an alkaline bitter stomachic, composed of sodium bicarbonate, nux vomica and calumba, an hour before the two principal meals, will be found valuable. Regular evacuation of the bowels of fæcal accumulations is most essential — checking as it does the formation of injurious toxines in the intestines, eliminating waste substances and relieving abdominal disturbance. Dr. Yeo here suggests various remedies as aperients.

(3) This indication is also an important one, for certain of the slighter forms of angina are no doubt dependent on, and the more serious forms may be provoked by, the habitual use of certain substances which come, in course of time, to exercise a toxic action on the heart. The action of these toxic agents is all the more subtle because they may be taken for many years without apparently producing any injurious effect. This is particularly the case with *tobacco*, the toxic effects of which on the heart are often delayed until, or even after middle age, when they will perhaps somewhat suddenly make themselves felt. The toxic and degenerating influence of alcohol falls upon different organs in different individuals; but whenever anginal symptoms arise complete abstinence from alcohol should be insisted on or its very sparing use in a very dilute form. Tea and coffee are often provocative of the slighter manifestations of cardiac pain and discomfort and they are prone to be aggravated by any emotional disturbance. All these toxic agents must be forbidden so long as any tendency to anginal attacks exists.

(4) The next indication is to remove and avoid all gouty and other blood contamination. The importance of *elimination* in the treatment of angina pectoris is universally admitted. When renal elimination is defective from the co-existence of renal degeneration, the bowels and the skin must be acted on. When the kidneys are sound, the free use of pure water, or some suitable mineral water having some slight stimulating action on the kidneys, may avoid the necessity of free purgation; but in all cases a thorough daily evacuation of the bowels should be procured and free action of the skin should be maintained by warm baths and frictions. In gouty cases, and in all cases of defective elimination, the diet should be sufficient, but careful and spare, avoiding all excess. Animal food should be taken only in great moderation and fresh vegetables and fruit carefully prepared and cooked so as to be made easy of digestion should take its place. All alcoholic stimulant should be avoided and if acceptable to the patient a few weeks of exclusive milk diet may be advantageous.

(5) Dr. Yeo considers next the medicinal treatment of these cases, and first, the appropriate treatment in the intervals — that is, of the constitutional condition underlying the paroxysmal attacks. He points out in certain cases the value of the milder preparations of iron, combined with small doses of digitalis, in other cases of the greater value of arsenic; the usefulness of strychine as a cardiac tonic, of potassium iodide when angina pectoris is associated with obvious signs of cardiac vascular degeneration and of the gouty state, etc.

(6) Those who see in the causation of the anginal paroxysm the predominating influence of vaso-motor spasm consider that the main indication for the relief of the paroxysm is to administer medicinal agents which are known to have the power of relaxing the arterioles; they therefore advocate the use of the nitrites, such as the nitrite of amyl, nitro-glycerine, and sodium nitrite. That these agents do relieve the paroxysm in many cases of angina is certain; that they do so wholly by their action as vaso-dilators is extremely doubtful. In the first place they are capable of relieving the anginal attack when there is no certain evidence of the existence of vaso-motor spasm. Dr. Douglas Powell says he has found them "far more reliable in the graver cardiac cases than in the purer vaso-motory," but it is in the latter that they should prove most efficacious if the prevailing theory of their action were true. Balfour and Grainger Stewart both believe that they act as direct analgesic agents, and that they have the power of relieving pain in other as well as in cardiac neuralgias, independently of their relaxing action on the blood-vessels; and this view Dr. Yeo adopts as the most consistent with the clinical history of the disease.

The effect of sodium nitrite is said to be more lasting than that of nitrite of amyl or nitro-glycerine. It is given in tablets of 2½ grains; one to four of these may be given for a dose. At the onset of an attack, in addition to the inhalation of the nitrite of amyl which, owing to the rapidity of its action, is the most suitable remedy to start with, some warm diffusible stimulant may be given, such as thirty minims of sulphuric ether or a drachm of nitrous ether, with a drachm of sal-volatile or a little brandy in an ounce or two of peppermint water. Feet and hands if cold may be placed in hot water. Balfour has been disappointed in action of nitro-glycerine and prefers inhalations of nitrite of amyl; and when these fail — as they often will — he resorts unhesitatingly to chloroform inhalations; sulphuric ether may be used, but it is not rapid enough. Chloroform may be poured on a sponge in a smelling-bottle and the patient is told to breathe it through his nose as deeply as possible. "In this way relief is obtained in a few seconds, and so soon as the narcotic influence is produced the smelling-bottle drops, and with it rolls away all risk of any overdose." In severe and protracted attacks it may be necessary to have recourse to hypodermic injections of morphine.

THE RELATIVE VALUE OF THE SEVERAL SUBSTANCES RECOMMENDED AS ANTIDOTES TO PHOSPHORUS.

Dr. E. Q. Thornton in this article[4] comes to the following conclusions which are based on chemical tests together with a number of experiments on animals. Permanganate of potassium is the best antidote for phosphorus-poisoning; it must be well diluted one-half to one per cent. or vomiting will result before the chemical reaction has taken place in the stomach; it must be used before the poison has been absorbed, and given in excess, as a considerable portion of the permanganate is reduced by the organic substances of the stomach.

Sulphate of copper, whether given in excess or in the same chemical proportions required to make the change, produces violent gastro-intestinal inflammation. In the experiments of phosphorus-poisoning made on dogs, the animals died in those cases in which sulphate of copper was used as an antidote. Dr. Thornton is of the opinion that this drug should not be used.

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[4] Therapeutic Gazette, No. 1, [illegible].

The animals to which hydrogen peroxide was administered after phosphorus-poisoning recovered, but suffered from exhaustion and severe gastro-enteritis. The hydrogen peroxide is too slow in oxidizing the phosphorus.

Old French oil of turpentine, which is acid in reaction, is said to form with phosphorus a cystalline spermaceti-like mass; the ordinary oil of turpentine does not bring about this change, and as the former cannot be obtained in the market it should cease to be considered as a practical antidote.

THYROID FEEDING IN MYXŒDEMA, CRETINISM AND PSORIASIS.

At the meeting of the British Medical Association,[5] at Newcastle, Dr. George Murray showed some cases of myxœdema, and as these were some of the earliest where thyroid feeding was used, they give an opportunity to note the effect of time in the result. Two years ago, his first case, a woman, was almost unable to walk, had lost nearly all her hair, was very deaf, her speech was nearly unintelligible, and she had very markedly the cutaneous affection characteristic of myxœdema. A glycerine extract of the gland was first injected, and the patient improved almost immediately. Later feeding with the raw gland or with a few drops of glycerine extract was substituted for the injection and improvement went on uninterruptedly. The patient can now attend to her household duties, her hair has grown again, and her speech and hearing are normal. She is extremely sensitive to the least overdose, and can only bear about five minims daily of Brady & Martin's extract; if the remedy is withdrawn she begins to get puffy and stupid again. In all Dr. Murray's cases there was not the least tendency to the establishment of a tolerance; the same dose continuing to have the same effect after a long course of treatment, and the effect of an overdose was just as apparent at whatever stage it was given.

Dr. Murray found in his experiments on monkeys, that by the removal of the thyroid gland he could produce the characteristic myxœdematous condition, and then restore them to a normal condition by supplying them with the thyroid juice of the sheep, being able to repeat the experiment at will with constant results in the same animal.

Dr. Bramwell and Dr. Thompson obtained remarkable results by the use of the thyroid gland in sporadic cretinism. One of Dr. Thompson's cases was a boy, who had a normal sister, many inches taller than himself, although several years younger. Under thyroid feeding the brother began almost immediately to grow and was still rapidly reducing the distance between his sister and himself. Dr. Murray also spoke of a cretin under his care, who grew nearly an inch in a few weeks as a result of thyroid feeding.

In the first case of myxœdema which Dr. Bramwell treated there was in the course of treatment profuse desquamation of the skin of the palms of the hands and soles of the feet. And he noticed that the same phenomena occurred in the subsequent cases submitted to the same treatment, which comprised eleven of myxœdema and three of sporadic cretinism. This effect on the skin led Dr. Bramwell to try the internal administration of the thyroid extract in psoriasis. The first case of psoriasis was of nine months' duration, and was general over the whole body. On February 4th half a thyroid gland was given, and the dose was continued daily; by the 10th there was decided improvement; on the 14th the crusts on the back were shed in large scales leaving smooth skin; by March 3d, the cure was nearly complete. On April 1st, as there was apparent arrest in improvement, the thyroid treatment was abandoned and arsenic was given, but with disastrous results. On April 11th, the thyroid treatment was resumed, fifteen minims of Brady & Martin's extract being given daily. On June 6th the patient was discharged cured.

The second case was of seven months' duration. On May 10th, five minims of thyroid extract were given. On the 15th, the dose was doubled, and on July 14th the patient was discharged cured.

The third case was of six and one-half years' duration, and notwithstanding the previous failure of all other treatment the patient was practically cured after six weeks of thyroid treatment. Dr. Bramwell has tried this treatment in several other less severe cases, with complete success except in two instances. In one of these failures the patient was an epileptic who was taking large doses of bromide during the thyroid treatment, and that may have been the cause of the failure. Dr. Bramwell has tried this treatment in a case of lupus, and considerable improvement resulted. He hopes for equally good results in cases of acute eczema.

Dr. Simons stated that he had seen a case of obstinate psoriasis improve remarkably from the administration of Pöhl's spermine. He suggested that the action of all animal extracts might be, as Pöhl thought, due to an oxidizing influence on the tissues.

ON THE USE OF SOYA BEANS IN DIABETES MELLITUS.

Dr. W. Hale White[6] describes in this article three cases of diabetes mellitus, selected at random from several in which he has used soya-bean biscuits with good effect. The first of these cases was that of a man who had been admitted to Guy's Hospital twice before for the same disorder. On the second occasion he was, on admission, passing 5,040 grains of sugar a day. After a stay of seven weeks, during which he was dieted with gluten bread and the ordinary diabetic diet, he left, passing 640 grains a day. On this occasion, his third admission, he passed during the first seventeen days of his stay at the hospital an average of 3,850 grains of sugar a day — the first two days over 11,000 a day — and the daily average quantity of urine passed was 127 fluid ounces. The patient during this time was on ordinary gluten-bread diabetic diet; four soya-bean biscuits were then added daily for six days, and the average quantity of sugar passed was 2,431 grains a day, and the daily average quantity of urine 89 fluid ounces. Then twenty soya-bean biscuits were substituted for the gluten bread, and during the following forty-three days the average quantity of sugar passed was 636 grains a day, and the daily average quantity of urine 69 fluid ounces. As the quantity of sugar passed decreased, the specific gravity of the urine fell. The patient gained two stone in weight while he was taking soya biscuit. When he was discharged on this occasion, he was passing about 300 grains of sugar a day. The biscuits produced no diarrhœa nor other ill effect.

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[5] Therapeutic Gazette, September 15, 1893.

[6] The Practitioner, May, 1893.

Two preparations of the soya bean are sold in England — soya bread and soya biscuits. The oil is removed from the flour from which they are made, and the writer says this may account for the fact that, so far as his experience goes, they do not produce diarrhœa, and that this is the experience of many others who have tried them. The biscuits, which are thoroughly baked and dried, are very palatable and will remain good an indefinite time; but the bread, however carefully made, will not in summer, at any rate, keep more than two or three days. Dr. White states that many patients prefer the taste of soya-bean preparations to gluten bread; they form a good substitute therefor, and it is a great advantage to be able to vary the monotonous food of patients suffering from diabetes mellitus. He also states that according to Dujardin-Beaumetz soya-bean bread contains less than three per cent. of starch or sugar, while the latter finds that the best varieties of gluten bread contain at least sixteen per cent. of starch and saccharine substances. Twenty-three soya-bean biscuits weigh six ounces, the amount of gluten bread given in the usual diabetic diet at Guy's Hospital.

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Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, Long Branch, N. J.,
July 25, 26 and 27, 1893.

FIRST DAY. — TUESDAY.

THE PRESIDENT'S ADDRESS

was delivered by **Dr. Henry M. Lyman**, of Chicago.

After some reminiscent remarks relating to the study of nervous diseases, he called attention to their predisposing causes, and said that we must not be content with the simple recognition of disease, but must be able to classify it etiologically as well. Such is the fact with regard to rheumatism affecting the nervous system. The marked forms chiefly affecting sensation are not so commonly recognized, and are frequently ascribed to other causes. They are usually observed in elderly people of a nervous temperament and an arthritic diathesis, and differ from many other similar disorders of sensation in being transient, vagrant and of brief duration. Among these ailments is a universal prickling over the surface of the skin; sometimes it is limited to certain points where the patient experiences a sudden sharp prick, like a flea bite. This may interfere with or delay sleep. Another disorder of cutaneous sensation often affects the scalp, and is occasioned by irritation of the superficial nerves of that region. The duration of the attack rarely exceeds a single day. Closely associated with these disorders are the various transient perversions of sensation that may be felt in the Eustachian tubes, the pharynx and about the fauces. Another of the symptoms of marked rheumatism is a peculiar and disagreeable feeling in the tongue. This sometimes assumes the severity of a genuine neuralgia, and manifests a greater degree of persistence when associated with obesity, diabetes or gout than when connected with rheumatism alone. The œsophagus and fauces, and sometimes the muscles of the eye-balls, are similarly affected. These patients are also attacked by a paroxysmal cough associated with headache. The most distressing of all these forms of pain is gastralgia. The previous history and the concurrence of other rheumatic symptoms of a more stable character will, of course, add greatly to the certainty of the diagnosis.

HETEROGENEOUS PERSONALITY.

Dr. Smith Baker, of Utica, read a paper with this title. He defined heterogeneous personality as that condition in which the characteristics of ancestry are not blended into a permanent whole, and reported the case of a little girl who presented frequently recurrent attacks of functional perversions and distress which could not be satisfactorily explained except upon the inference that the dissimilar traits noticeable in her grandparents had not been blended in the personality of her mother, and so had proved to be the ground-field of the grandchild's affection. But the question arises, Is such a view of the case professional or scientific good sense?

We can never answer intelligently until the commoner facts of family life shall have been more minutely studied. Thus, such trite matters as dreams, somnambulism, the solving of problems unconsciously or subconsciously, the up-rush of facts and arguments in the act of composition and the play of genius should be investigated.

Inquiries in states of acute illness, and the study of moods and transformations of character, etc., all should receive more attention by physicians, in order that causation in cases of functional derangement may be the more accurately conceived. In doing this, assistance may be found in many instances of so-called reflex disease. Heterogeneous personality should always be looked for in the neuropathic constitution. But more particularly is this of use in considering the problems presented by neurasthenia and the sexual perversions. Not so frequently, perhaps, is the trouble owing to the commonly assumed overwork, etc., as to the unceasing warfare within between the "lower" impulse, and the "higher" determination. Students, professional men and many others whose physical abnormities or mental peculiarities, reveal the sensitive, easily impressed nature, are especially apt to be victims of the uncoalesced personality. Its bearing upon questions of marriage and parentage renders it worthy the attention of all.

Dr. Lyons, of New York, referred to the opposite sides of character as seen among the insane. An educated woman may be agreeable and lovable in her normal condition, but vicious when in the abnormal state. He knew of such a patient who would frequently apologize and do her utmost to resist the impulses to do wrong. He thought that such behavior might be due to abnormity in the development of the cerebral hemispheres or to some interference with the circulation.

Dr. Parsons, of Sing Sing, expressed the view that in persons with a tendency to evil thinking and acting, such might be overcome by suitable environment. After a time the absence of restraint permits of a continuance or permanency of the abnormal condition. This would probably account for many of these cases.

Dr. Hinsdale, of Philadelphia, spoke of two authenticated cases of double consciousness. He thought that the medico-legal features of such cases, as well as those of changes in personality, were of especial interest, and should be reported and carefully analyzed.

DR. SEGUIN, of New York, believed that atavism was the more rational explanation. Blending of the characteristics of ancestors occurs normally. It was not right to confuse double consciousness of an epileptic nature with conflicts of character and personality.

DR. J. J. PUTNAM, of Boston, said that the treatment rested upon the systematic development of character. Hypnotism has taught us much in regard to this condition, and brings out in a striking manner certain phases of character. He recommended the development of the inhibitory powers.

DR. F. X. DERCUM, of Philadelphia, thought the case reported by Dr. Baker recalled the fact that there was lowered vitality at certain epochs, in women. Relationship between states of health might account for the peculiar mental variations.

DR. BAKER, in closing the discussion, referred to the various definitions of personality as being not sufficiently inclusive of the facts to be of accurate use. He urged the importance of the study of the subject, especially in its bearing not only upon the causation of actual disease, but in its relation to all our educational ideas and practices as found to-day in our school system. In this way we find means of obviating detrimental traits, and also of making dominant those more desirable and healthful.

DETENTION HOSPITALS FOR THE INSANE.

DR. MATTHEW D. FIELD, of New York, read this paper. After speaking of the wrongs inflicted upon the insane by committing them to county jails and prisons, there to mingle with tramps while awaiting the appointing of physicians to pronounce upon their mental condition, he gave a description of the reception pavilion for the insane at Bellevue Hospital, and the methods of examination and commitment by the city examiners. He declared the pavilion to be in every respect a hospital, with resident physicians and competent trained attendants. Though a plain and inexpensive building, it served its purpose very well. He advocated the establishment in all large cities of similar hospitals for the reception of those suspected of lunacy. He said that an ideal institution for this purpose would be a hospital constructed on the pavilion plan for the reception of the insane, inebriate and neurotic, with a small amphitheatre and sufficient wards for proper classification and detention for a reasonable time. A competent visiting, resident and examining staff of medical officers should be chosen, and clinical instruction regularly given. Such a hospital would secure prompt, humane and scientific treatment. The opportunity for longer observation, securing histories and examinations, would result in more complete and accurate certification. There being no need for hasty transfer to other institutions, the feeble, sick and certain selected cases, could be detained for treatment, and clinical instruction would be easily accessible to the entire medical profession.

DR. KNAPP, of Boston, said that there are no detention hospitals in Boston, and they have felt no urgent need for them under existing Massachusetts laws. A few emergency cases requiring immediate restraint are admitted to the general hospitals. Otherwise, they can be taken at once to the nearest asylum on emergency certificates. These consist of two separate certificates. A bond must be given by the superintendent or one of the physicians, to the effect that the patient is to be formally committed or released within five days. This system has proved eminently satisfactory, and has rarely been abused.

DR. MILLS, of Philadelphia, stated that the method described by Dr. Field was in vogue at the Philadelphia Hospital. There was a detention ward for isolating cases of insanity. Two physicians are assigned to examine these patients before commitment. This ward has also been used for several years for clinical instruction.

DR. PRESTON, of Baltimore, remarked that their lunacy laws were inadequate. They were endeavoring to establish a detention ward. At present insane patients are kept at police stations, as no general hospital is prepared to receive them. Their method of dealing with such cases was entirely unsatisfactory.

DR. PARSONS agreed with Dr. Field, and believed that such a ward would serve to diminish the number of improper cases sent to asylums.

DR. BAKER thought that a detention ward would prove extremely valuable for suspected cases of insanity, as found in private practice.

THE PRESIDENT said that in Chicago they have such a ward in the City Hospital, where these cases are detained until transferred. Their commitment laws are now quite satisfactory.

THE TEMPERATURE IN GENERAL PARALYSIS OF THE INSANE.

DR. FREDERICK PETERSON, of New York, read a paper with this title. He first reviewed the literature of the subject, calling attention to the statements of various authorities, that there are in general paresis extraordinary daily variations of temperature, that the average bodily temperatures are subnormal or hyperpyrexic, and that axillary asymmetry of temperature is particularly frequent. With the assistance of Dr. Langdon, the temperature of twenty-five cases from the wards of the Hudson River State Hospital for the Insane was carefully studied. Observations were made every two hours for one week in each case, and in ten cases temperatures were taken in the two axillæ simultaneously every two to four hours for a week.

He had reached the following conclusions:

(1) As regards the average bodily temperature, it corresponded with physiological norms. The statements in literature as to hyperpyrexic or subnormal averages could not be sustained.

(2) The diurnal oscillations of temperature in paretics also corresponded to physiological norms. Observations found in literature as to frequent extraordinary daily variations in such cases seemed to be absolutely erroneous.

(3) Asymmetrical axillary differences were so small that they could not be considered as abnormal, and certainly not of any diagnostic significance.

(4) When unusual variations of temperature occur in general paretics, their cause must be sought for in conditions not related to the pathological phenomena of paralytic dementia, but depending upon other thermogenic features unrecognized by the physician, or "masked" by the mental state of the patient. Thus, in Case II of his series, an increasing hyperpyrexia was noted during the second week's observations; but the pneumonia causing it was "masked" until the

fifth or sixth day, the patient dying on the sixth day. Again, in Case X, where the highest single daily oscillations was 3.4°, and the average daily oscillations for the week 2.2° F., the patient had bed-sores on the sacrum and heels, and was undoubtedly somewhat septicæmic. That the temperature might vary in the paralytic seizures of these cases, was not gainsaid, no observations having been taken in such conditions.

Dr. Gray, of New York, said that a large number of different pathological conditions are often included under the name of general paresis. He thought a number represent the terminal stages of intracranial syphilis.

Dr. Isaac Ott, of Easton, Pa., did not believe that the heat centres could be located from the symptoms of general paresis.

Dr. J. J. Putnam mentioned that he had occasionally noted oscillations of temperature in paretics.

Dr. B. Sachs, of New York, agreed with Dr. Gray as to the question of diagnosis. The results of his observations coincided with those of Dr. Peterson. He had recorded the rectal temperature. Elevations were often due to complications from gastric disturbances. The temperature was usually a little higher than in those who had no organic disease. He inquired if clinical studies of the heat centres had ever been made.

Dr. Ott, in reply, said that he knew of only two cases of pistol-shot injury to the brain associated with immediate rise of temperature.

Dr. Parsons remarked that in one of his cases the temperature was always normal.

Dr. Chas. K. Mills, of Philadelphia, regarded the manifestations of general paresis as so diverse in character that we could thus account for the different experience of various observers.

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Recent Literature.

Various Forms of Hysterical or Functional Paralysis. By H. Charlton Bastian, M.A., M.D., F.R.S., F.R.C.P., etc. 8vo, pp. xi, 199, with two diagrams. Philadelphia: J. B. Lippincott Company. 1893.

One of the most difficult problems of clinical neurology is to decide whether the symptoms of some obscure affection are due merely to so-called functional conditions or are the beginnings of some insidious degeneration in the nervous centres. More than one case of disseminated sclerosis or diffuse myelitis has been regarded as "hysterical" for months, until the development of grave symptoms settled the diagnosis. These lectures, which have been reprinted from the *Lancet*, do not render a solution of such problems a simple matter, — which no one would expect — but they do throw some light upon them, and, by a more scientific and careful classification of the facts now in our possession, they put our knowlege upon a better basis, give us better methods of investigation, and thus represent a distinct advance. As the author says, "A fuller and more accurate knowledge can only be brought about by a continuous methodical investigation and record of all the minute details." The diagnosis of "hysterical" or "functional" paralysis is but a half diagnosis, and many confuse matters still more by using the two terms almost synonymously. The problems of a "regional" and "pathological" diagnosis are still untouched. In regard to pathogenesis the author confesses our limitations. A part of the cases may be attributed to vaso-motor changes, yet such a theory has as yet no distinct evidence in its favor. In other cases the vaso-motor theory seems improbable, yet the difficulties of assuming a primary limited failure of nutrition are even greater. In regard to regional diagnosis, although our knowledge is still very limited, nevertheless by a close analysis of the symptoms, and a detailed examination much may be done. The author shows that some cases are of cerebral and others of spinal origin, and he gives the characteristics of paralyses due to functional changes in the different portions of the cerebral nervous system. Where the kinæsthetic centres in the Rolandic and marginal areas are alone affected, there is a loss of muscular sense with flaccid or spastic motor paralysis. If the sensory region of the internal capsule be also involved there is hemianæsthesia; and if the capsule alone be affected there is no paralysis, but a loss of muscular sense. If the efferent fibres from the kinæsthetic centres be affected there is paralysis without loss of muscular sense. In the spinal cases, if the pyramids be affected there is spastic paralysis without distinct loss of muscular sense, and no cerebral symptoms. If the anterior cornua be affected there is a flaccid paralysis. He therefore thinks that functional paralyses differ in degree and not in kind from those due to organic change, and he holds that the symptoms once thought distinguishing, such as muscular atrophy, bed-sores, incontinence, nystagmus, etc., are not infallible guides. Unfortunately he apparently does not follow his reasoning to its logical conclusion and accept fully the teachings of recent investigations. His study, however, paves the way to the thesis that must finally be accepted, that there is no "functional" disease, but that every morbid condition is due to some change in the structure of cell or fibre.

To the lectures is added the essay on the muscular sense, published in *Brain* some years ago, in which the author's well-known views as to the kinæsthetic nature of the Rolandic region are maintained, an essay on attention and volition, and a note on the sensory centres for touch and common sensibility.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-Book specially adapted for Students of Medicine and Pharmacy. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons; Professor of Chemistry and Analytical Chemistry in the Maryland College of Pharmacy, Baltimore, Md. Fourth edition, thoroughly revised. Philadelphia: Lea Brothers & Co. 1893.

The present edition of this manual has been thoroughly revised, and contains some additions. The sections on qualitative analysis and physiological chemistry are still incomplete, though they will doubtless be of service to the student if supplemented by lectures and demonstrations. These branches of chemistry should not, in our opinion, be given a place in a book which is substantially a text-book of descriptive chemistry. As a whole, however, the book before us is one of the best of the numerous works on chemistry which have been prepared specially for the use of the medical student.

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"GREATER LOVE HATH NO MAN THAN THIS."

THE Greeks made their gods simply themselves with all their potentialities glorified into certitudes, as if to demonstrate what a Greek could be at his finest and best. The hero was merged into the god. The world has ever been quick to recognize valor, delights in brave exploits, exults in signal instances of moral courage, and makes haste to raise monuments to its heroes. Humanity loves to see itself at its best. Our rich inheritance from the ages in stories of daring on the battle-field, or heroism on the quarter-deck, has, perhaps, blinded our eyes to the silent, single-handed combats where there is no enthusiasm of numbers, no excitement of banners and drums, no shout of victory. And perhaps among the glorious company of heroes unchronicled and martyrs unsung, no profession holds so large a place as that of medicine.

The physician knows that a foe as deadly as a bullet and far more insidious lurks in the micro-organism. But undaunted, high-hearted, strong in his professional loyalty, he takes the risk which personal contact involves, with no thought but wresting his patient from the grasp of death. But the world too often fails to see that thus the doctor merges into the hero.

Every physician knows many instances where his professional comrades have fallen by his side, struck down by infectious fevers or septic absorption received at the bedside of a patient. Notable instances have recently brought this peril afresh to our minds. A contemporary journal, in the last issue, records the death of a practising physician who caught the infection of yellow fever from a patient whom he was attending, and also the death of a promising young doctor to whom the infection of typhoid fever was communicated from a child patient at the New York Hospital. Last week it was our melancholy duty to report the death of a brilliant young physician of unusual qualities of mind and heart, who caught diphtheria from a patient at the Boston City Hospital.

On another page of this week's issue will be found the resolutions passed by the Visiting Staff of the hospital upon his death. In another editorial column of this week's issue also are references to several deaths from disease contracted in the discharge of duty among medical officers in the Marine-Hospital Service.

It will be observed that the personal risk is greatest to the hospital physician, not only on account of the large number of patients and variety of diseases which come under his care, but because the most malignant and extreme cases are naturally aggregated within hospital walls. It must be remembered that the physician and surgeon runs his greatest risk in that part of his calling where his skill and services are bestowed gratuitously.

Every call for medical aid in great epidemics has always brought a swift response of willing hearts and ready hands. Physicians have set aside all personal comfort and gone to the unpleasant surroundings of loathsome disease, doing not only the work of nurse but even of household drudge, because all others had fled in terror from the dead and dying. Self-sacrifice is, after all, the real essence of heroism. The great scourges, formerly regarded as dispensations of Divine wrath, but now known to be results of sanitary pollution, are yet full of imminent peril to the practitioner. The very scientific knowledge which helps him more intelligently to combat disease has also revealed the extreme subtlety of his invisible foe, and made clearer his hazardous calling. But increase of knowledge brings no shrinking to the physician. He puts fear under his feet and walks serenely on in the path of his self-appointed duty. Carlyle says of the hero, "Now and always, the completeness of his victory over fear will determine how much of a man he is."

To the unthinking, the surgeon at the operating table or the physician in the wards for infectious diseases is only a man pursuing his profession. But under the impassive exterior will be found "the stuff of which martyrs are made." He holds his life none to precious to be sacrificed, if need be, in relieving humanity's physical suffering, and surely "greater love hath no man than this, that a man lay down his life for his friend."

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ANNUAL REPORT OF THE MARINE-HOSPITAL SERVICE.

THE annual report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the fiscal year ending June 30, 1892, is the nineteenth annual report, though it covers the ninety-third year of the service. It also contains mention of many matters outside of the statistical reports of the hospital service which have occurred up to November 30, 1892.

Certain facts in regard to the composition of the service which occupy the first pages of the report are not only very interesting but also of great value as indicative of the character of the men upon whom the grave responsibilities of the service are placed.

During the year two boards convened for the examination of applicants for admission to the medical corps. Fifty-seven applied for permission to appear before the boards; twenty-seven actually presented themselves; and seven only were successful in passing the examinations.

The death of one of the most respected officers of the corps gives occasion for an appreciative notice of the man and also for a general notice of the liability to casualties in the service. Two of the medical officers are suffering from tuberculosis contracted, in one case, "undoubtedly in the performance of his hospital work," and, in the other, "hastened in its progress doubtless by the exposure and severe duty imposed upon him as officer in command of the Delaware Breakwater Quarantine." At least two officers have contracted small-pox, and quite a number have suffered in other ways.

Four different officers have died of yellow fever since 1878. A most pathetic letter from the wife of one of these officers draws attention to the fact that absolutely no provision is made for the families of those who fall in this service. The surgeon-general believes that upon fair representation at least some such provision might be made as has already been made for the benefit of officers and men of the Life-Saving Service, where a man's family, in the event of his death at his post, receives an amount equal to a full salary for two years.

Naturally, cholera occupies a very large share of the report; and the subject is treated in an interesting manner, giving a short history of the present epidemic and the documentary history of the efforts of the general government to control the importation of the disease; yellow fever and small-pox have also demanded attention, and are the subjects of some interesting documents.

It has been the custom for many years to append to the reports of the service, reports on interesting cases and operations, and also reports of fatal cases with the necropsies. These reports are growing in interest and value from year to year; and it is to be hoped that their possible value will be so fully recognized that greater care may be bestowed upon them.

As to the operations of the service in connection with the treatment of sailors of the merchant marine, the report shows that the total number of men treated was 53,610. The total number treated in hospital was 16,022. There were 479 deaths, and the amount expended was $512,657.18.

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ACTION OF IODOFORM ON PUS MICROBES AND ON THE LEUCOCYTES.

Maurel, who is well known by his researches on the leucocytes, has undertaken to solve the problem, why iodoform, which is so efficacious in preventing or suppressing suppuration, should apparently have so little action on the pyogenic staphylococci.[1]

He first experimented with a virulent culture (on gélose) of staphylococci in the presence of leucocytes. The latter speedily absorbed the staphylococci, but succumbed in less than two hours. In the control field, however, they accomplish their evolution and live from twelve to twenty-four hours. Maurel finds that the death of the leucocytes under the influence of the pus micro-organisms is due to a toxine contained in the bodies of these microbes, not to the mechanical action of the staphylococcus or to the products which the latter yields up to its environment. Under the influence of these same staphylococci, the red corpuscles become diffluent in fifteen hours, then disappear.

Another series of experiments were made by subjecting the figured elements of the blood to the action of iodoform in the dosage of 0.10 to 2.50 per kilogramme of blood. Neither the smaller nor the larger doses were found to be toxic to the leucocytes; the vital activity of these latter was, on the contrary, augmented, and the action on the red globules was *nil.*

A third series of experiments showed iodoform to be without marked action on cultures of the staphylococcus aureus and albus.

In a fourth series of researches, Maurel subjected both the leucocytes of human blood and cultures of the staphylococcus to the action of iodoform in varying proportions and under varying conditions. His conclusions are as follows:

(1) Iodoform attenuates the virulence of the staphylococcus. While in the virulent state, this micrococcus kills our leucocytes in less than two hours — when it is subjected along with the leucocytes to the influence of iodoform, the latter preserve their movements for eight hours, at least, and even complete their evolution.

(2) The staphylococci which have thus lost a great part of their virulence (and to such a degree that they are seemingly devoured by the leucocytes with impunity), keep all their reproductive energy unimpaired, so that virulence and the power of reproduction are independent properties.

A final conclusion is deduced that it is in both these ways — by augmenting the energy of the leucocytes and attenuating the virulence of the pus microbes — that iodoform opposes suppuration, which is, in the language of bacteriology, a massive slaughtering of the leucocytes. These teachings are in harmony with clinical experience as to the benefits of iodoform in preventing or arresting suppuration.

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MEDICAL NOTES.

Mütter Lectures. — The Mütter Lectures this year will be given by De Forest Willard, M.D., at the Hall of the College of Physicians in Philadelphia on Tuesday evenings from October 17th to December 19th. The subject is "The Surgical Pathology and Surgery of the Spinal Cord, the Vertebræ and Peripheral Nerves."

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[1] [illegible]

Yellow Fever. — The conditions at Brunswick and Jessup remain about the same, there being from twenty to thirty new cases of yellow fever each day with one to three deaths daily.

A Week on Cataract. — The Philadelphia Polyclinic offers physicians a course on cataract for the week commencing October 30th.

A Contribution to the History of Anæsthesia. — In the *Virginia Medical Monthly* for October, Dr. Luther B. Grandby of Atlanta, Ga., has an interesting article on the history of the discovery of modern surgical anæsthesia, which contains some new data relative to the work of Dr. Crawford W. Long.

Cholera Riots in Hamburg. — Several fatal riots have occurred in Hamburg this month growing out of attempts by the authorities to enforce sanitary regulations. They occurred in the suburbs among the poorest and dirtiest classes whose natural abhorrence of cleanliness allowed no extra sanitary measures to be enforced. The health officers, who were accompanied by the police, were surrounded by the crowd who attacked them with clubs and stones. In the last riot two officers were killed and their bodies trampled almost beyond recognition. A company of troops with fixed bayonets finally dispersed the mob. This opposition to the improved sanitation and the flaw in the filtering beds by which the Elbe water was mingled with that already filtered have accounted for the slight increase in the number of cases.

A Large Ovarian Cyst. — A case is reported by Dayot, in the *Archives Provinciales de Chirurgie*, of a young girl operated for an ovarian cyst of which she had been aware for three years. Fifteen litres of ascetic fluid were removed and the tumor which contained sixty-five litres weighed all told ninety kilogrammes while the patient weighed but thirty. There were numerous parietal adhesions, but fortunately none to the viscera.

BOSTON AND NEW ENGLAND.

Warning against Swindlers. — For a few days past, two young men who claim to be connected with the staffs of two Boston newspapers, have been soliciting aid from the business men of the city for a free bed for newspaper men at the Massachusetts General Hospital. No one has been authorized to solicit such a subscription, and the men are unknown to Boston newspaper workers.

Bequests. — The will of the late Mrs. Anne Sweetser, of Boston, bequeaths a thousand dollars each to the Free Hospital for Women and the Massachusetts Eye and Ear Infirmary, and names the Massachusetts General Hospital as one of five residuary legatees.

The Massachusetts School for Feeble-Minded Youth. — At the annual meeting of the corporation of the Massachusetts School for Feeble-Minded Youth, last week, the following officers were elected for the ensuing year: President, Dr. Samuel Eliot, Boston. Vice-President, John Cummings, Woburn. Secretary, Col. W. W. Swan, Brookline. Treasurer, Richard C. Humphrey, Boston. Trustees: John F. Andrew, of Boston; Samuel Hoar, Concord; E. C. Clark, Boston; Dr. George G. Tarbell, Boston; John Cummings, Woburn; Samuel Eliot, Boston. The annual report shows an increase in the number of inmates during the year, the present number being 420.

NEW YORK.

Cholera at New York. — The outbreak of cholera on board the steamer *Russia* which arrived in New York October 9th from Hamburg with two cases of cholera on board, there having been five deaths on the voyage, happily proved of short duration, and while one passenger died after her arrival at quarantine, no new cases developed.

A Diploma Dealer Sentenced. — Dr. Walter May Rew of New York, whose bogus medical college was exposed last July, was sentenced October 10th to three months' imprisonment in the penitentiary.

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Miscellany.

WALTER GAY STEBBINS, M.D.

The Members of the Medical and Surgical Staff of the Boston City Hospital desire to place upon record and also to extend to the relatives and friends their high appreciation of the character and attainments of the late Dr. Walter Gay Stebbins.

As a student he was zealous, thorough and painstaking; as an officer in the hospital he was faithful, efficient and trustworthy; and as a man he was respected and esteemed by all for his many estimable qualities.

The death of Dr. Stebbins at the beginning of his career so bright in the prospects for the future, seems peculiarly sad, from the fact that the fatal illness was probably contracted while doing temporary duty in that department in which he had, at a previous period, served the hospital faithfully for several weeks without falling a victim to the dread disease.

The members of the Staff hereby express their deep sense of the great loss sustained by this hospital, by the profession and by the community, in the untimely death of their late associate, and they beg to extend their warmest sympathy to the family and friends of the deceased.

George W. Gay,
John G. Blake, } *Committee.*
A. L. Mason,

At a meeting of the Staff of the hospital the above resolutions were adopted; and it was voted to send a copy to the mother of Dr. Stebbins and to the *Medical Journal*, and that they be spread upon the records.

Edward J. Forster,
Secretary of the Visiting Staff.

Boston, October 13, 1893.

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MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A stated meeting was held at the Medical Library, Boston, on Wednesday, October 4, 1893. The meeting was called to order at 11 A. M., the President, Dr. James C. White, in the chair. Ninety councillors were present.

The following were appointed delegates to other State Medical Societies:

Vermont. — Drs. W. S. Birge, of Provincetown; O. J. Brown, of North Adams.

New York. — Drs. W. H. Pierce, of Greenfield; C. F. Withington, of Roxbury.

New York State Medical Association. — Drs. J. M. Harlow, of Woburn; Geo. B. Shattuck, of Boston.

Seventy-fifth Anniversary of Medical Society of the District of Columbia. — Dr. H. P. Walcott, of Cambridge.

The Committee on Publications, to whom was referred at the last meeting the question of the advisableness of the continuance of the purchase and distribution of "Braithwaite's Retrospect" to the Fellows of the Society, reported that the majority of replies received to a circular asking whether the Fellows would prefer to receive "Braithwaite" as at present, or to give it up and have the annual assessment reduced to $4.00, indicated that they would prefer the latter arrangement. The committee recommended the passage of the following resolutions:

(1) That the subscription to, and distribution of, "Braithwaite's Retrospect" be discontinued as soon as practicable, and that the librarian take the necessary steps to carry out this vote.

(2) That action on the question of the annual assessment be postponed to the next meeting of the council.

After prolonged discussion the resolutions offered by the committee were adopted.

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ATROPHY OF THE OPTIC NERVE FOLLOWING IODOFORM POISONING.

Valude[1] has reported to the Ophthalmological Society the case of a boy who had suffered extensive burns which were being dressed with iodoform. Symptoms of poisoning occurred, with vomiting, all of which ceased upon omitting the iodoform from the dressings. Simultaneously with the vomiting, complete amaurosis occurred, which had persisted for a year, and was accompanied by complete atrophy of both optic nerves. The question whether the amaurosis resulted from the burns or the iodoform was decided by the observer in favor of the iodoform, on the basis of its close association with the other symptoms of poisoning and the well-known cerebral disturbances caused by iodoform.

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THE PROGRESS OF PSYCHOLOGY.

Professor Cattell, of Columbia College, in reviewing the progress of psychological knowledge, in an article in the *Popular Science Monthly*, speaks most encouragingly of the future possibilities of the laboratory study of this science. The old-time methods of speculative psychology are past. Psychologies are now written which do not range at large through metaphysics, logic, ethics and æsthetics. Gradually the true differentiation of this science and its proper correlation to other studies is being appreciated. It is recognized to be a kindred and equal division of philosophy with physics, physiology or chemistry, and not a subordinate addendum to any one; and this recognition has resulted in the attempt to apply the methods and measurement of exact science to the study of the mind.

The backwardness of psychology is not surprising. Certain material needs must be satisfied before there is time for self-observation; and the elements of physical science are not only more necessary to life than knowledge of the mind, they are also more easily obtained. It is natural, therefore, that as biology is more backward than physics, so psychology is more backward than biology. It is this very backwardness of psychology which accounts for its close connection until very recently with philosophy, which, as knowledge increased and a division of scientific labor became necessary, has been obliged gradually to yield one science after another a separate field. "Philosophy is not the arithmetical sum of the special sciences, but has a peculiar task — to investigate the conditions of knowledge and to form a theory of the ultimate nature and meaning of things. Psychology is no more concerned with these matters than is physics; its subject-matter corresponds exactly to that of any other natural science; and as a natural science, it need not, and should not concern itself with the origin, destiny and meaning of mind, but wholly with the phenomena of mental activity."

For this reason it is important to realize what should not be done in laboratories of psychology. They are not intended for the study of physiology. The functions of the nervous system may throw light on the workings of the mind, but the debt is reciprocal. The commonly used term physiological psychology is awkward. There is a science of physiology and a science of psychology, and there are relations between body and mind. But these relations are wider than this — they are between matter and mind. The world is one world, and all science is interdependent; but the development of psychology has drawn a sharper line between mental and physical processes than was ever recognized before, and psychology can never be made a branch of physiology.

As to the practical application and value of psychological knowledge to daily life, there is in the proper conduct of a laboratory much to be hoped for. As the result of such useful application, he hopes to see more rational progress made in methods of education, that the poor children may no longer "contribute to the progress of educational methods somewhat as the frog contributes to the progress of physiology. In our laboratories of psychology we can test the senses and faculties of children. We can determine whether the course of study is developing or stunting fundamental characteristics, such as accuracy of perception, quickness of thought, memory, reasoning, etc. We can learn what methods best strengthen each of these faculties without injuring the others. The overtasked teacher finds a child slow, and places it with more backward children, which increases its slowness. A more exact test of the child's mind may show that it is indeed slow, but that the slowness is more than counterbalanced by intensity and range. Methods must be applied which will shorten the time of thought, and will not interfere with its force and extent. We can determine what size and composition of class, what length of lesson, session and term are most favorable. We can learn whether it is better for the student to do a thing, to see it, to hear it, or to read about it. We can never build a road to learning which need not be travelled by the student, but we can build a royal road in the sense that it is the shortest and best of roads.

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[1] [illegible]

Above all, our tests and measurements will demonstrate the value of learning itself, and tell us whether under given circumstances it is secured by the development or sacrifice of more essential qualities, such as health of body, serenity of mind, common-sense, honesty and kindliness."

Similarly we may make direct application of psychological tests in medicine or in the solution of many of the subtle sociological questions of the day. "Indeed, the measurements and statistics of psychology, which at first sight may seem remote from common interests, may in the end become the most important factor in the progress of society."

◆

THE MEDICAL ASPECT OF DISEASED TEETH.

ONE of the distinguishing marks of advancing social position is the amount of care bestowed upon the teeth. The attention paid to personal cleanliness marks a general class only, the finer degrees of which are often determined by the especial care of the oral cavity. Aside from the æsthetic reasons for dental cleanliness, and the avoidance of unnecessary pain, which also is a mark of advancing civilization, our present knowledge of bacteriology offers the most cogent arguments for greater care of the teeth. Local caries of the jaw or empyema of the antrum of Highmore are, perhaps, the most serious result which most physicians have in mind in their daily routine. The more accurate searching for ultimate causes of disease has shown the wide-spread and often subtle influence which a neglected mouth may exert. Hipple calls attention to these various results in a recent number of the New York *Medical Journal*. He has found no less than forty fatal cases of pyæmia, acute and chronic, which were directly traceable to a carious tooth.

The anatomical paths of entrance for pathogenic organisms from the teeth are numerous and direct both to the general economy and locally to the brain. An interesting and unusual case was one of fatal actinomycosis in which the autopsy revealed an actinomycotic cavern in the anterior portion of the superior lobe of the left lung, in which was an irregular calcareous body about the size of a No. 6 shot. On microscopic examination this proved to be a small fragment of dentine surrounded by phosphate and carbonate of lime, incorporated with which were numerous threads of the ray fungus. There seemed to be no doubt that the fragment was the carrier of the infection.

He calls especial attention to the importance of buccal cleanliness in cases of gastric disturbance, and speaks of the almost entire futility of sterilizing articles of diet for patients in whose mouth chronic abscesses exist, or whose teeth are covered with tartar mixed with mucus and food in a state of decomposition.

The numerous nervous reflexes — ocular, aural and neuralgic — are easily explained but also easily not associated with their true cause. It is, however, the importance of bacterial infection which should be emphasized. As far back as 1802 Dr. Rush wrote: "I cannot help thinking that our success in the treatment of all chronic diseases would be much promoted by directing our inquiries into the state of the teeth of sick people, and by advising their extraction in every case in which they are diseased. It is not necessary that they should be attended with pain to produce disease, for splinters, tumors, and other irritants often bring on disease and death when they give no pain and are unsuspected as the cause of them."

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A PROTEST AGAINST THE OPIUM COMMISSION.

THE British Indian Medical Association has presented a petition protesting against the opium commission appointed with a view to prevent the production of opium in India. They say that the ryots cultivating poppies are more contented and better off than those who cultivate food grains; that many provinces are dependent for their support upon this industry, as the land otherwise cultivated could not be made to yield sufficient returns; that the opium is not used in India to cause intoxication, the greater part being exported; that the natives who do use the drug habitually are dependent upon some form of mild stimulant, owing to the swampy nature of much of the land they work in; that even used to excess the results are less harmful than those of alcohol, which would be the natural substitute for it, and the increased consumption of which would in all reason result in a greater proportion of crime; that the moral effect upon China would not be forthcoming, as the production of opium in China is already conducted on such a scale that to prohibit the export of opium to China would have but two results as regards China — the first, to give to the Chinese opium-growers the most complete protection against foreign competition, and the second, to force those opium-eaters who can afford to pay the higher price which Indian opium commands to consume the inferior product of native manufacturers; that the misery, distress and discontent, that would be caused all over the country by the prohibition of opium, would be rendered intolerable by the increased taxation, which would be necessary to enable the government of the country to be carried on after surrendering the opium revenue.

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THE INCREASING PREVALENCE OF THE ITCH.

ABOUT five years ago Dr. J. C. White[1] called attention to the increasing frequency of scabies in this city, both in hospital and private practice. Its increase among the fairly well-to-do classes, as well as among the foreign population, seemed to some extent out of ratio with the increase in immigration to Boston during the years under discussion, namely, 1869 to 1888.

A similar and still progressing frequency has been noted elsewhere; and Stelwagon publishes the results of his observations in Philadelphia during the last twelve years. He finds that in the various skin clinics with which he has been connected the itch now constitutes from ten to fifteen per cent. of all cases. His figures are taken from the Skin Services of the Philadelphia Dispensary, the Northern Dispensary and the University, Philadelphia, Howard and Jefferson Hospitals. In 1880 the number of patients seen was 657, with 11 cases of scabies. In 1891 there were 1,794 patients and 260 cases of scabies, an increase of from 1.67 per cent. to 14.49 per cent. In 1892 there were but 1,339 patients under his observation, 13.52 per cent. of them having scabies.

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[1] Boston Medical and Surgical Journal, February 14, 1889.

He did not find the disease at all limited to the poor or foreign population though it was more common among them, nor does he consider his figures complete as the patient treated is often but one of a whole family affected. The increase thus noted in Boston and Philadelphia is not limited to these seaport cities, as is shown by the figures of the American Dermatological Association. In tabulating the cases of skin disease under observation in Boston, New York, Baltimore, Chicago and St. Louis, a steadily increasing percentage of scabies is seen. The figures may be condensed to these footings:

	Patients	Cases.	Per cent.
1880	[illegible]	[illegible]	0.9
1881	[illegible]	134	1.21
1882	11,402	[illegible]	1.77
1883	15,490	[illegible]	[illegible]
1884	8,934	300	3.36
1885	14,007	[illegible]	3.15
1886	14,666	[illegible]	4.31
1887	10,366	[illegible]	6.2
1888	14,253	[illegible]	6.76
1889	[illegible]	[illegible]	5.53
1890	6,484	[illegible]	[illegible]
1891	12,574	[illegible]	5.39

In private practice the percentage rose from 0.52 in 1880, to 2.17 in 1887. Since that date private cases have increased almost as rapidly, proportionately, as have the dispensary cases.

The most important cause of this increase is in the steadily decreasing standard of cleanliness of the present immigrants, especially among the Russians, Poles and Italians. "Judged by dispensary observation, it would seem that the itch is the normal state in the steerage of to-day. These cases arriving in our midst are so many additional foci for its spread."

Other important factors are the day-nursery and children's home, "it being not uncommon to find that the invasion of a whole family may be traced to the return home of a child temporarily placed in such institutions."

"Another element in its increase, and especially among the better classes, is to be found in our growing tendency to travel, and the rapid multiplication of travelling salesmen and drummers. With ordinary and proper precautions on the part of hotels, this factor should sink into insignificance, but it is extremely doubtful if the linen in the average hotel bed is always changed, or changed in its entirety, after a single night's occupation; nor are the cheaper hotels alone culpable."

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THERAPEUTIC NOTES.

COMPARATIVE INFLUENCE OF LARGE AND SMALL DOSES OF IRON. — The comparative effects of large and small doses of iron and the indications for the one or the other are discussed in the *Therapeutic Gazette*. The experience of the writer in treating twelve cases of anæmia which were as far as possible alike confirmed his belief in the value of small doses. Six of these people received two or three grains of reduced iron three times a day, and the remaining six received one-third of a grain three times daily. The six that received the small doses had far less disorder of digestion than those who received the large doses. They recovered as promptly as those receiving the large doses, if not more so. It is true that in some conditions in which there is gastro-intestinal disorder associated with the formation of gas arising from fermentation or decomposition, and in which the anæmia is largely due to destruction of the constituents of the blood by the absorption of poisonous materials from the intestine, large doses of iron are absolutely necessary, because in these instances only a small quantity of iron is absorbed, and the greater amount of it forms a sulphide of iron, or other compound, with the contents of the intestine. Where we have, therefore, a destruction of the iron in large amount it may be necessary to give it in full dose; but, unless this is the case one-eighth of a grain of reduced iron will in most cases give better results than three grains. Under these circumstances constipation more rarely occurs, and we also avoid in this way the so-called iron headache.

MORPHINE IN PUERPERAL ECLAMPSIA. — In a recent dissertation published by Kranz, under the direction of Veit, he gives the results of seventeen cases of eclampsia during pregnancy and parturition. All were treated in a similar manner by morphine. There were two fatal cases — one due to rupture of the uterus, and one to mitral stenosis with contracted kidneys. Four of the children were dead, in two of whom any deleterious action of the morphine was clearly ruled out. The effect which followed the initial dose, always 0.03 gm., was immediate and often lasting. If necessary the injection was increased gradually to 0.09 gm. in the course of nine hours. The largest amount given in any case was 0.095 gm., in two hours and a half.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 7, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	[illegible]				
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New York	1,891,306	742	312	18.72	11.83	[illegible]	1.17	5.72
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.92
Brooklyn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.56	4.16
St. Louis	[illegible]			—	—	—	—	
Boston	[illegible]	[illegible]	[illegible]	[illegible]	10.08	[illegible]	[illegible]	6.24
Baltimore	[illegible]					—		—
Washington	308,431							—
Cincinnati	305,000	93	[illegible]	[illegible]	17.12	[illegible]	2.14	[illegible]
Cleveland	290,000	[illegible]	[illegible]	[illegible]	11.66	[illegible]	3.18	[illegible]
Pittsburg	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.04	—
Milwaukee	[illegible]	[illegible]	44		5.28	[illegible]	2.64	[illegible]
Nashville	[illegible]	24	[illegible]		29.12		4.16	
Charleston	65,165					—	—	—
Portland	[illegible]			—		—	—	
Worcester	96,217	28	11	14.28	[illegible]	[illegible]	—	3.57
Fall River	[illegible]	31	[illegible]	22.61	12.92			
Lowell	87,191	[illegible]	11	24.24	15.15	12.12	[illegible]	3.03
Cambridge	77,100			—		—		—
Lynn	[illegible]	18	[illegible]	11.11	22.22	—		—
Springfield	[illegible]	16		[illegible]		12.50	12.50	—
Lawrence	[illegible]							
New Bedford	[illegible]	[illegible]	14	3.70	7.40			3.70
Holyoke	[illegible]	14	[illegible]	50.00	21.42	35.70	14.28	—
Salem	32,233	[illegible]		—	[illegible]		—	
Brockton	32,140							—
Haverhill	31,396	4	1	25.00			25.00	
Chelsea	[illegible]	[illegible]	[illegible]	26.66	13.33			6.66
Malden	[illegible]	10	1	10.00		—		—
Newton	[illegible]			—		—		—
Fitchburg	27,146	[illegible]		—		—		—
[illegible]	26,972	[illegible]		42.84	14.28	—		—
Gloucester	[illegible]	4		25.00			25.00	
Waltham	[illegible]		1	—		—		—
Quincy	19,642	[illegible]	1	—	12.50	—	—	—
Pittsfield	[illegible]					—		—
Everett	[illegible]					—		—
Northampton	16,331	[illegible]		—		—		—
Newburyport	[illegible]	[illegible]		—		—		—
Amesbury	[illegible]	[illegible]		—		—		—

Deaths reported [illegible] under five years of age [illegible], principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 436, consumption 279, diarrhœal diseases 217, acute lung diseases 205, diphtheria and croup 110, typhoid fever 49, scarlet fever 21, whooping-cough 20, cerebro-spinal meningitis 19, measles 2.

From small-pox New York 3. From scarlet fever Pittsburg 8, Boston 7, Philadelphia 2, Brooklyn, Cleveland, Milwaukee and Chelsea 1 each. From whooping-cough New York and Philadelphia 5 each, Brooklyn 4, Boston 3, Cincinnati, Cleveland and Pittsburg 1 each. From cerebro-spinal meningitis New York 5, Brooklyn and Boston 3 each, Cleveland and Lynn 2 each, Worcester, Somerville, New Bedford and Everett 1 each. From malarial fever Brooklyn 2, New York, Philadelphia and Nashville 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending September 30th, the death-rate was 20.2. Deaths reported 4,001; acute diseases of the respiratory organs (London) 231, diarrhœa 339, diphtheria 124, fever 98, whooping-cough 90, scarlet fever 76, measles 28, small-pox (Bradford 5, London 2, Birmingham and Oldham 1 each) 9.

The death-rates ranged from 12.3 in Huddersfield to 31.0 in Sunderland; Birmingham 16.5, Bradford 21.2, Cardiff 18.7, Halifax 14.7, Leeds 23.2, Leicester 20.6, Liverpool 25.9, London 21.1, Manchester 22.5, Newcastle-on-Tyne 15.6, Nottingham 13.7, Sheffield 20.9.

METEOROLOGICAL RECORD,

For the week ending October 7, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.†
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 1	29.71	52	59	44	53	72	62	N.W.	N.W.	12	20	O.	O.	
M.. 2	29.90	55	59	51	75	[illegible]	88	N.W.	E.	8	4	O.	O.	
T.. 3	30.10	55	60	50	70	94	82	N.	E.	8	10	R.	C.	
W.. 4	30.04	53	55	51	94	90	92	N.E.	N.E.	12	5	O.	O.	.01
T.. 5	30.04	58	65	51	80	81	80	O.	S.W.	0	8	C.	C.	
F.. 6	30.14	57	61	53	80	88	84	N.	S.	4	9	O.	C.	
S.. 7	30.01	65	74	56	94	79	86	S.	S.W.	14	8	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 7, 1893, TO OCTOBER 13, 1893.

Leave of absence for one month, to take effect on or about October 15, 1893, is granted CAPTAIN GEORGE MCCREERY, assistant surgeon, U. S. A., Fort Sidney, Nebraska.

FIRST-LIEUT. ALLEN M. SMITH, assistant surgeon, will proceed without delay to Fort Missoula, Montana, and report to the commanding officer of that post for temporary duty, to enable CAPTAIN WILLIAM D. CROSBY, assistant surgeon, to take advantage of the leave of absence granted him.

FIRST-LIEUT GEORGE D. DESHON, assistant surgeon, is relieved from further duty pertaining to the medical section of the War Department Exhibit, World's Columbian Exposition, Chicago, Ill., and will return to his proper station, Fort D. A. Russell, Wyoming.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 14, 1893.

GEO. H. COOKE, medical inspector, from Navy Yard, League Island, Pa., and to special duty in Philadelphia, Pa.

E. Z. DERR, surgeon, ordered to Navy Yard, League Island, Pa.

B. S. MACKIE, surgeon, detached from duty in Philadelphia, Pa., and wait orders.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, October 23, 1893, at 8 o'clock, P. M.

Dr. F. I. Knight: "On Sending Patients Away from Home." Discussion opened by Dr. E. H. Whittier.

Dr. Edwin E. Jack: "A Case of Recurrent Paralysis of the Oculo-motor Nerve." Discussion opened by Drs. O. F. Wadsworth and G. L. Walton.

JOHN T. BOWEN, M.D., *Secretary.*

RECENT DEATHS.

JOHN S. H. FOGG, M.D., died in South Boston, October 16th. He was a graduate of Bowdoin College in the class of 1846 and of the Harvard Medical School in 1850. He served in the Legislature and was for many years a member of the Boston School Committee. He was an interested student of early colonial and natural history and had wide reputation as an autographist of unusual accuracy of judgment. He was a sufferer for the last twenty years from paraplegic paralysis, but maintained an unfailing cheerfulness and patience in continuing such work as his affliction permitted.

HJALMAR A. ABELIN, M.D., formerly professor of children's diseases in the Carolina Institute, Stockholm, died September 13th, aged seventy-six years.

EPAMINONDA ABATE, M.D., died in Naples, September 26th, aged seventy years. He was much interested in the favorite Italian study of methods for petrification of human corpses and rediscovered the method of Dr. Segato, which had been kept a secret and which was thought to be lost on the death of the inventor. Following up his researches as to the best means of arresting putrefaction, he gave to the results a practical turn for the conservation and transport of alimentary substances. He devised and carried out a special means of importing the flesh of animals slaughtered in South America into Italy — a means till then unknown to his compatriots.

BOOKS AND PAMPHLETS RECEIVED.

Diocese of Massachusetts. Tenth Annual Report. 1893.

Hysterical Aphonia. By W. Scheppegrell, A.M., M.D., Reprint. 1893.

The Duty of the State to the Insane. By Dr. Andrew MacFarlane. Reprint. 1893.

Perityphlitis; Report of Three Cases of Perforating "Cæcitis" and "Pericæcitis." By F. C. Schæffer, M.D. Reprint. 1893.

Tetra-Ethyl-Ammonium; a New Solvent for Uric Acid Discovered at the Edison Laboratory. By Frederick Peterson, M.D. Reprint. 1893.

Quarantine *vs.* Sanitation. Modern Scientific Views of the Cause and Prevention of Asiatic Cholera. By William T. Sedgwick, Ph.D., Boston. Reprints. 1892–93.

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1892. Washington: Treasury Department. 1893.

Heath's Practical Anatomy, a Manual of Dissections. Eighth edition. Edited by William Anderson, F.R.C.S. With 329 engravings on wood. Philadelphia: P. Blakiston, Son & Co. 1893.

Sarcoma of the Pons and Glio-Sarcoma of the Cerebellum. Acute Ulcerative Endocarditis; a Brief *Résumé* of the Pathology of Eight Cases. Vitelline-Duct Remains at the Navel. By Ludwig Hektoen, M.D., Chicago. Reprints. 1893.

The Medical Press. The Spelling of Some Medical Words. A Temporary Change in the Axis of Astigmatism. The Duty of the Community to Medical Science. The Pernicious Influence of Albinism upon the Eye. By George M. Gould, A.M., M.D., Philadelphia. Reprints. 1893.

Essentials of Bacteriology: being a Concise and Systematic Introduction to the Study of Micro-organisms for the use of Students and Practitioners. By M. V. Ball, M.D., physician to the Eastern State Penitentiary at Philadelphia. Second edition with eighty-one illustrations, some in colors, and five plates. Saunder's Question Compends. Philadelphia: W. B. Saunders. 1893.

Hernia; its Palliative and Radical Treatment in Adults, Children and Infants. By Thomas H. Manley, A.M., M.D., visiting surgeon to Harlem Hospital; consulting surgeon to Fordham Hospital; member of New York Academy of Medicine, American Medical Association, New York State and County Medical Association, National Association of Railway Surgeons, etc. Philadelphia: The Medical Press Co. 1893.

Essentials of Minor Surgery, Bandaging and Venereal Diseases. Arranged in the form of questions and answers. Prepared especially for students of medicine. By Edward Martin, A.M., M.D., clinical professor of genito-urinary diseases; instructor in operative surgery and lecturer on minor surgery, University of Pennsylvania; surgeon to the Howard Hospital; assistant surgeon to the University Hospital. Second edition, revised and enlarged. Seventy-eight illustrations. Philadelphia: W. B. Saunders. 1893.

Lecture.

LECTURES ON SURGERY.[1]

[illegible]

[illegible]

XVIII.

WOUNDS OF THE FACE.

Wounds of the face open up the whole subject of plastic surgery. The essential point is, that in every operation, the skin that has been cut and torn away should be replaced, and preserved, if possible; for a very slight scar and loss of substance may make quite a difference in the facial expression. Thorough cleanliness, careful matching, sewing up with fine thread and fine needles. I think you have noticed when an amputation stump, or breast, which has been excised, has been shown as a fine result of first intention, a fine even scar which finally sank away into a white line, but on either side of it a long row of very conspicuous stitch-holes; and they are slower to fade away, dimple the skin, and draw it in, making more marked scars. This, however, in the breast makes little difference; but on the face it makes a great difference; so that the finest sewing must be done, or the buried suture used, so as to avoid so many conspicuous punctures.

A large class of operations used to be done to repair the nose, when it was lost. I think surgeons are becoming rather more discouraged about these operations, the restoration of the nose. It can be restored by flaps taken in various directions; but to restore its shape and its color is almost impossible. You generally have a flat, deformed, soft nose, with a very pale color; and it is scarcely less conspicuous than the hole it was meant to cover; consequently, unless you have to operate on the nose for the extermination of active disease going on, it is a question whether it is not better to advise the patient to wear a mask over the nose, than to do a plastic operation on a large scale. The *papier-maché* noses which are made are extremely good, and can be replaced when they wear out, without much expense.

On the eyelids and lips plastic operations are of great importance, especially to avoid extreme drawing down of the lower lid leading to constant flow of tears over the cheek, to gradual change of the inner surface of the lower eyelid from its long exposure, and to danger of ulceration of the cornea from long exposure to the air; so that every resource of grafting or turning over flaps should be practised about the lids; also about the lips, where much can be done.

It is quite a common thing for foreign bodies to be put in the nose and ears by children. One should suspect in the case of a child who is supposed to have a polypus in the nose that he has instead a foreign body. It will prove to be a foreign body in a large percentage of cases. The child has inserted it unseen; is too young or afraid to tell of it. It remains caught on the turbinate bone, produces ozæna, filthy discharge, and is supposed to be a polypus. I say this to impress on you the importance of very thorough examination before any operation is undertaken in the child's nose. The foreign body once found, can be easily extracted in a variety of ways — with the hook or snare; or, if necessary, by cutting up the ala of the nose by a simple incision; turning it one side; taking out the foreign substance; the subsequent scar is almost nothing.

In the ear, the foreign bodies are not so often put in, as they exist in the form of some living creature; either a little bug or a fly, an insect of some sort. There is a very simple expedient to relieve the distress which these insects occasion immediately, which is harmless; and that is to pour in, or inject either oil, or melted mutton-tallow, and allow the latter to set in the ear. It does so in a very few minutes. The insect is imprisoned and killed, and can be syringed out and extracted at leisure. I speak of this as preferable to water because it is more effectual. You will hardly realize the intense agony and almost mania inflicted on a person by the presence of an insect in the ear which is free to buzz on the drum. The torture is terrible; and speedy inflammation is set up, unless the insect is removed. It is easier to destroy the insect in this simple way than to search for it while the patient is in distress.

SUICIDAL OR HOMICIDAL ATTEMPTS TO CUT THE THROAT.

The person who attempts to cut his throat, in the majority of cases, cuts too high to destroy life. A large proportion of the cuts are directly beneath the chin; and, if they go deep enough, open the floor of the mouth. The cut is directly between the hyoid bone and the chin usually; next between the hyoid bone and the top of the larynx; and next opening the trachea. Homicides occasionally seize the victim and cut the throat so thoroughly that a simple transverse cut divides also the vessels; but a suicide rarely divides the vessels; they lie so deep, descend backward so rapidly as they go down the neck behind the sternum, that they are rarely reached by the ordinary transverse cut.

The danger of the ordinary cut throat consists in the effect it is going to have upon the breathing, and upon the chink of the glottis, either by hæmorrhage, or by suffocative œdema. All cuts above or through the larynx, above the level of the chink of the glottis, are dangerous in the consequences they may bring to the glottis itself. The vessels cut are usually small. The nerves which are reached by a transverse incision are few in number, and only terminal branches; and were it not for the chance of trouble taking place in the breathing apparatus subsequently, the injuries would be very rarely fatal.

However, the person sometimes cuts lower down, and cuts below the vocal cords; then he is no more in danger of suffocation than in the operation of tracheotomy; and the cut low down is harmless as regards the dangers of dying of dyspnœa.

The important point in regard to cuts high up is that they should not be closely sewed up without allowing some chance for drainage, and preventing the chance of infiltration into the larynx and the glottis: hence to sew any wound in the throat, which has penetrated deep enough to open the air-passages, is not good surgery. The parts should be approximated without stitching, and secured by a bandage. The parts will heal by second intention, and do very well. Meanwhile, we have entire security; for if the wound is not sewed, we have control of the breathing apparatus.

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[1] [illegible]

There are other cases where the passages have been opened above the vocal cords; where the cuts are very deep; and where it is wiser in the beginning to do tracheotomy, and let the patient wear a tracheatube, rather than to risk anything that is going to take place from injury inflicted on the larynx and vocal cords. After tracheotomy, it is perfectly proper to draw together the wounded parts; wire together the larynx, and try to make the wound heal by first intention; but you must be sure, as regards the chance of suffocation, before you adopt any of these measures, Either leave the wound open, or do tracheotomy as a preventive measure. A few of these patients die of shock; but very few. Almost all the suicides, after the commission of the act, come to themselves and wish to recover; and the majority of them do recover, unless the wound has gone so deep as to involve the pneumogastric, or the large vessels; or to lead to some subsequent abscess, or burrowing cellulitis of the neck. The cut of the pneumogastric is usually fatal by producing a slow form of pneumonic consolidation in the lung supplied by the wounded nerve; and the patient usually dies of this complication. Wound of the carotid artery is immediately fatal unless it can be secured at the moment. Wound of the jugular vein is not infrequently recovered from. I mean, of course, the internal jugular vein; for the external vein is a vessel not very dangerous to wound. It was the one formerly selected for venesection in children, when venesection was practised. It is easily secured and not very large.

INJURIES OF THE ABDOMEN.

Cuts and stabs and perforations of the abdominal walls are liable to be dangerous irrespective of wounding the viscera. The dangers are two. One is immediate; and the other is subsequent. Both these dangers can be classed under the name hernia. The immediate danger of hernia is that the wound gaps a little, a little bit of omentum gets forced through the wound and slowly emerges from the abdominal cavity under the peristaltic movements. You will be surprised to see through how small a puncture a large piece of omentum will be extruded on to the wall of the abdomen; and this may become strangulated and make trouble if it remains. The proper treatment is to cleanse the part thoroughly, carefully enlarge the wound, and sponge out the cavity, and restore the omentum into the abdominal cavity, and to stitch it up. Now comes the subsequent danger, which is of hernia after the wound has healed. You can hardly cut through the strong fascia of the abdominal muscles in any direction without the risk of subsequent ventral hernia in the scar. The wound heals by cicatricial tissue. Unfortunately it does not seem to possess, in this region, that great power of contraction, that it has in the burn, or that cicatricial tissue has in the perineum after an injury to the urethra. It is here a soft tissue constantly moved and stretched by the use of the abdominal muscles, and is very apt to yield and gap open after a few months, and give rise to a hernia. In this case we have but one resource. We may try, if we wish, to reduce the hernia; cut down and make a fresh incision, and see if we can get a stronger union than was there before. This is of questionable success. If we do not attempt that, the only other resource is to apply the ventral truss for a hernia, which will keep the bowel in. I allude to this, particularly, because I do not think it is strongly enough insisted on that whenever the abdominal muscles are cut through, the chances of subsequent hernia are very great indeed.

Since the introduction of antiseptic surgery the peritoneal cavity has been opened with impunity, compared with past times; and a new name has been sought from the Greek to describe the operation; the name of laparotomy; and this operation is done for a great variety of purposes. There are two or three of the more prominent reasons why it is done that I shall speak of now. One is for what is called stoppage of the bowels. Of this there are two principal forms. One is twist or volvulus, and the other the folding in of the gut into itself, sometimes called intussusception.

Now it may make but little difference in the prognosis which of these two forms of trouble exists, and either of them may call for operation. The diagnosis between the two may be important and useful as guiding to the proper treatment by operation. We may say in general terms that intussusception is much more common in the child than in the adult. The peristaltic motion is more powerful in the child; the mesentery is more free. The folding in of one portion into another is much more apt to occur in the young child than in the adult. Hence the age of the patient influences us in making the diagnosis. The subsequent symptoms produced by the stoppage also guide us a good deal to the diagnosis. In either of these events, whether intussusception or volvulus, immediate stoppage of peristaltic action occurs above the seat of obstruction; the bowels cease to move, and accumulation of gas takes place; but in the twist or volvulus this is absolute and complete from the beginning; the patient has generally no desire to have any discharge from the bowels, either of wind or other substances, and makes no effort. Everything seems to be dead and still. On the other hand, the child that has an intussusception has, for a day or two after the accident, a constant desire to move the bowels, and is constantly making straining efforts at stool. Moreover, these efforts do produce something. They produce serum and stringy mucus, and occasionally a little blood; and the child is making incessant attempts for the first day or two after the onset; and this guides somewhat to the diagnosis between twist and intussusception. I should say that the diagnosis between the two is important in this way, that the intussusception is not so hopeless as the twist. Nature sometimes, though rarely, cures the intussusception, either by retracting the bowel back into its normal place; or, as is more frequent, by causing it rapidly to adhere, causing the inner piece to slough, making union of the two ends of the intestine, and discharging the sloughing piece through the natural tract and through the anus, by the efforts of the child itself. This sometimes occurs in the course of the second week after the intussusception; though rarely. So in the treatment of these two affections our first efforts in regard to intussusception should be to restore the bowel to its normal condition; and if we had made the diagnosis of volvulus or twist we should know that the treatment we are going to use to push back an invagination, would be worse than useless in volvulus. We use large enemata of fluid or air, and invert the patient, and try to promote retro-peristalsis, to push the bowel back into its normal place. This would be worse than useless in twist. In twist or volvulus the seizure is immediate; pain intense and localized; efforts at stool are none whatever. Peristaltic motion soon ceases absolutely. The abdomen is like the abdomen of a dead person, except that it rapidly becomes distended with gas above the point of stricture. The high temperature produced by this state of things goes on from three to five days. Generally by the fourth or fifth day the symptoms undergo an apparent amelioration; although this is entirely deceptive, and does not mean that the patient is going to get well. In other words, the temperature falls; pain ceases; no passage takes place from the bowels; no wind is passed; the size of the bowels may not recede; but the temperature falls, and his pain ceases. Meanwhile the pulse flickers and grows more rapid; the capillary circulation is a little obstructed and dark, and he dies usually without suffering; and the signal of the loss of pain and dropping of temperature on the fourth or fifth day means that sloughing of the part or mortification in the abdomen has taken place, to be followed by death.

In these cases we have some hope, that if nothing else has succeeded in relieving the patient, opening the abdominal cavity and seeking for the cause of the obstruction may do so; that an invagination, if not too old, may be reduced; or if irreducible, the two ends of the intestine may be cut off and sewed together, thus imitating the process of nature, which is trying to slough off and unite the pieces: that a twist may be relieved by dividing adhesions.

If then we are thoroughly convinced that other measures are failing; that the diagnosis is reasonably clear; when the second or third day has arrived, it is good practice to open the abdominal cavity and see if we can give relief. Meanwhile, if the diagnosis is uncertain; if the time has not arrived when you think it is safe to open the abdominal cavity; a good deal can be done in the way of relief by medicine; and certain things are very comforting to the patient, and usually check the progress of inflammation. These are, in such violent cases, the free use of opium; and the application of cold, or warmth, to the abdominal wall. Usually warmth is most grateful to the patient; but if cold is grateful, and can be kept up by means of the cold water coil or ice bags, it no doubt is good treatment in checking congestion and effusions. It would be obviously improper, perhaps useless, in these cases where we are pretty clear that a twist or invagination has taken place, to give cathartics. If grave doubts exist as to the cause of the obstruction; if we feel that it may be a temporary stoppage of peristaltic action from spasm; or cessation of flow in the gall-ducts; or from impaction of fæces; then cathartics are proper remedies to use. The question then arises what cathartic? The most useful in allaying the irritability of the intestine are two in number. They act very differently. One, the well-diluted saline solutions of any kind; epsom salts; sulphate of soda, etc., which can be given in small and repeated doses, and produce a large flow of serum from the mucous membrane of the alimentary canal. The other agent is also extremely valuable, because it acts quietly and smoothly; and in the end, if the obstruction is removable, it is irresistable; and that is castor oil; not given in the ordinary way; but in minute doses at short intervals; a drachm every four to six hours, thereby the patient getting from one-half to one ounce every twenty-four hours; and this persisted in, two or three days, will certainly, in the case of ordinary obstruction, if the oil is retained well on the stomach, produce, sooner or later, thorough fæcal evacuations, and without disturbance.

Then we have that large class of cases where the trouble begins by inflammation in or about the appendix, and head of the cæcum; sometimes behind the peritoneum; sometimes within the peritoneum; sometimes beginning by perforation of the appendix; and sometimes, apparently, by cellulitis in and around the appendix, not followed by perforation. It is well-known that perforation of the appendix, with a throwing out of some hard mass into the peritoneum, is not necessarily followed by fatal peritonitis; because a localized peritonitis is immediately set up in a large number of cases. The foreign substance becomes speedily encysted; walled off from the general peritoneal cavity; and finally terminates in the formation of an abscess, which may, or may not, have a fatal result, if left alone. If the adhesions are strong enough, it may seek an opening through the abdominal walls, or lumbar region; or again, as is more frequent, it not seldom finds its way down into the pelvis, and forms a pelvic abscess, and finds an exit, in safety in some cases, in the rectum or vagina; so that perforation through a small opening, letting out a small quantity of fluid matter, is speedily followed by walling in of the offending portion by rapid adhesions. You, perhaps, in seeing some of the results of operations on the appendix, may have seen how rapidly adhesions take place between the coils of intestine, when there is an opportunity to do so.

The question in these cases is very doubtful whether immediate laparotomy should be done, or whether we should wait. Very many patients recover without operation. It is true that they are left afterwards with the chance of another attack of the disease; but it is also true that an operation, which is done, leaves them necessarily with adhesions; with subsequent impairment of the mobility of the parts; chances of subsequent inflammation, as the old adhesions of the original perforation do; so that, although we may save life by operating, we cannot say yet, that we can cure the place we seek to cure. We remove it; but leave the adhesions of surgery in the place of the adhesions of disease.

The diagnosis is made much easier in these cases if any tumor can be felt. By that we mean anything different in sensation to the touch, or percussion, from the rest of the abdomen; any thickening, or hardening, or obscure feel; above all any œdema of the parts, when the disease has gone so far, may make us feel quite positive, if it is on the right side, that we have to do with an inflammation about the cæcum, or appendix. Sometimes, however, the appendix perforates; abscess forms back in the pelvis under the edge of the ilium; nothing can be felt outside; and the little tumor is there, but so deep and overlaid with a mass of intestines filled with air, that it is impossible to appreciate it by the touch. It is in these cases that a careful examination by the rectum may give invaluable information. The finger should be inserted as far as possible into the rectum; you make the patient strain down, and you gain a little; in a certain percentage of cases, where no tumor can be felt outside, it can be detected through the rectum, pressing down in the pelvis in the right iliac fossa; and once detected there, of course it confirms the suspected diagnosis of an abscess about the appendix, which we could not feel from the front. I think this precaution never should be neglected in examining any case of this supposed disease. Even if we feel a tumor outside, I should be disposed to make a thorough examination by the rectum; because we may find, to our surprise, that it has already gone so far that it begins to point, so to speak, in the rectum; and a dimple, with fluctuation, is not infrequently felt high up in the indurated mass in the rectal wall; and tapping may be done there, and the necessity for laparotomy avoided.

I would not have anything I say discourage in the slightest degree the importance and benefit to be derived from opening the abdomen to seek for the products of inflammation in and about the appendix; only, in feeble and tubercular subjects, you will have recurrent attacks about the region of the appendix, which in many cases will get well for the time being, without the use of the knife, by gentle measures; as fomentations and rest, and the free use of opium; and the patient go about, for a long while, without another attack.

COLOTOMY.

Colotomy is opening the colon to make an artificial anus; it is done for obstructive disease of the rectum. That obstructive disease is generally cancer. The rectum, as a rule, is not obstructed by cancer near the anus; it is obstructed higher up. The reason is this: if cancer, or any obstructive tumor forms in the rectum, as high as you can feel with the finger, you find that the bowel is invaginated; conveying to the tactile sense very much the same impression that you feel when you examine the female and insert the finger at the orifice of the os uteri; around this is spread the hardened mass of cancer; that is, the bowel is pocketed through the stricture. You find nothing of this kind in the forms of obstruction which exist within an inch, or inch and half, of the anus. There it is simply infiltration of the rectal wall; a mass of rough and ragged disease, through which you pass the finger into the cavity of the bowel above. Cancer in that region rarely becomes the cause of positive obstruction; whereas higher up, the bowel is being forced down into the obstruction, where it is free to move about; and obstruction takes place by a species of chronic invagination. In these cases it is a fair question whether they will prefer to be relieved by the formation of an artificial anus; if so, the place should be as near the natural outlet as you can get, to save the action of the alimentary canal, for the purposes of complete digestion. It has been found, that when the intestine was tapped very high up, it interfered with the nutrition of the patient. A wound going through the first portion of the large intestine is disastrous to complete nutrition. The nearer to the outlet the better the chance of perfect fæcal evacuations and good digestion.

You have two places, either in the loin and left side, or in the groin and left side. The advantage of the lumbar region is that you avoid the peritoneum. The advantage of the groin is, that, although you go through the peritoneum, you can get at the bowel more readily, and perhaps may make it more easy to wear a truss.

The operation in the groin is the easier; the operation in the lumbar region is the harder. In either case, if you want to be perfectly safe in doing the operation, there is a little manœuvre which may be practised. Suppose it is done in the groin; you cut down and find the sigmoid flexure; pass long, curved needles in several directions and sew the bowel up thoroughly to the abdominal walls; leave it forty-eight hours; take off the dressings, and you find the wound still open; the intestine changed in appearance. This thin glistening bowel is converted into granulations. You can slit it completely open without the possibility of extravasation. On the other hand, if you feel it is safe to do so, you may do the stitching up and securing, and make the incision at the moment of the operation; and this is done in many cases. It is said, that by the contraction of the wound, afterwards, the patient gets control over the solid evacuations. That, aided by a truss, may make the patient comfortable and prolong life. It is not a very dangerous operation.

ONYCHIA.

Onychia is a form of disease about the nails. In its simple form it is called run round, or superficial whitlow; it occurs as a slight suppuration about the root of the nail, followed by the raising up of the epidermis; a yellow deposit of pus and abscess, which runs down along the side of the nail.

The remedy is free incision; washing out; and it gets well.

MALIGNANT ONYCHIA.

There is a form called malignant onychia, which is probably neglected simple onychia in the large majority of cases. We seldom see it in people well nourished. You find examples of it in poor, half-starved children, brought to the dispensaries and out-patient departments. These onychiæ refuse to heal. The nail is extracted; and the part treated as a fungus sore, and it may still refuse to heal, and may end in amputation.

CHANCRES ABOUT THE NAIL.

There is a class of ulcers about the nail which are syphilitic, and unfortunately they are most apt to assail members of our own profession. The number of doctors who get poisoned by a slight agnail, and chancre at the root of the nail, is large. Unfortunately, unless the physician is on his guard, he neglects it and thinks it is a simple whitlow; wonders that it does not heal. He poultices it. It is purely a specimen of hard chancre.

It refuses to heal under any treatment. Soon after that a gland is felt at the elbow and up the arm; and later syphilitic roseola appears on the body and the diagnosis is clear. I mention this, because I have seen quite a number, and heard of a great many more such cases, of a suspicious sore about the nail, in practising physicians. If it were my own case I should promptly take mercury, after such a sore appeared upon me. That speedily settles the diagnosis. The moment the patient is slightly mercurialized, the sore softens and begins to heal.

DEEP FELON OR WHITLOW.

A deep felon or whitlow is a suppuration down under the theca and the periosteum, and usually coming on the last phalanx. It is intensely painful; does not swell much; but makes the pulp of the finger hard, and different in feeling from the tip of the other fingers. The pain is intolerable and persistent; destruction of the parts goes on with great rapidity, unless relieved. Unless it is relieved the pus burrows up under the theca of the tendons and affects other joints of the finger; finally gets to the palm and forms palmar abscess; extends without difficulty under the annular ligament, runs up under the superficial fascia of the forearm, and finally ends the process of suppuration at the elbow-joint. We see such cases where the arm and hand are subsequently crippled by the adhesions that have taken place.

The only treatment is early and thorough and deep incision; and it is a mistake to wait for it to ripen; the ripening is its destructive process. It never should be allowed to ripen; and a deep incision, made at once, will frequently abort the suppurative process, and lead to healing with granulation, in a very few days.

As a rule, pus is always to be sought for on the palmar side. On the dorsal side it is generally only a secondary consequence. On the palmar surface the pus is to be found. A good deal is said of the propriety of opening on the side of the finger. The danger on the side is damage to the nerve and vessels. The danger of damage to the nerve is somewhat serious.

When there is palmar abscess the patient is very sick indeed. The forearm is swollen and œdematous; constitutional symptoms are severe; chills; high fever and exhausting sweats. In these cases it sometimes becomes a question whether to seek for pus in the forearm. We suspect it is there. The symptoms are not relieved. The œdematous condition goes up the arm. The patient does not experience any relief from his pain. The safest place to reach it is in the centre of the wrist, above the annular ligament. Cut down until you reach the superficial fascia and come to the long flexor and palmaris tendons. Now take the dressing forceps and director and pick away between the tendons, until you come to the space upon the interosseus fascia; and there, you almost invariably, get a gush of pus. This is to be kept open and irrigated every day. Occasionally it becomes necessary to make additional openings higher up. This is good surgery. It saves the limb and life; but does not cure the member. The hand is not restored. Patients must expect, subsequently, some adhesion and stiffness of the tendons. If such adhesion and stiffness result, it occurs from the long continuance of the inflammation; from the fact that gluing together of the tendons has occurred, and contraction of the parts with a comparatively useless hand, in many cases; in no sense is this to be ascribed to anything the surgeon does; but wholly to the progress of the disease, before the surgeon was called in. You will find, often, the physician or surgeon blamed for consequences about the usefulness of the hand and arm, where really he saved what could be saved; but could not cure the part.

BUNION.

Bunion is usually upon the great-toe joint and is an enlarged bursa. Usually it is there for the purpose of protecting from friction against the side of the boot. When irritated and inflamed by pressure; when the joint is thrown out of its normal position by shoes which are too short; the end of the toe begins to be thrown in; the joint projects, and it becomes inflamed and tender. A sac is evident upon the surface of the bone; fluctuation can be felt. This sac is an inflamed bursa. Occasionally, by careful treatment, it may be made to subside without suppuration. This treatment should consist in the taking off of pressure; either by cutting the shoe; or by wearing a very large or thick corn plaster, which encircles the joint and allows it to ride free beneath the plaster. Applications may be used at night to allay the inflammation in the part itself. Sometimes a poultice is very useful. You must not be carried away with the idea that we always apply a poultice to produce suppuration. It sometimes prevents suppuration; softens the skin; allays the heat; sweats and foments the part; and frequently produces absorption instead of suppuration. When suppuration exists and is unavoidable, it bursts and discharges through a minute opening. Then it is a long while in healing, because you have a little thickened sac or cyst, which continues to secrete, and it is most speedily cured by laying it open. You must investigate the sac and see whether it goes into the joint. If it does, it must be laid open freely and irrigated; and the part put on a splint. If it does not, the sac may be laid open, scraped out and forced to heal, just as any bursa would. The most important point in treating the early stages of bunion is to get the great toe on a line with the inner border of the foot as it was intended to be by nature; and as you see it in all the old statues. The old sandal prevented the possibility of bunions; dragging the great toe out by a strap between the great toe and second toe. It is a good practice to put between the great toe and next toe a thick piece of paino felting, which can be inserted to keep the toe out, while the patient walks. The shoe must be made on a straight last; and with these means, a great many persons can get along, and prevent the formation of bunions.

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Original Articles.

ANTHRAX FACIEI: REPORT OF A CASE.[1]

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The occurrence of such cases is sufficiently rare to justify the publishing of notes connected with this dread malady; and a brief *résumé* of the history of anthrax as it occurs in animals and in man will form a fitting introduction to this paper. Anthrax, charbon, milzbrand or carbunculus contagiosus, as a disease in animals, is perhaps the [illegible] by man dates back to the earliest period. This is the disease referred to in Exodus, ninth chapter, third verse: "Behold, the hand of the Lord is upon thy cattle which is in the field, upon the horses, upon the asses, upon the camels, upon the oxen, and upon the sheep: there shall be a very grievous murrain." And in the sixth verse: "And all the cattle of Egypt died."

Among the Greek and Roman veterinarians it was known as Οἴδημα. The name of "anthrax" was used by the Greek, and "carbunculus" by the Roman physicians. The Arabians described anthrax in man with even greater accuracy as *Atshac, al Humrah*, or Persian fire.

From the fourteenth to the eighteenth century the disease of anthrax was covered up under different names given to various diseases; and only toward the end of the last century was it shown that these manifold diseases were, in reality, only different forms of the same disease.

Chabert, in his monograph,[2] brought order out of chaos, and grouped what had been hitherto considered many and various diseases as one malady with varying manifestations; and his classification has been adhered to, not only in France, but in all countries even to this day.

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[1] Read before the [illegible], May [illegible]

[2] [illegible]

No infectious disease in man or animals (with the exception of tuberculosis) has been more generally recognized, and cases of the same reported, as has been the case with anthrax. Heusinger,[3] in his work on Milzbrandkrankheit, has found the evidences of its presence in almost if not all countries, whether in the most northern or most southern latitudes, in the Old World and in the New. It seems, at first thought, strange perhaps that, although the contagiousness of anthrax has been abundantly proved by numerous observations in the eighteenth century, authors in the beginning of this century should have denied that there was any contagion in anthrax; as, for instance, Delafond, who, in his particular study of anthrax in sheep (*maladie de sang*), considered the rennet, stomach and intestines the special seat of the disease, and ascribed as its chief causes overfeeding and the condition of the soil.

Among animals anthrax is found most frequently where agriculture is in its most primitive condition; and while it may occur in all soils, yet those most favorable to its growth and propagation are soils which are close, impervious, clayey or peaty, and such as are habitually over-manured. Anthrax occurs most often among herbivora; least often among carnivora; omnivora being less susceptible than herbivora, and more so than carnivora.

It would exhaust your patience and time to go further into these details, for which the reader is indebted to the articles by Bollinger, in "Ziemssen's Cyclopædia," Vol. III; James Law, F.R.V.C.S., in "Pepper's System of Medicine," Vol. I; and E. M. Moore, M.D., in "Ashhurst's International Surgery," Vol. II.

As to the etiology of anthrax, Pollender,[4] in 1849, found in the "blood of animals suffering from anthrax a countless mass of fine rod-like bodies, which in appearance and figure resembled vibriones, and in their micro-chemical behavior were seemingly of a vegetable nature." Brauell[5] (in 1857), independently of Pollender,[6] "found the same little bodies in the blood of men, horses and sheep which had died of anthrax." Davaine,[7] however, was the first who associated the presence of these bodies (which, after experiments, he pronounced in 1863, to be bacteria and later bacteridia) as standing in the relation of cause and effect in producing anthrax. Later investigations have substantiated his theory, and to-day the bacilli anthracis and their spores are the recognized cause of anthrax.

The bacilli anthracis in the blood are found to be in the form of fine rods, straight, only occasionally bent or angular, from 0.007 to 0.012 mm. in length, devoid of motion (a valuable aid in their differentiation from the motile bacteria of putrefaction); smaller forms, minute ovoid or oblong bodies are found. The smallest (micrococci) under the highest powers of the microscope are seen, but always with clear-cut, even margins, thus distinguishing them from the normal irregular granules of the blood. Spores are never found in the blood of the living animal; but when the bacilli are grown in organic infusions outside the body, the anthrax germ develops from bacillus or micrococcus into a long, branching filamentous product, which, if oxygen be present, develops into spores. The anthrax germs are very tenacious of life, and the spores to a much greater degree. "Meat cooked for hours, or broth boiled similarly, when taken from anthrax-infected animals, has caused symptoms of anthrax in persons partaking of such food."[8]

In man, Fournier[9] was the first who was able, in 1769, to trace the cause of anthrax to the consumption of anthrax-diseased meat, and to the handling of the wool of such animals.

With the course, symptoms and other interesting topics naturally suggested by internal anthrax, nothing can be presented in this brief article. It is with the external form, which has usually been relegated therefore to the domain of surgery, of anthrax carbunculus, to which attention is specially directed.

Theoretically, man might be infected, as are herbivora, from the soil; but practically such is not the case. The principal ways of infection are immediate and mediate. Of the former may be cited cases caused by handling hides, wool, hair, flesh and other parts of diseased animals. But as to the mediate causes, we have to deal with a more extended number of possible sources of infection. Bites of insects, mosquitoes, blue-bottle flies, and others of a like nature (blood-suckers), which have been previously in contact with anthrax-diseased carcasses are among the well-known causes. Well-attested cases are reported where men or animals, themselves not infected, have been the carriers of the anthrax germs to others. Other ways of catching the infection are by handling harnesses, stable utensils, hay, fodder, the surgeon's knife, etc.; drinking contaminated water; and, in animals, the feeding on meadows containing the buried remains of anthrax-diseased animals.

It is very interesting to note in this place that the site of the primary seat of infection (the anthrax node) is constantly on the exposed parts of the body. Bourgeois[10] long since called attention to the fact that this was most frequently the face, neck, hands or arms and almost never on the trunk. Dr. A. W. Bell,[11] of Brooklyn, in 60 cases reported by him, found that 56 were on the face, two on the hands, one on the wrist, and one on the forearm; and that often the disease had started from the bite of a fly or a mosquito in many of these cases. Bollinger[12] has found in the stomach of such flies as feed on the flesh and blood (horse-flies, blue-bottles, etc.,) the bacillus anthracis, thus completely showing that bites from such insects may cause anthrax.

As to the symptoms, these usually appear within twenty-four hours after inoculation. The patient complains of a stinging sensation in some spot to which previously his attention has been called by an itching. When examined, a small red spot, like a mosquito bite, is seen, but with a small, central, black spot. The further description, taken from the standard authorities, of the *natural* progress of the local manifestation was [illegible] watched in the case of the patient, whose history will soon be given. "This speedily increases to a small round swelling (papule), which in fifteen hours is surmounted by a minute vesicle with dark-red or bluish contents. This increases from the size of a millet-seed to that of a pea, and in thirty hours bursts spontaneously or under friction, forming a dark-red, indurated, comparatively painless nodule (parent nucleus of Virchow). The areola is swollen, livid and red, and on this appear vesicles similar to the first; these pass through a similar stage, leaving a doughy, gangrenous or hard, livid surface. By this time the surrounding skin is shiny red and livid, and the disease spreads by the same method of extension."

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[3] Die Milzbrandkrankheiten der Thiere und des Menschen, Erlangen, [illegible]

[4] Ziemssen, vol. iii, p. [illegible]

[5] [illegible] Versuch und Untersuch, betr. den Milzbrand des [illegible]

[6] Virchow's Archiv, Bd. xi, p, 132, 1857.

[7] Compt. Rend., t. lx, p. 1296, 1865.

[8] Pepper's System of Medicine, vol. i, p. 929.

[9] Fournier: Obs. et Expe. sur les charbons malins, Dijon, 1757-1769.

[10] Bourgeois: Traite practique d. l. pustule malign, etc., Paris, 1861.

[11] Pepper's System of Medicine, vol. i, p. 926.

[12] Op. cit.

Constitutional symptoms vary: fever at first is slight, but may reach a high point, attended with occasional chilliness, pains in back and loins, languor, great prostration; in fact, such symptoms as are met with in cases of general blood-infection.

The disease lasts from six to ten days.

As to the diagnosis, it must be remembered that the anthrax nodule begins with a small red papule having a dark central point, from which the disease extends as above described. The simple furuncle lacks this black centre and the rapidly rising elevated red areola. Simple carbuncle tends to appear on covered parts of the body, anthrax on uncovered places. In carbuncle, simple, several boils rise and burst simultaneously, and break into one sore; whereas, anthrax extends by separate, isolated nodules like the "parent nucleus." The finding of the anthrax bacillus by microscopical examination would be conclusive if resorted to.

The disease anthrax is very rare: Bilroth says, "Even simple, benignant carbuncles are so rare that in the extensive surgical policlinic in Berlin, where every year 5,000 or 6,000 patients presented themselves, I only saw a carbuncle once in two years or so. In Zurich, also, they were rare." Bryant, in his "Practice of Surgery" (p. 408), says, "Malignant pustule, or charbon, is a disease with which I have no personal experience."

As to prognosis, much if not all depends on the early recognition of the true nature of the malady. In anthrax districts, where the physicians are familiar with its appearance, astonishingly good results have been attained. Nicolai[18] reports a mortality of five per cent, Lengyel and Koranyi nine per cent. (There is no statement made as to the site of the nodule in these reports.) But the prognosis in other districts where anthrax is not so general is worse, the mortality reaching forty to fifty per cent. In considering this part (prognosis), it must be borne in mind that anthrax of the face, especially of the upper lip, is almost always fatal.

As to treatment, the most approved method consists in the excision of the parent nucleus, or cross incisions with the subsequent use of the most powerful germicidal agents, cauterization or local germicidal lotions, injections and applications. The constitutional treatment must also simultaneously be carried out by stimulants, and carbolic acid internally to the extent of fifteen drops daily.

Case. The patient who forms the basis of this paper was a young man of stocky frame, American born, and nearly twenty-five years of age. He was a teacher, and absent from his school at that time, November, 1886, on a vacation. On the night of November 19th, when going to bed, he noticed a pimple on his upper lip on the left side, just below the ala nasi and at the upper part of his mustache. This pimple he pricked with a needle, and applied cuticura soap to the spot.

November 20th, he was [illegible] at a football game on Jarvis Field, during which game he sat on the ground, but with [illegible]. After returning to his temporary home the spot began to grow painful, and the lip to [illegible]. Sleep was somewhat disturbed, and he presented himself for advice on the following morning. At that time the upper lip throughout its entirety was much swollen; the mucous membrane tense and shiny; the local papule was hard, with a black central spot, tender to the touch and surrounded by a raised, livid areola. Only a minute drop of pus followed the introduction of a grooved needle. The patient was sent to his room, and seen later at 11.30 a. m. At this time free crucial incisions were made through the base of the nodule, and corrosive sublimate solution (1 to 1000) freely injected with a hard-rubber syringe. Thorough washing of the parts with bichloride solution (1 to 1000), was ordered at each application of hot flaxseed-meal poultices.

The wound on the next morning was found tending toward union, and had to be reopened. His sleep had been bad; he was nervous, and had slight chills. The night visit showed the wound more inclined to gape; the central part, which had been kept from closing by the insertion of a plug of cotton saturated in corrosive sublimate solution, was necrosed, and a very small amount of thick, inspissated pus was extracted by means of forceps. There was no fever as yet, and the pulse was only 84; opium was required in order to obtain rest.

On November 24th, the symptoms were more grave; and our esteemed fellow-member, Dr. J. T. G. Nichols, saw the case in consultation at 11 a. m. The swelling had, through its extension by the subcutaneous cellular tissue, formed a second nodule just above the ala nasi, with the swelling and enduration extending upwards toward the left eye. As there were evidences of nervous and general weakness, brandy (two drachms every two hours) was ordered. The swelling extended further at night, and the whole side of the face was markedly red and shiny. For the first time the temperature was elevated to 100.1°, with the pulse at 90.

On the morning of November 25th, the fourth day after seeking advice, all the symptoms were so greatly aggravated that Dr. R. M. Hodges kindly consented to give his services and advice in the case. The pulse in the morning early was 90, the temperature 99.4°. Dr. Hodges saw the patient at 11.15 a. m., and considered the case very grave, with the probability of a fatal termination. The pulse at that hour was decidedly irregular and weak, and it was plain to Dr. Hodges that the patient was less strong than he seemed. Radical operation was however advised, and agreed to by the patient and his friends.

Under ether, Dr. Hodges performed the operation, which may be designated as the subcutaneous one, of cutting up thoroughly all the diseased tissue (then occupying nearly the whole of the left cheek) by inserting his knife into the original wound between the outer skin and the mucous membrane and carrying the blade by generous sweeps throughout the whole territory. The hæmorrhage, which was considerable, was stopped, and disinfection accomplished by plugging the entrance wound with cotton saturated with corrosive-sublimate solution.

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[18] [illegible] Pepper's System of Medicine, [illegible]

The patient rallied well, and in the afternoon seemed fully as comfortable as before the operation. The cotton plug was removed, the wound syringed with corrosive-sublimate solution, and plugs of necrosed tissue removed by forceps. There had been some sweating. His pulse varied from 88 to 90, and was rather weak; temperature 100.2°. When a night visit was made on this same day, little change was noticed, except that the left eye (which the swelling had succeeded in closing in the early morning) was even more tightly closed.

On the following day the patient was no worse; in fact, there was scarcely any change. Plugs of necrosed tissue were removed, and the same treatment carried out.

The symptoms were improved on the following day. The patient had slept without opium, and the necrosed tissue came away more freely. It was a disappointment to learn at the visit in the afternoon (3 o'clock) that a third focus had started on the left cheek on a level with the angle of the mouth. This was hard and tender. The breath was offensive, but the general condition was good. This spot extended in its progress along the lower border of the inferior maxilla, involving the lower lip as far forward as the median line. The area which at this time was involved measured two and one-half by three inches, practically the whole of the left side of the face.

No further cutting was done, but by forcing lines of communication from one focus to another, by means of a director and probe, it was possible to reach the whole diseased area by injection with the syringe; and later the necrosed tissue was pressed out from the lower angle of the jaw through the opening first noticed.

His recovery was gradual. He was able to sit up for a while on November 30th, after which date convalescence was rapid, so that he was discharged well, December 3d. Almost no scar remained, and none which is not now covered by his mustache.

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PUERPERAL ECLAMPSIA.[1]

BY T. F. CUNNINGHAM, M.D.

It must be conceded, I think, that this is one of the most dangerous and alarming conditions to be met with in the practice of obstetrics. It destroys more lives than any other puerperal affection, in proportion to frequency. Statistics are not very reliable on this subject; but taking a moderate estimate, it probably occurs once in four or five hundred deliveries, with a mortality of about thirty per cent. for the mothers and fifty per cent. for the children, although some authors place it much higher.

In an experience of two thousand obstetric cases, eclampsia was encountered three times, twice at the commencement and once before labor, and all were primipara who were suffering from albuminuria. One of the patients was very dropsical; and owing to the difficulty of re-establishing the function of her kidneys, complications rapidly followed, which caused her death. The other two slowly but perfectly recovered; one has been delivered since of twins and enjoys good health, whereas the other, who was delivered last December, and apparently made a good recovery, is suffering from chronic parenchymatous nephritis, which, judging from a recent examination of the urine, is in the inactive stage. Two of the children were born dead, the other dying on the third day. This is not a very brilliant showing; and yet it would seem that, in the light of modern science and with the wisdom of the ages to guide us, one ought to be able to cope more successfully with this terrible malady.

Our literature is replete with theories relating to the mysteries which surround its etiology and therapy; but considering that the questions are still *sub judice*, we take up each new journal wondering what the next speculator will have to say. From the repletion and depletion theory of Hippocrates to the bacteriological theory of Gerdes is quite a lapse of time; but it requires very little knowledge to enable one to appreciate the clinical value of the ancient as compared with this modern view of the subject. From a study of the works of different authors and a limited bedside experience, it would seem that we are in possession of all the theories for the explanation of the obstetric phenomena. The difficulty all along appears to have come from trying to make one or two factors do what it takes several to accomplish. We have been taught so long to consider eclampsia as closely allied to albuminuria, that disturbance of functions, other than those of the kidneys, has received but indifferent attention until within a comparatively short time. It is not to be inferred that this is not an important factor, but that the renal affection alone rarely is sufficient to produce convulsions. It is only a part of a whole, a collective cause, the other parts consisting of pregnancy — usually the first — a watery condition of the blood, and high nervous tension. It is a matter of common observation that women looking forward to first motherhood suffer more from excitability of the nervous system and from emotional disturbances than they do in subsequent ones; and when it is realized that this state of things is kept up, perhaps for weeks, exhausting the nervous system and lessening the power of resistance, it is easy to conceive how favorable the conditions are for an explosion, particularly after the noxious elements begin to accumulate, through faulty elimination, whether it be due to pressure on the ureters, renal insufficiency pure and simple, hyperæmia, or acute or chronic nephritis.

The treatment of eclampsia is as varied as its etiology. For the sake of brevity the various means may be enumerated as follows: (1) chloral or chloroform, (2) morphine, (3) venesection or veratum viride, (4) induction of labor. Of course, other medication is called for, such as cathartics, diuretics, diaphoretics, cold to the head, sinapisms to the extremities, and proper conditions of temperature and ventilation, according to the special indications of the case. As the trouble may appear before, during, or after labor, an opportunity is offered for the exercise of good judgment in the selection of the right method or methods of treatment.

Owing to a lack of experience, the third class or post-partum form will not be discussed.

In the second class of cases, which is by far the most numerous, the consensus of opinion seems to be in favor of hastening delivery. I adopted this teaching in two cases of this class, but do not think I would be so rash again, since nature will do the work much better than we can, if we only sustain her. It is taught that the os under these conditions is soft and dilatable; but it is not always so, and the time consumed in manual dilatation may be an opportunity lost. To allay nervous excitement and control spasms is of first importance; then the other conditions can be studied more leisurely, and the suitable means adopted to combat them.

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[1] Read before the Cambridge Society for Medical Improvement, May 22, 1893.

The first patient was a plethoric young woman; and I think she might have been saved had bleeding been resorted to, since by this means the blood-tension of the cerebral vessels would have been diminished and prevented the extravasation that killed her. Routine treatment is as objectionable here as in any other department of medicine.

The second case was in an anæmic woman, with conditions just the opposite in every particular to the first; and if I had given her chloral, and waited for a natural delivery, she probably would have done better and given birth to a living child. As it was, her recovery was protracted, and much of the delay was due to unnecessary manipulation.

In the first class of cases, or ante-partum eclampsia, there are no pains, and labor may not be due for some time; and it is still a vexed question what are the best measures to adopt under these circumstances. The induction of labor is recommended by some who consider you are guilty of double murder if under these circumstances you question the procedure; whereas others, more conservative, recommend it only after all other means have failed. Lusk says, "The practice of waiting for nature proved uniformly disastrous, whilst the induction of labor furnished a certain proportion of recoveries."

Nevertheless, I took exception to this well-known teacher, and treated the third case on the expectant plan. There was an interval of a week between the first convulsion and the delivery; during the first twelve hours there were five convulsions, and the patient complained of severe headache, blurring of sight and nausea; the secretion of urine was diminished, with a specific gravity of 1,008, and contained one-half per cent. of albumen. The bowels had been constipated just before the first attack. The usual remedies for restoring the functions of the stomach, bowels and kidneys were administered; but as they did not operate by the time the fifth convulsion supervened, sixty grains of chloral were given, per rectum, with orders for half that amount to be given every four hours. During the next twenty-four hours the bowels were moved and the stomach settled; nourishment was taken, and, although she complained of headache, she was not nearly so nervous. The urine, collected after the convulsions, was chocolate-colored, had a specific gravity of 1,040, and solidified on boiling. The sediment, examined microscopically, showed renal epithelial cells, blood globules, and hyaline and granular casts. Five days from the time of the first seizure she had three more convulsions, which were controlled by large doses of chloral. In two days labor set in; as, at the end of the first stage, inertia threatened, Dr. Joseph Cunningham was called in assistance, an anæsthetic given, and the delivery of a living baby effected with forceps. The uterus contracted well, pulse 108, temperature 100°. The patient passed into a comatose state, and remained in it for four days. With the return of consciousness, it was found she was blind, and recognized her friends only by the voice. Sight returned in two weeks, and afterwards the convalescence was uninterrupted. The infant died on the third day.

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Clinical Department.

A CASE OF FOREIGN BODY IMPACTED IN THE LARYNX.[1]

BY F. E. HOPKINS, M.D., NEW YORK,
Assistant Surgeon to the Manhattan Eye and Ear Hospital, Throat Department, Assistant Surgeon to the New York Eye and Ear Infirmary,

On the evening of October 10, 1892, J. R., an American, aged twenty-seven years, of slight physique and nervous temperament, sat at dinner, and while hurriedly swallowing his soup and at the same time eagerly discussing with his wife the best situation for viewing the Columbian fireworks, he drew into his larynx a piece of bone, which unhappily had been served him in his soup. The soup was made from a large beef bone, and contained chips of its cancellous structure.

There followed the usual spasm of the larynx, with the sense of impending suffocation. When he had recovered his breath a little, he attempted to dislodge the foreign body by swallowing water and then a bolus of soft bread. Failing to get relief, he called upon a physician, who, hearing the patient's story and seeing nothing in his pharynx, passed a bristle probang several times into his œsophagus. The doctor did not secure the offending piece of bone, but said it must have been driven downward into the patient's stomach. He attributed the continued pain in the larynx to the traumatism caused by the presence of the foreign body being dislodged.

The patient, although still hoarse and suffering local pain, continued to attend to his business — that of book-keeping. He, however, daily grew worse, and became so hoarse that it was difficult for those associated with him to understand him. There was increased cough and shortness of breath on exertion, and the effort to speak became more painful. When he came to me on the evening of October 15th, he complained of pain especially at the right side of the larynx, of hoarseness and of shortness of breath. He told me his story, saying that the bone had been removed, but so much pain and hoarseness remained that he feared he might be developing consumption or something equally serious. Upon examination with the laryngoscope the whole larynx was found to be congested. The left ventricular band was inflamed and swollen, concealing the vocal cord of that side. The right ventricular band was somewhat thickened, but less inflamed than the left. An ivory white body was seen upon the anterior half of the right vocal cord, extending during inspiration somewhat beyond the median line. The posterior half of the right vocal cord remained visible. The left ventricular band presented areas of superficial ulceration, since, with every movement of the larynx, it had been abraded by friction against the rough surface of the bone. In fact, because of this irritation, there was more apparent disturbance upon the left side of the larynx than upon the right, although the foreign body was impacted upon the right side. In spite of the evidences of irritation just mentioned, I was struck by the small amount of inflammatory reaction which had been caused by the bone, as it had been imbedded in the larynx a little more than five days. It is indeed surprising that so large and rough a body could remain so long in the larynx and provoke so little inflammation.

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[1] Read at a meeting of the Laryngological Section of the New York Academy of Medicine, [illegible].

This remarkable tolerance of the larynx for foreign bodies is well illustrated by the case reported by Lennox Browne, before the British Laryngological and Rhinological Association on November 28, 1890. A plate of teeth had passed into the larynx during an epileptic fit in sleep and had remained in that position, unknown to the patient and unrecognized by any medical attendant, for twenty-two months. In the discussion which followed, Mr. Kendal Franks referred to a case of the impaction in the larynx, of a triangular piece of chicken-bone measuring on each side over one and one-quarter inches. It had remained in position twenty-three days; and the doctor says: "It is somewhat extraordinary that this piece of bone should have been in that position so long without being got rid of and without setting up more marked irritation." Sir Morell Mackenzie also in this discussion speaks of a case in which a piece of bone was impacted in the larynx for many months. He removed it, and the patient made a good recovery.

Ravenel, in the *Medical News* of March 21, 1891, reports — though on evidence which does not seem conclusive — a case of a pin retained in the larynx for thirty-eight years.

In view of such reported cases we might for a moment be led to think the condition under consideration, one of less gravity than we have been in the habit of regarding it, did we not know that in such a larynx dangerous œdema might be expected upon any added irritation, and had we not the evidence of the damage wrought by the presence of these foreign bodies, as in the case reported by the Chairman of the Section on October 22, 1889 — the case coming under his observation some time after the damage had been done. A tooth-plate measuring three inches in length and containing one tooth, fell into the laryngo-pharynx during a puerperal convulsion. It remained in this position sixteen days, and although it caused much local damage, including the destructive ulceration of the posterior third of both vocal cords, its presence was not discovered until the plate had been loosened by the ulcerative process.

We also have the statement of Mackenzie who, in his work on "Nose and Throat," says: "Sharp angular bodies of any size may cause very acute and constant pain when they become impacted so as to press against contiguous soft parts, and, of course, quickly give rise to a high degree of inflammatory reaction." He also says that "when a foreign body is impacted in one of the ventricles of the larynx it cannot generally be moved, and if it passes into both ventricles it will most likely require to be broken or crushed before it can be extracted." He refers to a case of a button-mould fixed in the left ventricle of the larynx, and extracted after six weeks by a laryngotomy. He reports a case of a man, "who while taking soup made from a sheep's head, suddenly felt choked by something going the wrong way. Examination showed a piece of bone lodged horizontally in the anterior portion of the larynx, just above the level of the vocal cords in such a manner that it completely blocked the anterior third. It could not be removed and symptoms being urgent a tracheotomy was done. The bone was then broken up and removed. It was found that it had been impacted in both ventricles. On putting the various pieces together, they made a lamina of bone three-quarters of an inch long and one-half inch wide. The long diameter had been across the larynx and about three-eighths of an inch in the right ventricle and rather less than one-quarter of an inch in the left ventricle."

Returning to the case in hand: after cocainizing the pharynx and larynx, I attempted the removal of the bone by the use of a probe bent into the form of a hook. The intruding bone stood out into the larynx with such enticing clearness, apparently just resting upon the vocal cord, that I thought it might be loosened by the probe, and the patient would then be able to cough it up. The probe grated over the projecting edge, making as little impression as it would drawn over the edge of a bowlder. I then used Mackenzie's forceps. The shape of the bone was such and it was so situated that it could not readily be grasped either by forceps closing antero-posteriorly or those closing laterally. Repeated attempts were required before it was possible to seize the bone at all, as the slightest irritation was followed by spasm of the larynx. Even when the foreign body had been caught by the forceps, it was so powerfully gripped by the contraction of the larynx, and the ragged edges of the bone gave the surrounding tissues so strong a hold upon it, that I feared to use too much force lest serious laceration should result. I did at one time lift with force sufficient to raise a weight of five pounds, without doing more than slightly to loosen the bone from its bed — so firmly was it impacted and so tightly grasped by the muscular spasm. Having loosened it, I directed the patient to take a slow, deep inspiration and then cough violently. As he did this, I had the satisfaction of hearing the bone strike the cuspidor.

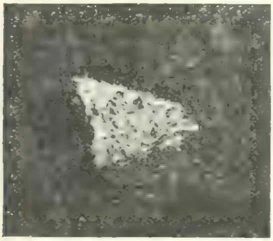
An examination of the bone reveals in part the difficulty of its removal. It is of a pointed wedge shape, having a base one-quarter of an inch in thickness and one-half an inch in width and an extreme length of eleven-sixteenths of an inch. The dimensions are all a trifle greater than those given, as the sharp spiculæ extend beyond the general surface. When this body fell into the larynx, the sharp point entered the right ventricle, and was then driven deeply into the tissues by the spasm of the larynx provoked by its presence. I have tried to indicate by an ink line upon what was the upper surface of the bone, the extent to which it was covered by the right ventricular band. The portion from the line toward the base was visible upon examination. The outer side of the line is about one-half an inch from the point, and this is the extent to which it was driven into the ventricle. The right ventricular band, as already remarked, was but little swollen.

Some reaction followed as a result of the attempts at removal, and the patient slept none that night. This wakefulness was due principally to his mental condition, as he had become quite nervous about himself, and said he feared his throat would close if he went to sleep.

Two days later, on October 17th, the right cord was visible for its entire length. The left ventricular band was still much swollen, and presented two superficial ulcers at points which had impinged upon the base of the bone. There was also a linear, vertical abrasion upon the right ventricular band, probably caused by the efforts at removal. The whole larynx was red and tumid, and the patient's voice was hardly as good as when first seen.

On October 22d, cords were both clear and intact, the ulcerations had healed, the left ventricular band was still somewhat swollen, but the patient considered his voice as good as ever.

For the accompanying photograph which gives a clearer idea of the foreign body than could be conveyed by any description, I am indebted to my friend Dr. W. P. Brandegee.



Following the report of the case, Dr. C. H. Knight, the chairman, remarked:

In connection with a report of foreign body in the larynx, I present a tooth-plate which was carried in the laryngo-pharynx of a patient for the period of sixteen days. The point of special interest which I desire to mention at this time is the fact of the reproduction of tissue on the part of the vocal cords and with it the restoration of function.

This case I reported to this Section on October 22, 1889, three months after the accident occurred. As a result of the pressure and erosion caused by the tooth-plate, the posterior third of both vocal cords had been completely destroyed — it looked as though it had been cut out with a sharp curette. In contraction of the laryngeal adductors the anterior portions of the cords approximated, leaving a wide gap at the post commissure, and the voice was only a whisper. It was my opinion at the time, and so expressed, that the impairment of the voice would be permanent.

Examination a year later, however, revealed a striking change. The scooped-out spaces on each cord had been completely filled in; and from the appearance of the larynx then, one could have no conception of the damage which had actually been suffered. With this reproduction of tissue there was restoration of function. The woman spoke with a clear, resonant voice, but of a lower pitch than before the accident — in quality it approached the voice of the male.

The First Vaccination in Russia. — On October 26, 1768, the Empress Catherine II submitted to inoculation being the pioneer of the practice in her own dominions. The preparations for the novel function were most elaborate. The lymph was supplied by a boy of seven named Markof. This boy was ennobled under the fancy name of Ospiennyi (ospa = small-pox) and brought up under the Empress's own tutelage. His descendants occupy at the present day a prominent position amongst the Russian aristocracy.

A CASE OF HYSTERICAL HIP-JOINT SUCCESSFULLY TREATED BY HYPNOTISM.[1]

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R.I.

The case which I shall report this evening occurred at the Rhode Island Hospital, in the service of Dr. George D. Hersey; and I am indebted to him for the privilege of treating and also of reporting it.

The patient is a girl, eighteen years of age. The mother of this girl is a nervous woman, and during her younger days was subject to nervous crises which took the form of "crying spells," but she gradually outgrew them.

The patient had always been subject to "crying spells," having had them every day and often, several times a day; and was considered a very nervous child. When eleven years of age she fell over a stone wall. The foot and leg swelled, and she was laid up two months. There was complete recovery from this accident, and her usual good health continued until July, 1892.

On July 5th, while working in a woollen mill, having left her work to go across the room, she fainted away, and remained unconscious for a short time.

Upon recovering consciousness, a pail of water was standing beside her, which had probably been brought for the purpose of sprinkling her with cold water, and she at once came to the conclusion that she had stumbled over this pail. In falling, the right hip and side of the head, were injured; but patient was able to walk home. She remained in bed two days, and resumed work again on the third day.

There was no trouble from the hip until the last of August (about a month after the accident), when it began to be painful and tender, and to keep her awake at night. It was at this time that medical aid was first sought.

The hip was painted with iodine every night and morning for a week. This did not blister the skin, nor was any benefit derived. At another time a strong liniment was prescribed for the purpose of blistering. Her mother applied the liniment on herself, and the result was a blister; but on the patient it failed to act, and again there was no benefit derived from treatment.

In December she was carried to the Rhode Island Hospital, Out-Patient Department, was given medicine and advised to go home and remain in bed for ten days. She remained in bed for about a week, and at the end of the ten days returned to the hospital. There was some slight improvement. Patient could walk a little, but would fall after a few steps had been taken.

The pain was growing worse all the time. Unable to sleep at night, several "crying spells" every day, and in the latter part of December was totally unable to walk and remained in bed all of the time. The parents now gave up all hope of ever seeing her walk again. Various diagnoses had been made, namely, nervousness, fracture and hip-disease.

Finally, on April 24, 1893, she entered the Rhode Island Hospital as an in-patient in the service of Dr. Hersey. I saw her for the first time during the first week in May. She was thin and anæmic, and apparently of a very nervous disposition. On manipulating the leg she would groan continuously, but by distracting her attention and moving the leg before she was prepared for it, the muscular contractions were overcome and pretty free motion obtained. With the thigh flexed on the body and the leg flexed on the thigh, external rotation could be made slowly until the leg was nearly on a level with the body. With the patient lying flat on the chest there was no limitation to extension, both of which movements would be good tests for hip-disease. There was no crepitus on motion. There was no thickening around the joints. Placebos controlled pain, and produced sleep at night.

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[1] Read before the Providence Medical Association, September 4, 1893.

It was very evident, with the family history, and with the previous history of the patient, that the case was one of hysterical hip.

Having previously had success with hypnotism in other cases (of a different class, however), I determined to try this method of treatment.

The first *séance* was on Monday, May 8, 1893. I began by having a talk with the patient, in the presence of a third person, Dr. Perkins, the house-officer. I explained what I proposed to do, and told the patient that in order to be successful she must not oppose me in the least, and must do everything she was told. She was anxious to get well again, and promised to be obedient. I then proceeded to hypnotize, but was only able to obtain the first degree of somnolence: that is, patient remained with eyes closed and repeated after me everything she was asked. At this *séance* all the pain was made to disappear, and patient was told there was not going to be so much pain at night, and that she would sleep better.

May 9th. Slept better last night than any night since entering hospital. Complains of some pain. Again only the first degree of somnolence obtained. Pain caused to disappear, and told she was improving.

May 10th. Improvement continues; still some pain, but not enough to cause discomfort. First degree of somnolence again obtained. and the usual suggestions made.

May 11th. Did not sleep as well as usual last night. When house-officer made the evening visit, he found her quietly crying, "on account of the pain."

May 12th. Feels worse to-day than for two or three days, but is very obedient. The usual suggestions made.

May 13th. This was the sixth *séance*; and for the first time I succeeded in putting her completely under the hypnotic influence. She was told to remain asleep for a half-hour, and then to wake up and ring a bell which had been placed by her bedside. The bell was rung in about a half-hour, and patient said she had been asleep.

May 15th. Patient had now been hypnotized six days in succession, and I had steadily gained in the ability to control her. This afternoon, as previously arranged, I found the patient sitting in a wheel-chair. She was complaining of considerable pain and also of being dizzy. I was told by the house-officer that the last two days had been the worst since entering the hospital, and the pain had been so severe as to demand an anodyne. Not very encouraging certainly, after a week of treatment. Hypnotized in the chair. Pain and dizziness caused to disappear, and when all through said she felt perfectly well.

As prearranged, I found the patient dressed and sitting in the chair and feeling better than for two days. Hypnotized her, and told her to walk across the room. She opened her eyes and started across the floor. With the hand on her hip, she hobbled across the room, nearly falling two or three times. I constantly stroked her forehead, and supported her when there was danger of falling. After returning to the chair she looked very pale, but there was no groaning or expression of pain; and when the *séance* was finished, she felt perfectly well. This was the first time she had borne her own weight in about four months.

May 18th. Walked across the room easily, but there was considerable of a limp.

From this time there was constant improvement every day. Slept well and had nothing to complain of; but the limp remained.

To see her walk, it looked as if one leg was really shorter than the other; and upon being questioned, she said such was the case.

Consequently the legs were measured, both by Dr. Perkins and myself. The measurements being made over the clothes were, of course, not accurate; but we both made the leg longer than its mate, instead of shorter. Without making skin measurements I took advantage of this fact, and told her that the leg was a little longer, and that she really ought to limp with the other leg.

On May 26th, after being hypnotized in all eleven times, and having no subjective symptoms whatever, the patient was discharged cured; the only objective symptom being a very noticeable limp.

On June 2d, patient reported at the out-patient department looking very much better, not nearly so anæmic, and the limp only very slightly noticeable.

On June 9th, patient reported again without any limp whatever, feeling and looking perfectly well. At this time careful skin measurements showed the legs to be exactly equal in length.

In August, nearly three months after leaving the hospital, patient was in excellent health in every way.

I have reported this case in detail to show what hypnotism may do in these cases, even though at first they become apparently worse; and to show that hysteria, whether general or local, being a disease most intimately associated with the will and the mental faculties, may be treated through the same channels.

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Reports of Societies.

CAMBRIDGE SOCIETY FOR MEDICAL IMPROVEMENT.

ALBERT H. TUTTLE, M.D., SECRETARY.

MEETING of May 22, 1893.

DR. S. E. WYMAN, of Cambridge, read a paper on

ANTHRAX FACIEI, WITH REPORT OF A CASE.[1]

DR. DRIVER: For some time anthrax was not uncommon in Dedham, where it occurred in mattress-makers. The first cases were nearly all fatal, later but few of them died. A patent smudge was invented for treating the hair before handling; and it was supposed that this destroyed the germs and was preventive of the disease. For the past five years not a single case has occurred.

DR. CLARK saw several of the Dedham cases and thought the disease took a retrograde action, the infection becoming less and less virulent until it finally exhausted itself. He thought one should accept the statement that the disease was contracted from well-cooked meat, with considerable doubt. The chances of a dirty cook contaminating articles of food after they are prepared for the table, as was long ago pointed out by Dr. Holt, are very great, and the cases attributed to the action of roasted bacilli can be more reasonably explained by this means.

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[1] See page 413 of the Journal.

Dr. Tuttle saw a case which occurred in the practice of Dr. Marcy in its later stages. Different specimens of the discharge were examined by Dr. Marcy and himself, that of the former contained the bacillus, whereas that which he examined contained only spores, a fact which shows the need of examining material from different parts of the lesion. The manner in which the disease extends in lines through the subcutaneous cellular tissue, in various directions, radiating out from the primary lesion, which usually remains small, much smaller than that of ordinary carbuncle, serves as a prominent feature in distinguishing the disease at a late period.

Dr. Marcy said the patient above referred to went to Florida in full health, that a pimple developed on the left side of the face, near the nose, and ran rapidly through the stages already described, until when first seen by him on the eighth day of the disease, the whole side of the face, including both lips, the angle of the jaw and anterior temporal regions, and the orbit of the right side was involved and freely suppurating. The diseased area was cut and curetted, and large quantities of iodoform rubbed into the diseased tissues. One of the worst symptoms of the case was found in the urine which was loaded with albumen and contained casts.

Dr. Wyman, in closing, said that the disease did not run out in Russia, where it remained as virulent as ever. He also referred to Pasteur's method of attenuating the virus so that it could be introduced into animals, thereby producing immunity from the disease. Dr. Beach, of Boston, was the first in this region to inject antiseptic solutions subcutaneously for the cure of carbuncles, in 1888; but it has been done by the same method before him in similar conditions, using solutions of carbolic acid, however, instead of corrosive sublimate, by Dr. J. R. Jarnovski, of Vasilsursk, in 1876.

Dr. T. E. Cunningham read a paper on

PUERPERAL ECLAMPSIA.[2]

Dr. Driver: Six cases of eclampsia, all in his own practice, occurred during his first 1,000 deliveries. To adopt routine treatment was disastrous, yet it was frequently done by the young practitioner.

Case I was treated with chloral and morphine. The mother was unconscious for four days, during which time there was copious perspiration; but she finally recovered. In Case II, both mother and child survived. Case III was a breech presentation, and ended fatally. Case IV admitted three fingers in the os; and, following the rule to deliver when such is the case, both mother and child were saved. Case V died quickly. Dr. Driver thought, if bleeding had been resorted to, the patient might possibly have been saved. The abdomen was quickly opened, with the hope of saving the child, but without avail. The result of the remaining case was not recalled.

Dr. Hooker had two cases one of which remained unconscious four days.

Dr. Bryant had seen a case where pain in the pit of the stomach, before the onset of convulsions, was a prominent symptom; and he had heard of a similar case in the practice of another physician.

Dr. A. P. Clarke had noticed that those cases where there was a great excess of albumen were apt to prove fatal, especially when complicated with retinitis and generally debility. He recommended the use of chloroform in these cases, since ether had a bad effect on the kidneys.

Dr. A. H. Tuttle had seen four cases, three in consultation and one in his own practice. The first was a multipara, in the practice of Dr. Norris. Manual dilation was begun at 7 o'clock, P. M.; but, owing to a very rigid condition of the os, it was not completed sufficiently to admit delivery until noon the following day. The mother made a good recovery, but the child died in a few hours. The second case was in a colored girl, a primipara, unmarried, and about seven months' pregnant. Medicines were given to restore the functions of the skin, kidneys and bowels; but the patient died comatose within twelve hours of the onset of the trouble. The third case was in the practice of Dr. Pidgin. She was a multipara, near term, whose urine had been examined several times for albumen during the pregnancy and just before the convulsive movements supervened, but with negative result. The os was easily dilated, and the child (alive) delivered with forceps, the mother making a good recovery. The fourth case occurred in the practice of Dr. Slayter. This was a multipara, of robust constitution, about six months' pregnant. Labor was instituted, and the patient made a good recovery.

Dr. Marcy's first case died. Two cases were saved, he thought, by bleeding, one where the convulsion occurred four days after delivery. In a fourth case, a primipara, there was rapid abdominal distention; and at eight months the urine contained casts and albumen. The artificial delivery of twins was performed, but both mother and children died. The autopsy showed fatty degeneration of the renal capillaries, with the presence of thrombi. In a fifth case, that of a young bride, eight months' pregnant, the urine was examined for albumen and casts, but negatively; yet the patient died suddenly three days later. He thought that most work in obstetrics was poorly paid for. The fee should be increased, and more time devoted to the examination of the urine and to the care of the patient during the whole period that the mother is carrying the child.

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AMERICAN NEUROLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, Long Branch, N. J. July 25, 26 and 27, 1893.

(Continued from No. 16, page [illegible].)

THE ANATOMICAL CHANGES IN THE SPINAL CORD IN AN OLD CASE OF INFANTILE PARALYSIS.

Dr. Joseph Collins, of New York, presented numerous sections of the spinal cord, and reported the history of a case of infantile paralysis of long standing.

PROGRESSIVE MUSCULAR ATROPHY.

Dr. C. M. Hammond, of New York, exhibited microscopical specimens, and gave the pathological report of two cases of progressive muscular atrophy, and referred to the fact that considerable confusion is occasioned by the misapplication of the term "peroneal type" to a disease totally dissimilar to the one under consideration.

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[2] See page [illegible] of the Journal.

The first patient was a woman forty-six years of age, without history of gout, rheumatism or syphilis. In the fall of 1889 she stumbled over a chair, bruising the right shin slightly, and a few days afterward she was unable to walk as well as formerly. Soon after, there was marked weakness of the flexors of the foot and the extensors of the toes. By October, 1890, there was complete paralysis of the entire right leg, with reaction of degeneration, loss of power and electrical contractility of the anterior tibial muscles of the left leg, and atrophy and loss of power of the thenar and hypothenar muscles of the right hand. Gradually but rapidly the other extremities became involved, and ultimately the abdominal and intercostal muscles were affected. She died suddenly from either cardiac or respiratory paralysis. The sections of the cord showed sclerosis of the pyramidal tracts and atrophy of cells in the anterior horns, and degeneration of Gower's column throughout its entire extent. The conclusions to be drawn from the clinico-pathological study of this case would be that the muscles of the hand were supplied by the mesial group, and the muscles of the forearm from the anterior group of cells in the anterior horn. In the second case, seen in 1882, the disease only affected the muscles of the left thumb. He had the opportunity to watch the case to its termination, in 1893. It ran the usual course, and was in every way typical. At the time of death all of the muscles from the level of the arm-pits upwards, except the facial muscles, were atrophied, as well as those of the upper extremities. She became maniacal, and finally died from exhaustion. The cord and medulla were examined, and the changes were identical with those described in the preceding case.

He concluded that these cases demonstrate that progressive muscular atrophy is due to a degeneration of the cells in the anterior gray masses and the antero-lateral white columns. Also, that it is superfluous to divide progressive muscular atrophy into different types, because the disease does not invariably begin in the same group of muscles.

The last two papers were discussed together.

Dr. Mills agreed with Dr. Collins's views as to the arrangement of cells presiding over the flexors and extensors. He suggested examination of the nerve roots at the extreme limit of the lesions.

Dr. Sachs thought that such a careful pathological study would ultimately lead to better results than the usual clinical methods. That the Aran-Duchenne type was of spinal origin there could be no doubt, but he was not certain that the case of Dr. Hammond represented the peroneal form of progressive muscular atrophy, as described by Charcot, Tooth, Hoffman and himself. If the case were such, the findings in the spinal cord would have been of great importance. He was not yet certain whether the peroneal form represents a spinal disease or a peripheral affection.

Dr. Putnam had a case in an adult where there was rapid destruction of gray matter throughout the cord. Despite the violence of the process, portions of the interior and lateral cell groups were preserved.

Dr. Preston inquired as to alterations in the blood-vessels. He believed this was the primary alteration in the pathological changes. He also asked if Dr. Collins had examined cross-sections of the mixed nerves.

Dr. Gray thought it very difficult to make a positive clinical diagnosis between the central and peripheral portions of the lesion. This was often illustrated in the class of cases reported by Dr. Hammond.

Dr. Collins, in closing the discussion, said that his investigations extended over greater ground than his paper suggested. There was diminution in the size of the vessels, but no evidence of atheroma. The mixed nerves were not examined. He thought the hæmotoxylon stain useless for a study of the cellular structure.

Dr. Hammond concluded that the peroneal type was simply progressive muscular atrophy beginning in the peroneal muscles.

OPTIC NEURITIS, BLINDNESS, DEAFNESS AND THE KNEE-JERK IN CEREBELLAR DISEASE.

Dr. F. X. Dercum, of Philadelphia, read a paper with this title. He thought many of the symptoms of cerebellar disease were both inconstant and variable. They are difficult of explanation and frequently impossible to correlate.

He desired to call attention more especially to the optic neuritis, the blindness, the deafness and the modifications of the knee-jerks.

He related the history of seven cases in which the above symptoms were present.

It is a matter of common experience that very high grades of neuritis may exist without marked impairment of vision. It would seem, therefore, that the added symptom of blindness gives a special significance to the optic neuritis found in these cases. It would appear that for some reason if we have optic neuritis at all in cerebellar disease, that it is apt to be intense in character, and further that it is likely to be associated sooner or later with total blindness.

The proximity of the quadrigeminal bodies has naturally suggested itself as in some way explaining this blindness. The ataxia and titubation present in these cases refer us at once to disease of the vermiform process. A consideration of anatomy, as well as the autopsy of Case III, will show that if a growth be situated in the vermiform process, especially anteriorly, and that if this growth continues to enlarge, it will sooner or later press upon the superior cerebellar peduncles and very probably upon the quadrigeminal bodies themselves. When we recall the relation of the fibres of the optic tract to the primary optic centres, we can readily understand how if pressure or irritation occur at this point a neuritis should be a consequence. Further, the irritation being direct, we can, perhaps, understand why the neuritis should be of a high grade, and, finally, also why this neuritis should be associated sooner or later with total blindness.

With regard to the deafness which is present in some cases of cerebellar tumor, and which was absolute in Case III, it may perhaps be explained in a similar manner. The studies of Spitzka, Monakow and others have made it extremely probable that the posterior quadrigeminal bodies stand in the same relation to the auditory fibres as do the anterior to the optic fibres. It would simply be necessary, therefore, to our explanation that the pressure involve these structures, in order that deafness should be a symptom.

When we turn our attention to the knee-jerk, we meet with a problem of peculiar difficulty. It would seem, that one would be justified in accounting for the loss of knee-jerk when observed in disease of the cerebellum by the loss of muscle tonus.

It is extremely probable that lesions of the cerebellum act as do lesions elsewhere, in one or two ways, that is, either by destroying tissue and thus destroying function, or by acting as irritants. It is perhaps in this way that we can account for the fact that in some cases of cerebellar disease the knee-jerk is absent, and in others present or exaggerated.

Dr. Gray hoped that Dr. Dercum's explanation of the symptoms would prove true, and asked if the pupillary reflexes had been observed.

Dr. Dercum replied that when the disease had advanced there was loss of reflex action to light.

Dr. Putnam spoke of a case of long-standing optic atrophy and practically no other symptoms. Although the optic neuritis persisted for two years, the autopsy showed a cyst and tumor of the cerebellum.

Dr. Preston asked if distinct loss of muscular sense existed in Dr. Dercum's case. He had noted this symptom in two patients. In four of his cases, the knee-jerks were irregular, disappearing and occasionally returning.

Dr. Knapp said that in all of his cases confirmed by autopsy, there was neuritis or optic atrophy. In one case where cerebellar tumor was suspected neuritis had not developed. Blindness had not been so constant. In another case the light reflex was lost when the pupils became dilated. Pressure on the corpora quadrigemina was most likely to produce blindness. He had never noted deafness. As to disease of the middle lobe of the cerebellum being responsible for the ataxic gait, he thought this view untenable.

Dr. Leszynsky, of New York, said he had observed a number of cases, two with autopsy. He thought the concomitant basal meningitis had much to do with the production of the optic neuritis, by extension of the inflammatory process along the nerve sheath. In many cases the neuritis was a late symptom. Where the neuritis or optic atrophy was accompanied by loss of light perception the pupillary reflex was always absent.

Dr. Dercum did not believe the neuritis due to pressure, but more dependent on the location of the tumor. In his cases the neuritis was always of high degree. Neuritis, blindness and deafness indicated pressure on the mid-brain. He would look for cerebellar symptoms where the knee-jerk was variable.

A NEW METHOD FOR THE REDUCTION OF DISLOCATION OF THE CERVICAL VERTEBRÆ.

Dr. G. L. Walton, of Boston, in reading a paper upon this subject, said that since the publication of sixteen cases previously coming under his notice, he has seen several of similar character, leading him to the belief that this condition is not rare, though frequently overlooked. Reduction by extension usually attempted is unsuccessful. Spontaneous reduction has occurred, showing that direction is more important than force. This fact led him to the discovery of the method theoretically correct, as shown by manipulation of the vertebræ, and by experiments upon the cadaver made by Dr. Richardson of Boston and himself. The method has been recently demonstrated in practice by Dr. Beach, at the Massachusetts General Hospital, with successful result.

In illustration of the method, suppose the left articular process of one vertebra has slipped forward over that of the vertebra below, and fallen into the depression anterior to the articular process. This bends the head to the left, and turns the face to the right. The reduction is accomplished by extending the head diagonally backward to the right, so as to elevate the articular process, after which rotation to the left replaces the displaced vertebra. The transverse processes on the right act as a fulcrum. The ligaments which hold the vertebra firmly in the false position make no opposition to this manœuvre, which requires no force. In bilateral dislocation the same movements should be made, first on one side reducing it to unilateral displacement, then on the other.

Dr. Putnam said that cases are more numerous than supposed, and cited the instance of a man injured by a fall, who died through carelessness in his removal to a hospital.

Dr. Sachs asked if this method would be practicable in other than recent cases.

Dr. Walton replied that the operation was performed in one case of about ten days' standing. A case in which bilateral dislocation was produced spontaneously, with perfect recovery, would lead him to recommend the attempt at reduction, even after a number of months, should there be no doubt as to the diagnosis.

SECOND DAY. — WEDNESDAY.

ACROMEGALY, GIGANTISM AND FACIAL HEMIHYPERTROPHY.

Dr. C. L. Dana, of New York, read a paper with this title, and reported the history of a case of acromegaly, with autopsy; also a case of gigantism, or somatomegaly, with some symptoms of acromegaly. The giant had a unilateral facial hypertrophy.

The first case was that of a full-blooded Bolivian Indian, who was exhibited as a giant. He was thirty years old; height six feet, seven inches; weight three hundred pounds. He had an enormous development of the malar and frontal bones. His thorax measured fifty inches in circumference. He died suddenly. On autopsy, the brain was found normal; weight fifty-five ounces. The pituitary gland was greatly enlarged, measuring one inch in diameter. Thyroid weighed four ounces. The feet and hands had increased in circumferential measurements. The brain presented interesting peculiarities of fissuration.

The second case was a professional giant, seven feet, five inches tall; weight three hundred fifty pounds; age nineteen years. His muscular development was feeble. He had several symptoms resembling those of acromegaly. His most curious condition was a progressive unilateral facial hypertrophy due mainly to osseous growth. It suggested an acromegaly attacking only half of one extremity. Only eleven cases of this affection are on record.

Dr. Dana said that acromegaly was sometimes associated with gigantism. He thought that many so-called giants were instances of pathological growth rather than excessive physiological development. There was much evidence to show that the pituitary gland had some function in these disorders. Among twelve autopsies, this gland was found enlarged in ten.

Dr. Dercum said that acromegaly is not associated with increase in the length of bones but in their width. He regarded Dr. Dana's case as one of gigantism with acromegally superadded.

Dr. Gray considered it a question whether acromegaly and gigantism are not identical. We are still in the dark as to the pathology of acromegaly. He thought the cases presented did not warrant Dr. Dana's conclusions.

Dr. Collins looked upon them as two separate diseases. In gigantism the changes are in the cellular structure of the diaphyses and epiphyses, principally the former. In acromegaly the changes are confined to the epiphyses. Probably the disease of the pituitary glands stands in proper relation to acromegaly. Much depends on the method of examination. He had destroyed the gland in animals to see if acromegaly developed, but all died. He thought giants may suffer from acromegaly, and regards it as a degenerative disease.

Dr. Brill, of New York, asked what structures in the brain were usually involved.

Dr. Collins answered, the glandular structure of the pre-hypophysis.

Dr. Dercum expressed the view that as the other ductless glands are so often enlarged in acromegaly, to select a single gland as being enlarged seemed precipitate. No doubt the pituitary body may have important functions to subserve.

Dr. Putnam said that investigators have destroyed the gland in animals, producing polyuria, thirst and debility. In view of the small number of autopsies, we cannot dogmatize. The gland was found normal in three out of nine reported cases. He had seen temporary improvement in one case under the administration of thyroid extract. We are dealing with abnormities of development, and cannot expect to discover lesions as the cause. In ten autopsies that have been made the thyroid was wasted in 77 per cent.

Dr. Sachs was of the opinion that both conditions are related. Gigantism is a form of physiological excess while acromegaly is a distinct morbid condition. He did not attach much importance to the influence of the pituitary body, but thought our knowledge of the exact etiology and pathology is still in abeyance.

Dr. Weber, of New York, had seen two cases. One had symptoms of myxœdema. He was inclined to believe gigantism to be excessive physiological growth.

Dr. Mills had found at autopsy a tumor destroying the pituitary gland, but there was no acromegaly.

Dr. Dana, in closing the discussion, said we did not know the functions of the pituitary gland in its relation to acromegaly, but it was certainly of some importance. He still believed in the clinical relationship between gigantism and acromegaly, but looked upon gigantism as an irregular type. He regarded gigantism as a pathological condition. The thyroid was not enlarged in his case, but the pituitary gland was.

THYROIDECTOMY IN THE TREATMENT OF GRAVES'S DISEASE.

Dr. J. J. Putnam, of Boston, read a paper on the treatment of Graves's disease by thyroidectomy. After calling attention to the fact that this operation has been done some forty times, mainly by German surgeons, with but two deaths and a very large percentage of cures or improvements, the speaker narrated a case from his own experience.

It was that of a young woman suffering from a typical form of Graves's disease, of nine months' standing, and with a rather large goitre. The right lobe and most of the isthmus were removed .During and after the operation the patient's pulse ran up very high, and for several days she lay in an extremely prostrated and apparently critical condition. She then rallied; and now, at the end of six months, her condition is decidedly better than before the operation, though she is far from being cured. The remaining portion of the tumor has not shrunk, and still shows a marked tendency to vascular enlargement. The voice was reduced to a whisper under the immediate influence of the operation, but has now nearly recovered its natural tone. This is not an unusual occurrence.

Dr. Putnam analyzed the reported cases from the following points of view: the immediate and remote effects of the operation (including the mortality-rate after operation for goitres in general), the influence of the character of the tumor on the result, the degree and persistence of the improvement in favorable cases, the character of the operation.

Finally, the question as to the nature of Graves's disease, and the relation of the other symptoms to the goitre, was discussed. It was pointed out that this relationship was probably based on the fact that the thyroid has important vascular functions.

Strong emotions are capable of causing temporarily most of the symptoms of Graves's disease.

The reasonableness of the operation lies in the fact that in Graves's disease certain nervous centres are in a state of extreme irritability. Any means which will cut off a considerable number of excitations from reaching the unstable centres is likely to be beneficial by securing for them a partial, physiological rest. There are various means, such as complete rest, the treatment of the naso-pharynx, etc., which may do this in a measure, but no one means is so effectual as thyroidectomy. The operation, is, however, attended by a slight risk of death, and by a greater risk of considerable temporary prostration and laryngeal paresis.

Dr. Dercum had recorded the case of a man with all the symptoms of Graves's disease but the enlarged thyroid.

Dr. Weber had noted recovery in a patient possessing all of the characteristic symptoms, under the persistent use of iodide of potash. The dose was gradually increased to three drachms daily.

Dr. E. D. Fisher thought it would hardly seem probable that in Graves's disease the enlarged thyroid can be considered as acting in a mechanical way in producing the symptoms. He had seen many cases in Canada, in whom apparently no symptoms were produced. These persons continued in their regular occupation without discomfort.

Dr. Putnam, in closing, said that a large number of instances of goitre, without symptoms, had been reported with autopsies. Such children in particular had suffered from debility, and there was dilated right heart. He gave a *résumé* of our present knowledge of Graves's disease, both experimental and clinical. He concluded that we have not sufficient data to establish a physiological basis for the disease.

(To be continued.)

Ecce Thyroid! — A correspondent writes to the *Medical Press* as follows: "Having been recommended to try the thyroid gland treatment for inveterate psoriasis, I ordered a thyroid gland from the family butcher. He says he knows 'what IT is because there is a demand for IT just now.'"

Recent Literature.

Appendicitis and Perityphlitis. By Charles Talamon, M.D. Translated by E. P. Hurd, M.D., pp. 210. George S. Davis. 1893.

Appendicitis, "the new disease," as the daily press is apt to designate it, has become a term both well understood by the physician and dreaded by the community. The numerous contributions to the literature of the subject during the past eight years form a mass of titles very discouraging to one who attempts to make a thorough investigation of what has been accomplished. It is, therefore, with gratitude that we call attention to this monograph which offers a substantial help to all who desire to acquire more than text-book information on this interesting and important subject. Dr. Talamon has no intention of giving merely an historical and analytical statement of what has been accomplished, but he is earnest in bringing forward certain personal views which will carry more or less weight. Some of them may be briefly referred to with the statement that they are given no undue prominence and form merely a part of the volume which is intended to represent a comprehensive consideration of the whole subject.

His theory of the origin of an attack of appendicitis is based upon the supposition that an intestinal concretion suddenly penetrates the appendicular canal and there gives rise to the incipient pain and subsequent disturbances. He believes that the concretions are formed in the cæcum, because they "are perfectly round." This statement is in opposition to the daily observations of elongated, oval, flattened or cylindrical concretions in the appendix, both in health and in disease.

The author apparently forgets that the hernial protrusions of the mucous membrane of the large intestine are not present in the cæcum and that when found, even in large numbers, in the usual site, the descending colon, they rarely produce any disturbance.

The important distinction is rightly made between a relapsing and a recurring appendicitis. In the former the intervals between the attacks are so short that the disease is always present; it is a chronic appendicitis with exacerbations and remissions. In the recurring appendicitis each recurrence takes place after an interval of months or years of freedom and has all the characteristics of the original attack.

It is in this connection that the author's consideration of appendicular colic is so important. This symptom has often led to the diagnosis of an acute appendicitis, to an immediate operation and to the extirpation of an appendix free from any obvious anatomical change. The mistaking of appendicular colic for perforative appendicitis should be the bugbear of the surgeon as its opposite should be the dread of the physician. According to Talamon "chronic relapsing appendicitis is rather an infirmity than a malady menacing to life."

The treatment of appendicitis should depend upon the belief in an existing or threatening perforation. Our author says that in the immense majority of cases our knowledge as to the presence or absence of the perforation is made clear by the third or fourth day. He believes, however, that it is almost impossible, during the first week to decide with certainty upon the presence of pus. Hence the surgeon should not be called for till the seventh or eighth day. This rule, however, is not absolute as he recognizes the importance of considering each case by itself.

"*Theoretically*, surgical interference is indicated as soon as the diagnosis of perforative appendicitis is made. *Practically*, this interference should be immediate in the forms attended with peritonitis which becomes general from the outset. . . . It ought, in our judgment, to be put off till the eighth or twelfth day in the forms with partial peritonitis, as the diagnosis of suppuration cannot be made certain during the first week, and the chances of recovery seem to us the greater the more thoroughly the purulent collection is encysted."

It is satisfactory in a book written by a foreigner to find the author more than willing to show an appreciation of the work of American physicians and surgeons in redirecting attention to the appendix as the frequent cause of serious and fatal disease. His monograph bristles with American names and full credit is assigned for their work.

Dr. Talamon has given an admirable statement of our present knowledge of the subject, and Dr. Hurd is to be complimented on the excellence of his translation. If the volume had been better published, its cost would have interfered with its usefulness.

The Law of Cremation ; An Outline of the Law Relating to Cremation, Ancient and Modern. By Aubrey Richardson, Solicitor. London: Reeves & Turner. 1893.

The primary and special purpose of this book is to state in explicit terms the legal status of cremation in the various civilized countries where it is practised, and the regulations which have been instituted to govern its administration. The work is something more than this, however, for it gives a concise history of the whole subject, showing the widespread adoption of the funeral pyre by the earliest nations of antiquity for the disposal of their dead, the distinct influence of Christianity in opposing the custom and in favoring inhumation instead, and the more recent reaction toward a return to the earlier practice of incineration, but with greatly improved methods and ampler safeguards. The regulations which have been ordained by various governments, or by the cremation societies themselves, to reduce to the lowest terms the possibility of destroying evidence of crime when a dead body is incinerated, are fully set forth and appear to be in every instance entirely adequate. The volume is a seasonable and interesting contribution to the literature of the subject and will prove particularly acceptable to those who advocate the reform which cremation is designed to bring about.

The Throat and Nose and their Diseases. With 120 illustrations in color, and 235 engravings by the author. By Lennox Browne, F.R.C.S.E., Senior Surgeon to the London Throat and Ear Hospital, etc. Fourth edition, 734 pages. Philadelphia: Lea Brothers & Co. 1893.

The fact that the third edition of this book was so soon exhausted that it has been out of print for nearly two years is sufficient indication of its popularity.

The principal additions in this edition are in the chapters on nasal deformities, and on the membranous affections of the mucous membranes. The number of pages has not been increased, and the book will undoubtedly still hold its position as a safe and practical text-book, well arranged and of convenient size.

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PHYSIOLOGICAL CHEMISTRY AS A PART OF MEDICAL EDUCATION.

In a paper read before the Section in Pedagogy of the Pan-American Medical Congress, Prof. R. H. Chittenden makes an earnest plea for a more thorough training in physiological chemistry as a part of medical education. Biological studies are the essential substructures on which the study of medicine rests, for the profession demands at present, men, not alone trained in the art of medicine, but of high intellectual attainments, of broad and scholarly habits of thought and observation, and endowed with the power of logical reasoning. No training is better fitted to educe these traits than the careful study of biologic processes — not by the reading of books or lecture-notes, but by actual observation and appreciation of the processes as seen in laboratory work. The important and close relation of biology to medicine is more appreciated every year; and each year the common changes of animal and vegetable processes are found to depend upon definite and fundamental chemical formations.

At present the study of physiology in many medical schools is incomplete. It consists mostly of muscle and nerve physiology, with demonstrations of blood-pressure and kindred experiments designed to illustrate mainly the mechanical side of physiology. Important and needful as this is there is another side of physiology which, in this country, has not been cultivated as it should be — namely, the chemical side of physiology, or physiological chemistry. It deals with quite a different series of problems from those pertaining to so-called pure physiology, but they are as fundamental, if not more so, than any other single line of physiological work.

Physiological chemistry means more than the mere application of chemical analysis to a determination of composition, it is the study of the processes of functional activity going on in the body. "The unsymmetrical development in medicine, especially of the last twenty years, by which the sovereignty of morphology has been attained, giving undue weight to anatomical methods of investigation, has reached its climax, and the clinicians even are now looking to physiological chemistry to aid them in unravelling many of the hidden processes of life, thus hoping to gain clews to clearer methods of diagnosis and more rational lines of treatment."

As the teaching of medicine has become each year more clinical and direct, so should the study of physiology, particularly in its chemical relations, be taught by practical laboratory work in small sections, each with a trained instructor. A course, to be worthy the name, should extend at least through six months, with an average of fifteen hours of laboratory work a week. Such a course can be advantageously taken only by men who already have knowledge of general, analytical and organic chemistry, physics, anatomy and histology, together with more or less familiarity with general physiology.

To the plea that medical students cannot afford so much time for a study only indirectly connected with medicine, Prof. Chittenden replies that the time is well spent, especially at present, when there is need of more properly trained physicians rather than of men holding diplomas of medicine.

The details of such a course will vary with the instructor; but the more thorough and general the work, the better for the student. The various albumens and their changes and decomposition products, the reactions and composition of muscular tissue, "in nerve tissue the chemical characteristics of the various elements and the chemical differences between the gray and white matter, are to be noted; the neuroglia, neurokeratin and brain proteids are studied, while chemical and anatomical relationships are compared in this as in all other tissues examined." In digestive and excretory functions, the range of study opened is wide and directly applicable to the practice of medicine. Such laboratory work is perhaps best accomplished before the student begins his medical course proper.

"But the medical school itself can well afford to establish a thorough course in this subject; indeed, no medical school at the present day can afford to be without such a course of study if it hopes to rank with the leading institutions of the land, or aims to provide instruction of the highest and fullest type."

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MAY TYPHOID FEVER ARISE *DE NOVO.*

Dr. Hubert Work, of Pueblo, Col., writes to the *Medical Record*, September 9, 1893, his experience with typhoid fever on the cattle ranches of Colorado. He has known severe outbreaks of this disease under circumstances where he believes a *contagium vivum* could not be traced. At the same time, pollution of the drinking-water seems in all cases to have been a factor. In one instance, twelve persons in one locality took the fever in a grave form; all these had used drinking-water from a well adjoining a pit in which a quantity of decaying vegetables, a dead cow, etc., had been buried. In other instances the well water was known to have been contaminated by the washings of manure heaps. In two cases, typhoid fever was contracted after eighteen months' residence on a newly-located ranch; the water-supply, reported as good, was taken from new wells fifty feet deep.

Dr. Work is inclined to reject all modern germ theories of typhoid fever and to commit himself to the belief in the *de novo* origin.

The Eberth bacillus has now been found too constantly present in the fæcal matters, intestinal lesions, spleen, etc., of typhoid patients to render probable the theory of accidental concomitance, and had Dr. Work been able to search for these organisms in the cases he reported, he would doubtless have found them in abundance, if they were genuine cases of typhoid and not merely cases of septic fever. Without such an examination and without autopsies, the diagnosis itself must remain in some doubt.

Dr. W. R. Cushing, of Dublin, Va., relates a similar case[1] of a patient living on a mountain side remote from other people, who was said not to have been out of the neighborhood for weeks, who breathed the purest of mountain air, drank from a mountain spring, where the drainage was apparently perfect. The case was a solitary one, no other member of the family was attacked, although using the same water, etc.

Whether Eberth's bacillus is pathogenic, may not be regarded yet as absolutely proved, although the evidence that it is the essentially procuring cause of typhoid is sufficient to convince nearly all pathologists. The bacillus produces a toxine to which the specific symptoms are believed to be largely due. There is increasing proof that this bacillus is propagated in drinking water, and that it develops in decaying vegetable and animal matter, in sewage, etc. Where it originates is a question applicable in common to this and all other forms of life, and one which is not yet solved.

It is now almost axiomatic that no living contagion arises *de novo*. In what preëxistent form, then, does the typhoid bacillus live?

Some bacteriologists at one time entertained the opinion that the Eberth bacillus is identical with the bacillus coli communis which it morphologically resembles. The latter is under ordinary conditions an habitual, harmless inhabitant of the intestines, only manifesting malignancy and becoming pathogenic in circumstances of impaired and lowered vitality. The ingestion of decaying, putrefying substances in water or in food offers one of the conditions of the development of virulence. Though the Eberth bacillus be not identical with the coli communis, it has been suggested that it may yet, like the latter, be a normal inhabitant of the intestines, ready on suitable occasions to become virulent. It is now known that the pneumococcus inhabits normally the saliva of many people, and the pyogenic streptococci and staphylococci have been found in the mouths and other mucous passages of persons in health.

Isolated instances of apparently autochthonous typhoid fever have not infrequently been observed and reported in the past, and will continue to be in the future. In regard to some there is legitimate doubt about the diagnosis; in regard to others the fact that the connection between the one case and a preceding case was not traced, cannot be regarded as sufficient proof that it did not exist. But, however that may be, a *de novo* origin is the least philosophical refuge from the recognized absence of exact knowledge at certain points. We as yet know very little of the life habits of most of the pathogenic bacteria.

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MEDICAL NOTES.

Sir Andrew Clark Paralyzed. — Sir Andrew Clark was striken with paralysis October 19th at his residence in London. He was talking with a patient when he suddenly fell to the floor insensible. Later in the day he partially recovered, but much anxiety is felt regarding him. On the 18th he presided at the Royal College of Physicians during the Harveian oration.

Legal Effect of Pregnancy on Damages. — The Supreme Court of Wisconsin has ruled that when a married woman sustains a personal injury, and her physician does not caution her to avoid pregnancy, and there is no evidence that her injury was such that he should have done so, her pregnancy occurring after the accident, even if it prolong her injury or delay her recovery, is not necessarily, and as a matter of law, sufficient to justify a reduction of damages.

Alvarenga Prize of the College of Physicians of Philadelphia. — The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1894, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1894. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within it the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

A Physician's Bequests. — The late Professor Olivieri, of Naples, left a very large estate which he had acquired from his practice. By his will he made several most munificent bequests: to the Naples Blind Asylum $40,000; to the Pellegrini Hospital $60,000 and his instruments; to his friend and pupil, Dr. Mottola, who attended him in his last illness, he left $20,000.

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[1] [illegible]

Hemp Carders' Disease. — A French physician calls attention to a new malady, the result of occupation, among hemp carders, which is due, he says, not as supposed to the dusty atmosphere but to constant intoxication by the active principle of the hemp. These workers show marked emaciation and muscular atrophy, and have a peculiar earthy brown complexion which is readily recognized in the districts where they live. Their gait is uncertain, the abdomen retracted and the countenance one of depression.

Jewish Method of Slaughter. — Considerable interest has been aroused in England over a test case brought against two rabbis for cruelty to animals in killing them according to the Jewish rite. Expert testimony was given that the animals lived in conscious agony for a considerable time after their throats were cut, and that the Jewish method of slaughter resulted in morbid changes in the flesh of the animals which rendered it unfit to be eaten. Equally expert testimony was given that the Jewish method was less painful and the flesh of animals thus slain was better than that of beasts killed by other means. The court decided, in view of this difference of opinion among the experts, that the charge of cruelty was not proven and the rabbis were discharged.

BOSTON.

Malaria and not Yellow Fever. — The steamer *Merjulio* arrived in Boston from Progresso, Yucatan, on October 18th with several of her crew ill with what was supposed to be yellow fever, as that disease was prevalent in Yucatan when the vessel cleared. Two men had died on the voyage. She was quarantined and the men put under observation. No others have been taken ill and the disease appears to have been but a severe malaria. A passenger who arrived on the Savannah steamer ill with what was at first supposed to be yellow fever was taken to the isolating hospital on Swett Street, but his disease also appears to have been malarial.

Scarlet Fever and Diphtheria. — Since the first of October there has been a large increase in the number of cases of scarlet fever and diphtheria over the corresponding number last month. Wards 24 and 13 show the largest number of cases of diphtheria; while Wards 13, 3 and 8 have the most scarlet fever. The number of scarlet fever cases for the whole of last month was 178. From October 1st until the 15th the number is 147. Of diphtheria there were 90 cases in September. To date in October, 102 cases are entered on the board of health's books.

Memorial Service. — A memorial service in remembrance of the late Dr. Stebbins was held at the Boston City Hospital last Sunday afternoon. About two hundred persons were present including members of the board of trustees, of the visiting staff and past and present members of the house staff, nurses and friends, as well as the immediate family of Dr. Stebbins. The service, which was conducted by Rev. F. B. Allen, consisted of addresses by Dr. D. W. Cheever, Dr. E. W. Taylor and Dr. Rowe, singing by a quartette and the reading of a poem of Whittier's by Miss Thurston.

NEW YORK.

Small-Pox. — From January 1st to October 17th 361 cases of small-pox were reported in the city. Several cases have recently developed on Blackwell's Island, and all the inmates of the institutions there have been vaccinated. Throughout the city vaccination is being carried out among various classes in the community on a larger scale than the Board of Health has ever before attempted.

Physicians to Contagious Hospitals. — Drs. W. P. Northrup, S. T. Armstrong and Albert T. Swan have been appointed on the corps of physicians to visit the hospitals where contagious diseases are treated. It is announced that the Board of Health will establish a clinic at the Riverside Hospital on North Brother Island for the use, under suitable precautions, of advanced students and graduates. All the various contagious diseases will be presented there except typhus fever, the danger from which is regarded as too great.

Death from Swallowing a Sponge. — During the performance of an amputation of a foot at St. Joseph's Hospital, Syracuse, on October 18th, the patient died of asphyxia produced by the swallowing of a piece of sponge. On account of the accumulation of mucus in the throat an assistant was directed to swab it out, and while this was being done the sponge unfortunately became detached from the holder and was swallowed. After a fruitless attempt to extract it, tracheotomy was performed, but this also proved ineffectual in saving the patient's life.

Miscellany.

DR. REEVES AND THE "AMICK CURE."

The courage of Dr. Reeves in openly denouncing the Amick Cure for consumption merits the approval of all honest persons. The refusal of the grand jury to bring in a bill for criminal libel will have the effect of weakening the suit for civil damages still pending. The bravery Dr. Reeves has shown in the cause of principle deserves the support of the whole profession.

At a meeting of the Philadelphia County Medical Society held October 18, 1893, the following preamble and resolutions were unanimously adopted.

Whereas, Dr. James E. Reeves, of Chattanooga, Tenn., having denounced the so-called "Amick Cure" for consumption as a quack nostrum, and stated that its proprietor was not a physician in good and regular standing, was accused of criminal libel; and *Whereas*, the Grand Jury has ignored the indictment brought against him, be it

Resolved, That the Philadelphia County Medical Society congratulates Dr. Reeves on his bravery, a bravery unfortunately too rare at the present day, and tenders him sympathy in the persecution to which he has been subjected.

Resolved, That no person who makes, deals in, or advertises as a cure a quack nostrum, that is to say, a preparation, the composition of which is kept secret, can be termed a physician in good and regular standing; because such action is [illegible] sufficient to work forfeiture of membership in this or any other county medical society governed by the laws of the American Medical Association.

Resolved, That a copy of these Resolutions, duly attested with the signatures of the President and Secretary and with the Seal of the Society, be forwarded to Dr. Reeves, and that they be handed to the press for publication.

De Forest Willard, *President*.
T. B. Schneideman, *Secretary*.

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A NEW DIAGNOSTIC SIGN IN TYPHOID FEVER.

Dr. Filipovich, of Odessa, calls attention to a hitherto unmentioned sign which he has observed in all the cases of typhoid fever under his care during the last two severe epidemics of typhoid in Odessa.[1] It consists in a peculiar callous appearance, of an orange or saffron yellow color, upon all the prominent portions of the palms of the hands and plantar surface of the feet, taking the place of the rosy appearance of those parts in health or the bluish tinge seen in cyanotic patients. This condition is explained by the feeble heart-action, the incomplete filling of the capillaries and the dryness of the skin in typhoidal patients.

In view of its constant and well-marked appearance in all the cases of typhoid under observation, Filipovich thinks it may well serve as a diagnostic sign of typhoid fever, in the absence of other pathognomonic signs.

Dr. Skibnevsky has also observed the constant appearance of this palmo-plantar sign during an epidemic in Moscow. The sign disappears rapidly on the establishment of convalescence.

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PERSISTENT SINGULTUS RELIEVED BY LAVAGE OF THE STOMACH.

Two interesting cases of persistent singultus have been reported recently by Gallant[2] and Coleman,[3] in which other remedies failing immediate relief was obtained by washing out the stomach. The first patient, a man aged twenty-three years, after an attack of acute indigestion began to hiccough on the evening of May 29th. The paroxysms were frequent and continued for the two following days except during sleep. A saline and the administration of small doses of cocaine gave relief for two days, when the paroxysms began again and continued until the afternoon of June 6th, when the stomach was washed out with three quarts of warm water. The singultus at once ceased, and did not return.

Coleman's patient was seventy years old, and the hiccough had resisted household remedies for several days, and had been unrelieved by musk, bromides, chloral or opium. Hiccoughing continued under profound narcotism, and when the patient was seen at the end of the ninth day he was exhausted and oblivious of his surroundings. The stomach was washed out, the current bringing back no food but a quantity of dark tenacious mucus, with patches of separated mucous membrane, very much thickened. The singultus ceased immediately and the patient rapidly recovered.

Gallant, in reviewing the literature of singultus, found no previous mention of this method of relief.

Correspondence.

LETTER FROM CHICAGO.

World's Fair Congress of Public Health, and Meeting of the American Public Health Association, October 10–14, 1893.

Chicago, October 1[illegible], 1893.

The meetings of these organizations, just closed, were jointly held in the Art Institute in this city, beginning on the morning of Tuesday, October 10th. It was at first intended to begin the sessions on Monday; but the overpowering interest attendant upon Chicago Day at the Fair, not only prevented an early beginning, but very largely affected the attendance at all the meetings. The average attendance at the meetings was not more than one hundred and fifty, and there were scarcely any delegates or visitors present from transatlantic countries, so that the meetings could in no sense be called international. The meeting in Mexico last year, however, had created an unusual interest among the Central American Republics, and a large number of physicians who were present at the Pan-American Congress at Washington, visited Chicago, and remained to attend this meeting. More than one-third of the papers presented were by Central and South American delegates.

The meeting was organized at 10 A. M., as a meeting of the World's Fair Congress of Public Health, and was opened with a brief address by Hon. C. C. Bonney, President of the World's Fair Congresses.

He was followed by a further address of welcome by Mrs. Charles Henrotin, Vice-President of the Woman's Branch of the World's Congress Auxiliary.

In the absence of Mayor Harrison, Dr. A. R. Reynolds, Health Commissioner of Chicago, gave a brief address.

Dr. E. Liceaga, President of the Superior Board of Health of Mexico, then addressed the Congress in Spanish, his translated remarks (in English) being distributed among the audience.

Mrs. Dr. S. H. Stevenson spoke briefly of the importance of individual attention to hygiene as one of the essential elements of success in public sanitation.

Dr. Durgin, of Boston, President of the American Public Health Association, then gave his inaugural address upon "Municipal Sanitation," which was a practical address embodying the results of twenty years long and useful experience as Chief Health Commissioner of Boston.

WEDNESDAY, 10.30 A. M.

Dr. Gihon, Medical Inspector, U. S. N., presented the Report of a Committee on "Sanitary and Medical Service on Emigrant Ships."

Dr. Gihon also read a paper which had been sent by Sir Joseph Fayrer, of London, entitled "Tropical Diarrhœa." The paper was devoted mainly to the therapeutic phase of the subject and not to the preventive treatment. His description corresponded quite closely to that of the diarrhœa which affected many of the troops engaged in the Civil War (1861–65), and which, if the records of the Pension Department may be credited, still continues to affect them. Dr. Fayrer very strongly commended a milk diet in the treatment of this disease, the milk to be used in liberal quantities.

Prof. W. T. Sedgwick, of the Massachusetts Institute of Technology, presented the subject of the "Origin and Dissemination of Typhoid Fever," in which he gave his experience in the investigations of several epidemics of typhoid fever, which had occurred in Massachusetts during 1891 and 1892. He illustrated the subject by means of elaborate maps, diagrams and heliotype illustrations. The principal conclusions to be drawn from his paper were, that a pure water-supply, a pure milk-supply, and careful attention to personal cleanliness in the management of this disease, were essential to its prevention.

WEDNESDAY. AFTERNOON SESSION.

Mr. Allen Hazen, Chemist at the Lawrence Experiment Station of the Massachusetts State Board of Health, contributed a paper on the "Sewage-Disposal Problem in

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[1] [illegible]
[2] [illegible]
[3] [illegible]

American Cities." His paper was devoted to the rapid development of sewage-disposal in American cities, the different methods employed, and the sewage-disposal of the World's Fair (of which a more definite statement will be given in the report of Friday's proceedings).

Dr. U. O. B. Wingate, Health Commissioner of Milwaukee, gave an interesting description of the experience of that city in the "Collection and Disposal of Animal and Vegetable Waste." After several experiments in the cremation of garbage within the limits of the city, the city authorities now conducted this work at a distance of fourteen miles, the garbage being conveyed to the place of disposal in boats, by means of tight iron tanks.

Col. W. F. Morse described the process of "Disposal of the Garbage and Waste of the Columbian Exposition." All the offal of the restaurants and grounds is collected daily and conveyed to the Engle cremator near the southern border of the Exposition, where it is burned by fire.

Dr. J. Wright Mason, Medical Officer of Health of Hull, England, contributed a paper on "Cholera and its Management in Hull," a timely and practical paper written during the progress of the epidemic.

Hull is a seaport city of 290,000 inhabitants. It was visited by cholera in 1832 and 1849. In the latter epidemic one out of every 43 were attacked by the disease and 600 died. Impure water was the probable cause. At present the water is derived from wells bored in the chalk, and the other means of prevention consist of an efficient hospital for the isolation of infectious diseases, disinfecting stations, public baths, mortuary and garbage destructors, together with a system of notification of infectious diseases.

As important aids in the public management and control of the epidemic, Dr. Mason commended a cordial co-operation of the physicians, who were requested to report first cases promptly. Supplies of diarrhœa mixture were issued by the health authorities. Hospital accommodation, tents and ambulances were provided for all who should require them.

The following principles were laid down as essential to the sanitary welfare of seaport towns in regard to the possible importation of cholera.

(1) The medical inspection of vessels from infected or from suspected ports. Only the healthy should be allowed to land and these under careful supervision. Vessels should be carefully and thoroughly disinfected.

(2) The most careful attention should be given to the sanitary care of cities during the intervals between epidemics, and preparation should be made in anticipation of such epidemics, rather than during their actual existence.

A brief description of the first cases which occurred in Hull in the present epidemic was also given by Dr. Mason.

On Wednesday evening, Dr. Sternberg, Surgeon-General, U. S. A., gave a lecture upon "Pathogenic Bacteria," which was fully illustrated by micro-photographs shown by the stereopticon.

THURSDAY. — MORNING SESSION.

Dr. H. P. Walcott presented, for the Committee on National Legislation, a resolution to the effect that the American Public Health Association strongly urges upon Congress the importance of having some officer appointed by the General Government whose whole time shall be given to the supervision of the general sanitary work of the country, and that he should co-operate with the health organizations of the different States. This resolution was adopted.

Dr. Salmon, Chief of the Bureau of Animal Industry at Washington, presented a paper on "Tuberculosis and the Food-Supply," in which he stated that infected food was an important factor in the production of tuberculosis in man. He advised the inspection of all milch cows and of animals intended for slaughter.

Dr. M. Carmona y Valle, of Mexico, gave a paper on "Syphilitic Infection as a Vehicle of the Communication of Tuberculosis." He illustrated the subject by five cases which came under his personal observation. Ulceration of the throat, in his opinion, played an important part in such infection.

Dr. F. Gutierrez, of Mexico, read a paper upon the "Influence of Habitations upon the Propagation of Tuberculosis." He stated that the ratio of mortality from phthisis in Mexico to the total mortality was only six per cent., as compared with nearly twelve per cent. in the United States. He believed that the dryness of the air in Mexico was favorable to a diminished death-rate from phthisis, while the want of good ventilation, the absence of sunlight, the use of artificial light and the increased heat in the interior of hotels and dwellings in the United States, all favored the spread of the disease.

The poor in Mexico are poorly fed and have poor dwellings, but they have abundance of fresh air and sunlight and are comparatively free from phthisis.

These papers on tuberculosis were followed by an animated discussion.

Dr. Flick, of Philadelphia, opposed the theory of transmission by means of food infection as well as by means of syphilis. He believed that infected habitations were the chief source of transmission, and that such dwellings should be disinfected.

Dr. Orvananos, of Mexico, said that altitude was probably an important factor in producing immunity among the Mexican population.

Dr. Salmon expressed his opinion that the liability of taking the disease depended very considerably upon the number of germs received into the system, and that, in the case of milk, a point might be reached, where the dilution and consequent diminution of the number of germs would render them harmless. He thought that the enormous expense attendant upon the destruction of all infected animals would render such a practice impracticable. He would, however, advise a careful inspection, to ensure the prevention of the sale of infected meat.

Mrs. E. H. Richards, of the Massachusetts Institute of Technology, presented an excellent paper on the "Prophylactic and Therapeutic Value of Food."

Dr. Contraros, of Pueblo, Mexico, read a paper entitled "The Hygiene of Hair-Dressing and Barber-Shops." He referred to the possibility of the transmission of infection not only from the barber to his patrons, but also, through the medium of the barber and his utensils, from one patron to another. He specified the principal parasitic diseases of the hair and of the scalp, which are liable to transmission, and advised that all implements used by barbers should be sterilized by heat after being used in every instance.

A paper by Dr. Ernest Hart, "Objects of the National Health Society of London," was read by title.

(To be continued.)

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"THE MISUSE OF DRUGS IN MODERN PRACTICE."

A Reply from the Papoid Company.

New York, October 19, 1893.

Mr. Editor:—Our attention has been called to an article on page 239 of the Boston *Medical and Surgical Journal* of September 7, 1893, in which the author, under the caption of "The Misuse of Drugs in Modern Practice," describes and deprecates the methods of the modern pharmacist who has departed from the modest practices of his predecessors and "no longer contents himself with providing the profession with the drugs which its experience approves." Now "He aims to direct the medical art. He proclaims the virtues of new drugs, ignoring their dangers. He vaunts the superior qualities of his own wares. Imitating the business methods of his quack rivals, he scatters his circulars broadcast among the profession, containing promises of cure and certificates of results which would do credit to the advertising agents of the rival sarsaparillas." "His agents . . . enter our offices with the assurance of 'drummers' in a country grocery." "Samples are spread upon our tables." "We are told . . . that if we do not wish to be behind the times we must also give them an order." "Their medicines are always successful." They "have no use for unsuccessful cases." The writer, however, does not wish to be "understood as condemning all advertisements of drugs." "There are some firms whose publications are always welcome." As a specimen of [illegible] the writer of the above quotes several sentences from a recent pamphlet issued by us, entitled "Papoid Digestion" and thus by inference places us in the category of quacks and nostrum venders. As this inference is totally at variance with the facts as they exist, we feel that it is not asking anything beyond the limit of fairness if we request you to kindly publish our response to your readers.

In papoid we represent a definite pharmaceutical product, the properties of which are not, so far as we are aware, possessed by any other drug thus far placed before the medical profession. Kindly permit us to say that in advertizing this product it is our province, as chemists, to state chemical truths concerning it, and we have done so in the briefest and clearest language at our command. On the other hand, we have not, either in the pamphlet referred to or in any similar literature, made statements concerning the physiological action of papoid, except such as are quoted from the reports of medical men of high standing — such reports having been culled from reputable medical journals and text-books; and we claim that we have been strictly ethical in reprinting such reports.

As to the chemical statements contained in our pamphlet they are the utterances of Professor Chittenden, of Yale College, quoted from the "Transactions of the Connecticut Academy" (Sheffield Scientific School). We assert that all such statements are strictly true, and that we stand ready to verify them at any time. The balance of the pamphlet consists mainly of articles taken from the medical journals of this country, treating of the physiological action of papoid and written mostly by physicians of wide reputation. For example, we quote from Dr. Love who is at present Vice-President of American Medical Association; one of the incorporators of the Pan-American Medical Congress; Ex-Chairman of the Section of Pædiatrics, American Medical Association; Professor Diseases of Children, Marion Sims College of Medicine, etc.: Dr. Frank Woodbury, of Philadelphia, Professor Clinical Medicine in Medico-Chirurgical College, Philadelphia; Chairman of Section on Materia Medica and Pharmacy in American Medical Association; Fellow of the College of Physicians of Philadelphia; Member of Academy of Natural Sciences, etc.: Dr. Howard Lankester, President State Board of Health, Fisher, Minn.: Prof. T. M. Culver: Dr. Thos. K. Morton, of Philadelphia: Dr. Robert T. Morris, of New York, a man who more than any other individual brought to light the value of peroxide of hydrogen: Dr. A. M. Owen, Treasurer General of the Pan-American Medical Congress; Member Judicial Council of American Medical Association; Ex-President Mississippi Valley Medical Association: Prof. Andrew Jas. Park, of Chicago: Dr. Arch Dixon, President Kentucky State Medical Society; Ex-President Mississippi Valley Medical Association, etc.: Professor Lydston, of Chicago: Professor Larrabee, of Louisville: Professor Dumesnil, of St. Louis, whose name is known on both continents, and many others. In our pamphlet we have given the titles of the articles, the journals in which they appeared, and the dates, so that those who may wish can refer to the original articles. We thus claim that these utterances are worthy the attention of progressive medical thinkers.

The statement that papoid acts in acid, alkaline and neutral media, in combination with almost any drug, and at a wide range of temperature, is, we will admit, somewhat revolutionary in character and should be read by the profession with caution — if not incredulity; for physicians already know that the animal ferments possess no such action. Our pamphlet, however, is composed of quotations from men of high standing; and a tirade against the pamphlet and its contents is at once, not only an attack upon us, but also upon the utterances of medical men who are far better qualified to write upon the subjects which they discuss than some others are to criticise.

We believe that the progressive chemist is the valued handmaid of the progressive medical practitioner. Kindly permit us to say that we are chemists only, and as such we claim the privilege of calling chemical facts to the attention of medical men — facts which we presume the average busy practitioner has neither time nor opportunity to learn through original research. We have stated facts which we believe many of the members of the medical profession were not previously familiar with; and these facts being such as to attract the attention of many progressive medical thinkers, the result has been the appearance of conclusive clinical statements in the leading medical journals showing the physiological action of papoid. These statements we claim the privilege of quoting after receiving permission from the authors; and we have freely circulated reprints, [illegible] They should be of interest to any physician who claims to keep pace with medical progress; and if any of these reprints have fallen upon stony ground, it is a reflection upon the receiver rather than upon the author or the sender.

It is not true that our "representative has called upon" the author of this attack. It is not true that "we have forced samples upon him"; and if he ever received any it was because he asked for them. It is not true that "we have attempted to usurp the province which belongs to the physician." And it is not true that we ever, by word or implication, gave him or any one else the right to ascribe to us even by inference the statement that "We have no use for unsuccessful cases."

Permit us to say, in conclusion, that we propose to continue strictly in the ethical line previously followed by us, and are prepared to demonstrate the absolute accuracy of all utterances appearing over our name.

Very respectfully yours,
Johnson & Johnson, Chemists.

RECORD OF MORTALITY

For the Week ending Saturday, October 14, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	[illegible]	[illegible]	[illegible]	[illegible]	8.12	[illegible]	[illegible]
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.28	8.64
Brooklyn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10.06	—	[illegible]
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.16	2.20	[illegible]
Baltimore	[illegible]	—	—	—	—	—	—	—
Washington	[illegible]	[illegible]	—	[illegible]	[illegible]	4.08	6.12	9.18
Cincinnati	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	10.45
Cleveland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.80	[illegible]	[illegible]
Pittsburg	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nashville	[illegible]	[illegible]	[illegible]	—	[illegible]	—	[illegible]	—
Charleston	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	2.17	
Portland	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Worcester	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—	[illegible]
Fall River	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]
Lowell	87,191	[illegible]	[illegible]	[illegible]	[illegible]	13.80	[illegible]	—
Cambridge	77,100	—	—	—	—	—	—	—
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—
Springfield	[illegible]	[illegible]	—	[illegible]	[illegible]	14.28	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	33.33	[illegible]	—
Holyoke	[illegible]	—	—	—	—	—	—	—
Salem	32,233	[illegible]	[illegible]	[illegible]	—	11.11	—	
Brockton	[illegible]	—	—	—	—	—	—	—
Haverhill	[illegible]	[illegible]	—	[illegible]	[illegible]	7.14		
Chelsea	[illegible]	[illegible]	—	—	—	—		—
Malden	[illegible]	[illegible]	—	—	[illegible]	[illegible]		
Newton	[illegible]	—	—	—	—	—		
Fitchburg	27,146	[illegible]	—	—	[illegible]	—		
Taunton	[illegible]	9	1	11.11	—	—	[illegible]	
Gloucester	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—
Waltham	[illegible]	—	[illegible]	—	—	—	—	[illegible]
Quincy	[illegible]	[illegible]	[illegible]	—	[illegible]	—	[illegible]	—
Pittsfield	[illegible]	—	—			—	—	
Everett	[illegible]	[illegible]	[illegible]				—	—
Northampton	16,331	[illegible]		—	—	—	—	—
Newburyport	[illegible]	[illegible]		—		—	—	33.33
[illegible]	[illegible]					—		

Deaths reported [illegible] principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 457, consumption 284, acute lung diseases 203, diarrhœal diseases 166, diphtheria and croup 154, typhoid fever 59, scarlet fever 30, whooping-cough 19, cerebro-spinal meningitis 14, measles 7, small-pox 2.

From scarlet fever Pittsburg 8, Boston 6, Philadelphia 4, New York 3, Brooklyn and Cincinnati 2 each, Cleveland, Springfield, Haverhill, Quincy and Woburn 1 each. From whooping-cough New York 8, Philadelphia 3, Pittsburg 2, Boston, Washington, Cincinnati, Nashville, Worcester and New Bedford 1 each. From cerebro-spinal meningitis New York, Brooklyn, Malden and Gloucester 2 each, Boston, Washington, Cleveland, Worcester, Lynn and Somerville 1 each. From measles New York 2, Brooklyn, Boston, Washington, Milwaukee and Worcester 1 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending October 7th, the death-rate was 18.5. Deaths reported 3,656: acute diseases of the respiratory organs (London) 230, diarrhœa 193, diphtheria 88, fever 81, scarlet fever 68, whooping-cough 68, measles 30, small-pox (Bradford 10, West Ham 2, London, Wolverhampton and Birmingham 1 each) 15.

The death-rates ranged from 8.1 in Croydon to 32.2 in Wolverhampton; Birmingham 21.3, Bradford 20.2, Hull 22.2, Leeds 14.7, Leicester 16.4, Liverpool 23.2, London 17.9, Manchester 21.3, Newcastle-on-Tyne 21.4, Nottingham 15.6, Salford 21.5, Sheffield 19.8, Sunderland 23.6, West Ham 17.4.

METEOROLOGICAL RECORD,

For the week ending October 14, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches†
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 8	30.02	62	72	52	71	64	68	W.	S.W.	10	12	C.	C.	
M.. 9	29.80	66	79	54	68	42	55	W.	W.	10	20	F.	C.	
T..10	30.08	55	64	48	50	58	54	W.	N.W.	19	15	C.	C.	
W 11	30.24	53	62	44	62	64	63	N.W.	S.W.	7	9	C.	C.	
T..12	30.23	61	72	49	76	65	70	W.	S.W.	1	12	C.	C.	
F..13	30.08	60	69	52	67	89	78	S.W.	E.	7	10	F.	O.	
S..14	29.49	66	73	59	86	82	84	S.	S.W.	36	15	O.	C.	.80
☞														

* O., cloudy; C., clear, F., fair, G., fog, H., hazy; S., smoky; R., rain, T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 14, 1893, TO OCTOBER 20, 1893.

First-Lieut. A. N. Stark, assistant surgeon, now at Fort Clark, Texas, will proceed at once to Fort McIntosh, Texas, and report to the commanding officer for temporary duty with troops in the field at Carrizo, Texas.

First-Lieut. Robert S. Woodson, assistant surgeon, U. S. A., now temporarily at Fort McPherson, Georgia, will return to his proper station, Fort Barrancas, Florida.

Leave of absence for one month, to take effect about the 20th instant, is granted **First-Lieut. Merritte W. Ireland**, assistant surgeon, Fort Apache, Arizona Territory.

SOCIETY NOTICES.

New York State Association of Railway Surgeons. — The third annual meeting will be held in the Academy of Medicine, 17 West Forty-third Street, New York City, Wednesday, November 15, 1893.

Geo. Chaffee, *President*, Brooklyn.
M. Cavana, *Secretary*, Oneida.

The Surgical Section of the Suffolk District Medical Society hold its first meeting at 19 Boylston Place on Wednesday evening, November 1, 1893, at 8 o'clock.

Dr. Geo. L. Walton will read a paper on "Dislocation of Cervical Vertebræ: Report of a Successful Case."

Dr. Fred B. Lund will read a paper on "Tendon Suture."

Charles L. Scudder, M.D., *Secretary*, 1 Marlborough St.

Suffolk District Medical Society. — The stated meeting will be held at 19 Boylston Place, on Saturday, October 28, 1893, at 8 P. M.

Papers: Dr. C. F. Withington: "Medical Teaching Abroad." Dr. R. W. Lovett; "Surgical Operations upon Young Babies; A Report of Four Months' Experience at the Infants' Hospital."

Business: Election of a committee of five to prepare a list of candidates for officers of the Society for 1894–95.

Supper after the meeting.

Members are requested to notify the Secretary, at 188 Marlborough Street, of any error or change in address.

Notice of the meetings of each section is sent to those only who have notified the secretary of that section that they wish to join it. The secretaries of the sections are appointed at this meeting.

A. L. Mason, M.D., *President.*
James J. Minot, M.D., *Secretary.*

RECENT DEATHS.

James H. Bodge, M.D., M.M.S.S., of Newton Centre, died at the Boston City Hospital, October 19th, aged fifty-three years. He graduated from Dartmouth College in 1865 and from the Harvard Medical School in 1867.

Charles H. Fisher, M.D., Secretary of the Rhode Island State Board of Health, died at Buffalo, N. Y., October 21st, aged seventy-one years. He graduated from the Dartmouth Medical School in 1848. From his first election to the Rhode Island Medical Society in 1850, he served in the various offices and was made its president in 1877. He was several times State senator, and for some years was a member of the State Board of Education, as well as a trustee of the State Normal School from its establishment. From 1862 to 1865 he was State inspector of recruits for the Army and a member of the Board of Exemption. In 1878 the Rhode Island State Board of Health was organized and Dr. Fisher was unanimously elected its secretary, which position he filled until his death.

Algernon S. Coe, M.D., died at Oswego, N. Y., October 18th. He served as surgeon of the One Hundred and Forty-seventh Regiment, New York Volunteers, during the war, and as brigade surgeon three years, without the loss of a single day at his post.

BOOKS AND PAMPHLETS RECEIVED.

Erotopathia (Morbid Erotism). By C. H. Hughes, M.D., St. Louis. Reprint. 1893.

How to Treat Your Own Feet, a Treatise on the Human Foot, with Illustrations. By Charles Kahler, Surgeon Chiropedist. New York: Dr. P. Kahler & Sons.

A Practical System of Studying the German Language. For physicians and medical students for self-instruction. By Albert Pick, M.D. Part III. Newtonville, Mass.: E. S. Tanner. 1893.

The French Doctor's Book, Containing a Collection of 1,200 Favorite Prescriptions, by the Most Eminent Foreign Physicians. English translation. Copyright 1893 by Wm. von Bergen. Boston: Wm. von Bergen. 1893.

The Diseases of the Male Organs of Generation. By W. H. A. Jacobson, M.Ch., Oxon., F.R.C.S., assistant surgeon, Guy's Hospital; surgeon, Royal Hospital for Children and Women. With eighty-eight illustrations. Philadelphia: P. Blakiston, Son & Co. 1893.

Lectures and Essays on Fevers and Diphtheria, 1849 to 1879. By Sir William Jenner, Bart., G.C.B., M.D., Lond., and F.R.C.P., D.C.L., Oxon., LL.D., Cantab. and Edin., F.R.S., President of the Royal College of Physicians from 1881 to 1888; Physician in ordinary to H. M. the Queen and to H. R. H. the Prince of Wales; Consulting Physician to University College Hospital. New York: Macmillan & Co. 1893.

Sterility in Woman, Causes, Treatment and Illustrative Cases. Microscopical Studies in Pelvic Peritonitis. Diagnosis and Some of the Clinical Aspects of Gyroma and Endothelioma of the Ovary. Carcinoma on the Floor of the Pelvis. Colpo-Hysterectomy for Malignant Disease. Oophorectomy in Diseases of the Nervous System. By Mary A. Dixon Jones, M.D., Brooklyn, N. Y. Reprints. 1892–93.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., LL.D., F.R.C.P., Physician Accoucher to H. I. and R. H. the Duchess of Edinburgh; Professor of Obstetric Medicine in Kings College; Physician for the Diseases of Women and Children to Kings College Hospital; Consulting Physician to the General Lying-in Hospital and the Evelina Hospital for Children; Late President of the Obstetrical Society of London; Examiner in Midwifery to the Universities of Cambridge and London and to the Royal College of Physicians. Sixth American from the eighth English edition, with notes and additions. By Robert P. Harris, A.M., M.D., Honorary Fellow of the American Gynecological Society and of the Philadelphia Obstetrical Society; Corresponding Member of the Obstetrical Society of Leipzig and of the Royal Medico-Chirurgical Society of Naples, etc. With five plates and two hundred and seventeen illustrations. Philadelphia: Lea Brothers & Co. 1893.

Original Articles.

THE HYGIENIC ARGUMENT FOR CREMATION CONSIDERED FROM A BACTERIOLOGICAL STANDPOINT.[1]

BY [illegible], M.D.

At the time when the cremation movement was in its infancy [illegible] mode of the disposal of the dead was manifest, and the evils of intramural burial everywhere acknowledged. Thirty years ago few of the cities of the old world had any common water-supply. The inhabitants for the most part depended upon wells. These were frequently contaminated, and often became sources of epidemics; and it was much easier to lay the charge to some neighboring cemetery, than to the contamination of such wells by the sewage from neighboring houses. For, should the latter be proved, individual interests must be sacrificed and actual hard cash must be paid out by the owners of the adjoining property in order to remedy their defective drainage.

Now there are few cities of any size where there is not a general water-supply, and any contamination which produces anything like an epidemic arouses the citizens, and the boards of health are ready to see to it that the source of contamination is found and stopped, never minding the cost or discomfort of a few individuals.

The overcrowding of most of the churchyards gave great plausibility to this argument. The churchyards were usually small plots of ground around the church, and had been in use for very long periods of years. Usually they were in parts of the towns or cities where the population was especially dense, and where improvements in sanitation were slowest to make progress. Again, their use had gradually become confined to burials of the poorer classes from the neighboring parish, and single individual graves were very rare. In London it was the general custom to dig a deep grave, usually having to bore with a long augur to find a place where such a grave could be made without disturbing coffins still in a good state of preservation. When these deep common graves had been dug, they were kept open, or loosely covered with boards until such a time as it was filled to within a couple of feet to the top, the last coffin was then covered with a foot and one-half to two feet of earth. In fact, in London alone, with its immense population, the churchyard area in 1849 only amounted to about 218 acres, and in this there were annually over 50,000 people buried. Such a number would cause the whole space to be filled completely with bodies each decade.

The same condition of affairs was to be found all over the Continent, where the conservatism of the people and the scarcity of land caused the same graveyards to be used for centuries.

In this country the older graveyards in many of the cities became overcrowded early in this century, the most notable case being Trinity Churchyard in New York. Here the soil was so shallow that it was impossible to dig a grave so that the body should be more than eighteen inches to two feet below the surface. During the Revolutionary War the Hessians were employed to cover the churchyard with several feet of earth. Yet in spite of this, in the early part of this century, the stench from this graveyard was extremely bad; and during the cholera epidemic of 1849 the disease seemed to have a focus about this burying-ground. Several of the other old churchyards in New York and Copp's Hill Burying-ground in Boston became overcrowded, and had to be closed against further interments.

In spite of this horrible condition of affairs common to many places during the middle of the century, the number of epidemic diseases actually attributable to cemeteries is very small indeed. Adams, in the Sixth Annual Report of the Massachusetts State Board of Health, states that after a careful study of the reported epidemics due to graveyards, he only found two that were at all credible. One of these was in Barbary and the other in Italy; and from the account of the latter, it is doubtful whether it would stand the light of modern investigation. A circular sent at this time to five hundred physicians, evoked only eleven positive replies. Of the five in Massachusetts, four would not stand investigation, and the other could not be inquired into, because of the physician's having left the State. Of the answers to Dr. Adams from abroad, in one the deleterious influence was thought to be due to an overcrowded churchyard; but in this case no wells were involved, and the evil effects probably came from the foul air.

Dr. Cameron, Professor of Hygiene in Dublin, while having known of several cases of illness due to neighboring graveyards, and of several wells that were undoubtedly contaminated with nitrogenous material from similar sources, says: "I am disposed to believe that the injuries arising from badly kept graveyards are to be attributed to a far greater extent to the foul air, than the contaminated water. If the latter be very foul, it will, of course, produce diarrhœa, lowering the vital powers, and other effects caused by water containing simple decomposing organic material. I am of the opinion that water tainted by graveyards does not cause typhoid fever, or other zymotic disease."

Mr. Holland, Medical Inspector of Burials of England and Wales, states that in properly regulated cemeteries he has known of no sickness which appeared to be induced or aggravated by any such cemetery, though in overcrowded graveyards he had had numerous instances of mischief done to the inhabitants in the neighborhood.

In the same year (1874) Baginsky[2] could not discover a single case where the vicinity of a graveyard had caused an epidemic. Further, a series of investigations were made in regard to the chemical conditions of the water in the wells of churchyards in various cities by Wernher,[3] in which he found the water of the churchyards was purer than the wells of the town. Müller[4] also reaches the same results after a very complete investigation. Adams quotes from Professor Fleck[5] of Dresden, who in 1872, during the months of June to September, examined carefully the water from the nine wells of the cemetries, and also from the wells in the town. First, no injurious physiological effects from the cemetery water came to the author's notice, although in many instances the water of the wells was in constant use by the families of the gravediggers. In general there was no essential difference between the average well water throughout the city of Dresden and the analysis of the water from the nine wells in the cemetries. In Paris, water from a well near a cemetery had a sulphur-like taste, and was bottled and sold as a mineral water and obtained considerable repute.

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[1] [illegible]

[2] Leichenverbrennung von Standpunkt Hygiene. Quoted by V. [illegible]

[3] [illegible]

[4] [illegible]

[5] [illegible]

Zulger alone, to the contrary, reports a typhoid epidemic from a graveyard in Berlin in 1873. But a sanitary committee of Berlin (1882–1885) could not find that the burial places exerted any influence either upon the production or spread of typhoid fever.

All of this goes to show that no serious epidemics have been attributable to graveyards, even during the period in which there was the best chance for such to have taken place, owing to the utter disregard of sanitary laws and to the great overcrowding of the burial grounds.

Since 1880, a period in which there has been the greatest activity among scientific men in their desire to discover sources for disease and epidemics, I have been unable to find any well authenticated case of epidemic coming from any burial place, although an epidemic of cholera in Spain is reported as coming from an old graveyard where the victims of previous epidemics had been buried. From what we know of the source and origin of cholera, it does not seem probable that this case will stand investigation.

With the development of the science of bacteriology, a new force was given to the arguments of those who believed in cremation. The bacteria were the cause of disease. The body of the person, when buried, carried with it into the earth the pathogenic bacteria. These escaped from the body, found their way into the neighboring subterranean water-ways, and carried pestilence to the wells and water-supplies. Such was the *a priori* reasoning and it seemed extremely plausible. Therefore a number of attempts have been made to investigate the condition of the soil in its relation to germ life.

The first series of experiments of importance was made incidentally in the course of experiments made to determine the etiology of the anthrax. It was found by Pasteur that in fields which had not been used for pasturage for many years on account of previous occurrence of anthrax, when new herds were again let into the fields they were soon attacked by the anthrax bacilli and the plague again appeared. He accounts for this by the fact that the bodies of the animals which had died during the previous epidemic had been buried in the field, that the spores of anthrax had formed in their bodies, and that these spores had been brought to the surface by earthworms and were then taken up by the animals feeding on the grass, etc.

Koch, however, in his article, showed by a series of seven experiments that it was very rare that earthworms acted as carriers of spores. He placed a number of earthworms in a pot of earth filled with spores of anthrax, and then with precautions against contamination, inoculated mice with the contents of the intestinal canal of the worms. The time that the worms had been in the earth which contained the spores varied from five days to one hundred and ten days. In all the control experiments where the mice were inoculated with small particles of the earth, they died on the following day of anthrax, while only one of the mice inoculated from the earthworms died, and that was on the third day. The possibility of contamination from the earth adhering to the worm must, of course, be considered in this case.

But even if the earthworms may be poor carriers of the bacteria, Koch further showed that it was highly improbable that spores could form in the lower levels of the surface of the earth, where the animals would naturally be buried, on account of the permanent low temperature. Also, while it is unusual, if indeed it ever occurs, for spores to form in the living body during life, there were plenty of chances for spore formation to take place on the surface of the soil, which was always smeared more or less with the bloody discharges of the diseased animals, if it was not soaked with the infected blood of the animals, which were rarely allowed to be buried before their hides were removed. Hence, the earth's surface and the grass could be the source of the later epidemics. It is to be remembered that dead bodies are usually buried much deeper than the ordinary habitat of the earthworm. And moreover, earthworms do not feed upon dead animal material.

All of these arguments go to disprove Pasteur's earthworm theory and we are obliged to give up the supposition that spores are brought to the surface for the infection of man and animals by any such agency.

Koch's work was later substantiated by Kitasato, who made a series of observations[6] upon the possibility of spore formation in anthrax. He took, with aseptic precautions, the blood of mice that had died of anthrax and inoculated gelatine and agar tubes and placed them in the earth at various depths. This he repeated each month in the year, and a record of the temperatures at the various depths was carefully noted. Control tubes were made and kept at the room temperature, but no spore formation was seen in any of these cultures. From the results of these experiments it was shown that the anthrax bacilli at the depth of one-half a metre during June, July and August, and at a depth of one and one-half metres during July alone, formed spores. At the latter depth only a very few appeared. Also, during July, a few bacilli grew at the depth of two metres, but they had no spores; while at three metres below the surface there was no growth at any time. In other words, no bacilli of anthrax showed any growth when the temperature was lower than 14° C. At 15° C. a few spores began to be formed. No bacilli were found alive after a stay of four weeks in the ground, and some of the cultures were dead at the end of a week, others at the end of two weeks. If bacteria of decomposition were added, no anthrax could be found at the end of a week, even during July and August, at a depth of one and one-half to two metres.

Heser[7] investigated the bodies of sheep, goats, cattle and horses buried in the ground at various depths, which after a certain time were exhumed and examined for virulent bacilli by inoculation upon other animals. In this series there was, with one exception, a negative result, although a goat was dug up on the fourth day, a cow on the seventh, and another cow on the ninth day. The exception was a sheep, which lay for fourteen days in winter at a temperature of 6° to 8° C.

V. Esmarch also made a series of experiments with the bodies of animals placed in different conditions, buried in loam, in sand, at various depths, and also kept in water, the ice chest, the constant temperature apparatus and in the free air. In only one single case did the bacilli survive the death of the animal eighteen days, and that was in the body kept in an ice chest.

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[6] Zeitschrift für Hygiene, 1890, vol. viii.

[7] Zeitschrift für Thiermedicin., 1877. Quoted by V. Esmarch.

All these experiments were conducted to exclude oxygen as far as possible. To prove that spores were not formed in the bodies, a piece of meat was taken and also the body of a mouse. Into each of these spores of anthrax were introduced, with the result that after seventeen or eighteen days, inoculation showed the presence of the anthrax bacilli, thus proving that when spores were present before burial that they remained virulent.

It will be seen that all this work goes to support the original assertion of Koch, that spore formation rarely took place beneath the soil or in decomposing animals. Therefore the bodies of such animals are not a source of infection, if deeply buried.

What is true of anthrax is also true in a great measure of other specific, pathogenic organisms and the possibility of danger of infection in other diseases is lessened, because in a few of the ordinary bacterial diseases does the pathogenic bacteria form spores. V. Esmarch further concludes from his investigations that the greatest number of pathogenic bacteria probably cease growing soon after the death of their victim (though Frænkel and others had previously observed that a decided increase for a short time took place in certain cases). The disappearance occurs more rapidly the faster decomposition progresses. The specific bacteria are probably simply killed by the more vigorous growth of the bacteria of decomposition, by the absorption of oxygen and chemically by the production of products unfavorable to their development.

A similar set of investigations were undertaken by Dr. Petri,[8] and extended over a period from 1885 to 1891. It was his purpose to find out how much the dead bodies of animals, which were known to be full of pathogenic bacteria, were a source of danger to the living.

In all such cases the question necessarily arises, how far the deductions which are made from the bodies of small animals can be applied to larger animals. But so far as there has been any chance for comparison between the experimental animals and sheep, cattle, etc., there has been no great variation. Petri's experiments were made with the bodies of mice, guinea-pigs and rabbits, and were conducted with the greatest care, and, whenever possible, control experiments were made. The internal organs of the animals were examined; also the fluids in the coffins and the soil about the coffins.

Anthrax experiments were made on the bodies of mice. The first was buried in sterile earth and kept moist with sterile water. After fifty days they were disinterred and one of two mice inoculated from the internal organs died of anthrax after seven days, showing a very low state of virulence. In the other case, it was supposed that anthrax was found in the cover-glass preparations, but neither the plates nor the inoculated animals showed the presence of live anthrax. In one case, after a lapse of five years, one month and eleven days, one out of six inoculations gave a positive result, but neither feeding or plate cultures gave a similar result. In some manner spore formation must have taken place.[9]

Next, sixteen guinea-pigs were buried in wood and zinc coffins, which were exhumed and examined from time to time. These were buried in a chest, with about 15 to 20 c.m. of earth over them, and kept moist and at a temperature which varied from 5° to 19° C. Out of the sixteen experiments, three gave positive results. The first after three months, in wood; the second in a zinc coffin, after six months, two days; and the third after a period of three years, ten months (46 months). Inoculated with fragments of liver, two mice remained well, while two guinea-pigs died (!). In all the corresponding zinc coffins, the fluids and the internal organs remained perfectly sterile, so far as aërobic bacteria were concerned.

CHOLERA.

Nineteen guinea-pigs were killed with cholera bacilli and buried in wood and zinc coffins. From the wood positive results were reached on the sixth, seventh and ninteenth day, and in the zinc on the eleventh and twelfth days; afterwards negative. Also two animals were buried free, and being exhumed, one on the seventh day, and the other after three months and nineteen days — both gave negative results. Two were also put into water and allowed to stay, the first eighteen days, and the second two months and ten days; and neither the water nor the bodies showed any bacilli. An animal buried for two months and a half in very moist earth, was exhumed at the end of that time, and neither the soil nor the cadaver showed any signs of the cholera bacilli.

TYPHOID.

Twelve rabbits were killed and injected through the aorta with a bouillon culture of typhoid, and the presence of the bacilli in the extremities was demonstrated. These bodies were buried in a sandy hill in wood and zinc coffins. All the investigations gave a negative result. There was even no discoloration of the beautiful yellow sand; and though large numbers of the bacteria had been present, they could never be found, even in the fluids which could not escape from the zinc coffins.

TUBERCULOSIS.

Twelve extremely tuberculous rabbits were buried in wood and zinc. At the end of twenty-two days, and of two months and five days, the exhumation gave positive results. That which took place at the end of five months and six days gave positive results in the zinc alone, and after that the experiments were negative.

In general, it may be said that the fluids in the zinc coffins rarely contained the pathogenic bacteria. And in no case did the earth that had been soaked in the decomposing fluids, show the presence of the pathogenic bacteria. This is of special importance as regards the spread of disease through water-ways; and the question of whether the pathogenic bacteria last a few months more in a large cadaver is of little consequence as compared to this question, which can hardly be affected by the size of the animal. [This conclusion is not altogether in accord with the results of sewage filtration experiments, where it has been shown that the filter beds should be frequently renewed, or allowed to lie idle, in order to have perfect filtration. So under unhygienic conditions, where rapid decomposition takes place, it is possible to imagine a soil so overcharged with animal matter as to transmit bacteria direct to the ground-water.]

[illegible]

HYSTERECTOMY FOR CANCER OF THE CERVIX BY COMBINED ABDOMINAL AND VAGINAL DISSECTION.[1]

BY MAURICE H. RICHARDSON, M.D.,
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The following brief consideration of this subject, from the standpoint of a general surgeon and anatomist, will not, I hope, prove uninteresting.

In liability to recurrence after operation, uterine cancer equals, if it does not exceed, cancer of the breast. The reasons for this are to be found in the local malignancy of the uterine growth, a malignancy developing and extending as rapidly in the cervix as in the breast, and in the almost insurmountable difficulties encountered at its complete extirpation. Secondary infiltration of the broad ligaments — the earliest possible metastasis in cancer of the uterus — renders the entire removal of the disease impracticable, if not impossible; and were this invasion as universal as that of the axillary lymph-glands in cancer of the breast, no radical or dangerous operation upon the uterus would be justifiable. The surgical procedures, therefore, would be limited, and only those measures would be selected that relieve suffering and prolong life.

Clinically we do not find the broad ligaments invariably affected, even in cases of extensive local disease; on the contrary, in many instances no secondary infiltration whatever is found in separating the uterine ligaments. Not only by the absence of infiltration in these cases, but also by the numerous permanent cures following hysterectomy, are we justified in concluding that uterine cancer is infrequently associated with early metastases. Not that cancer of the cervix manifests as slight a malignancy as cancer of the lip in its early stages, for in some instances, at least, the former shows a tendency to rapid growth and invades the surrounding parts almost before its presence is known, or even suspected. Nevertheless, my experience leads me to believe that cancer of the cervix is distinctly less malignant in its early development than cancer of the breast.

In breast tumors the patient's fears lead more frequently to early consultation than in uterine disease, for the existence of the latter often remains unsuspected, the patient supposing her symptoms merely an excess of the normal physiological discharge. A natural tendency towards concealment gives us but rarely a chance to investigate and treat either disease in its earliest stage. Moreover, in both breast and uterine disease, pain is so frequently absent that no conspicuous symptom remains to call attention to these regions, so that a tumor may obtain considerable size in the breast before it is discovered, or the uterine discharges may become excessive or even offensive, before a physician is consulted. Hence, most cases of early uterine cancer are discovered by the physician in the course of treatment for symptoms in which serious disease is not suspected; while the occasional absence of symptoms allows breast tumors to become hopelessly extensive before there is any suspicion of their growth.

Cancer may extend from the cervix in all directions and invade the vaginal mucous membrane and the important structures lying in close relation with it. In fact, the epithelial infiltration must be very circumscribed not to involve also, in a hopeless entanglement, the bladder wall, the rectum or the ureters; yet the disease is occasionally limited to the internal layers of the cervix or to the body of the womb without appearing in the peri-uterine structures at all. But, unfortunately, cancer seldom confines itself in this manner; we must expect the contrary in most instances and find the disease spreading in all directions in hard and ulcerating masses.

It follows from clinical and pathological considerations that cases of cervical cancer favorable for extirpation and permanent cure are rare, that operations for relief have very decided limitations and that at best the outlook is gloomy.

From a brief consideration of the anatomy of this region, we shall find ourselves still more limited and unsuccessful in our efforts thoroughly to extirpate cancer of the cervix.

The analogy between cancer of the lip and cancer of the cervix is striking, clinically, in that both seem at first to have only a local malignancy, while both, when well under way, exhibit a rapidity of growth and area of metastases that is deplorable. In lip cancer, however, the nearest structures, the invasion of which makes interference well-nigh hopeless, are the submaxillary glands and the lower jaw, not to mention the body of the cheek. In uterine cancer, on the contrary, a peri-cervical extension of much less than an inch renders cure by excision absolutely hopeless.

A clear idea of the relations between the cervix, bladder, rectum, peritoneum and ureters is therefore of the greatest importance, not only for prognosis but for technique. The following brief description of their relations is based upon numerous dissections upon both the living and the dead subject, made with special reference to hysterectomy.

Anteriorly, the extravaginal portion of the cervix is separated from the walls of the bladder by areolar tissue, easily dissected by the finger after cutting the vaginal attachment. The intravaginal portion is separated from the bladder by the superior vaginal wall. The vagina is not so easily separated from the bladder as the uterus, being more intimately attached. When infiltrated, the vaginal mucous membrane is inseparable from the bladder wall, though the disease does not grow towards the vesical mucous membrane as rapidly as it spreads laterally.

Posteriorly, the cervix is separated from the rectum by the fold of peritoneum and vaginal mucous membrane, which together make the base of the pouch of Douglas. This interval varies somewhat in extent. Separation of the vagina and rectum is easy because they are connected only by loose areolar tissue, easily dissected with blunt instruments or with the finger. Separation of these structures, however, is not so easy as we go back, the vagina and rectum being more intimately connected near the cervix. As in the upper vaginal wall, malignant disease shows a greater tendency to spread than to penetrate; so that there may be a very extensive infiltration and ulceration limited to the posterior wall, the rectal mucous membrane apparently remaining intact. This fact I have observed frequently in advanced cancer of the cervix and vagina. The rectal mucous membrane, in many cases, is scarcely, if any, involved, so that it slips easily in all directions over the vaginal mass. Not that this is always the case, for we often find recto-vaginal fistulæ in advanced cancer; but it is frequent enough to justify us at times in operating where the vaginal mucous membrane alone is involved. The prognosis is very unfavorable, however, because we must literally shave the tumor in our dissection.

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[1] Read before the Obstetrical Society of Boston, June 10, 1893.

In the intimate relations between the ureters and the cervix, we find our most discouraging facts, both as regards prognosis and technique.

Entering the pelvis under the peritoneum, near the origin of the internal iliac artery, the ureters pass downward, forward and inward. Approaching the cervix they run directly forward on each side toward the superior vaginal wall. In their passage to the bladder they are separated from the cervix by a very short interval, varying in different subjects, but practically almost in contact with it. They are loosely placed in the surrounding tissues in this part of their course, and they may easily be isolated and drawn to one side. The distance between the ureters and the cervix may depend upon disease and upon the width of the cervix itself. In the blind manipulations of a vaginal hysterectomy, where nothing can definitely be seen, there is always danger of wounding these vessels. Vaginal hysterectomy, therefore, is not only hazardous because the ureters may be wounded, but it is also likely to fail of permanent cure, for the slightest extra-cervical infiltration must involve tissues in the immediate vicinity of these structures so essential to life.

The broad ligaments, extending outwards from the anterior and posterior surface of the uterus, are reflected at the pelvic brim, to which they are attached. Thin above, the duplication of peritoneum becomes widely separated as we approach the cervix. An antero-posterior longitudinal plane, passed through the ligament at its reflection from the uterus, makes, therefore, a triangular section, the apex of which is the Fallopian tube, and the base the lateral vaginal attachments.

Between the peritoneal folds at the apex of this triangle we have the Fallopian tube. As we descend close to the uterine body we find the peritoneal reflections gradually separated. In tying and dividing the attachments of these folds the tissues broaden, till, at the vaginal insertion, our clamps embrace a mass of considerable size. In vaginal hysterectomy the reverse is true. The most important structures involved in the operation — the arteries, veins and ureters — are situated between the lower portion of the peritoneal folds. From the position of the ureters, between these folds, always very close to the cervix, we cannot hope for a broad margin in the excision of cancer of the cervix, under any circumstances, as we may in cancer of the lip and cancer of the breast.

The dangers encountered in vaginal hysterectomy are wounding of the ureters and hæmorrhage. It is, therefore, desirable so to perform the operation that, first, the ureters may be avoided by as narrow a margin as possible; and, secondly, that the arteries and veins may be securely tied. Leaving for the present the question of septic infection, it is evident that vaginal extirpation of the uterus must be performed without a definite knowledge of the location of the ureters. They can only be avoided by clinging closely to the cervix and to the uterine body. This is very undesirable where it is necessary to remove the disease as radically as possible. In vaginal hysterectomy we grope between the ureters and not only run great risk of wounding them, but we do not give the disease as broad a margin as we otherwise might.

By the vaginal route, hæmorrhage is a conspicuous danger. If our ligatures slip, or our clamps break or come off, we may have, deep within the pelvic cavity, an alarming hæmorrhage which can only be checked with the greatest difficulty. Indeed, it is impossible at times to prevent a fatal hæmorrhage, even with the greatest skill and experience. Not that the control of bleeding is difficult in all cases, for we often find the uterus so movable that all the manipulations may be performed at the vaginal outlet. Where the uterus is large and firmly fixed, however, it is impossible to bring the broad ligaments within easy reach, and we must then apply long clamps, which are liable at any time to slip or to break. In difficult cases, therefore, we must expect formidable dangers and deplorable accidents.

The advantages of the vaginal operation lie chiefly in drainage.

By the suprapubic operation, in the Trendelenberg posture, we are able to determine the condition of the broad ligaments, to recognize a hopeless metastasis, and to dissect with precision. The slight dangers of this method are more than balanced by the thorough knowledge we may obtain of the nature and extent of the disease. In cases evidently hopeless the abdomen can be closed and a palliative operation by the vagina substituted. But if, by abdominal exploration, we find no contra-indications to a complete hysterectomy, we may proceed with much greater safety, and more thoroughly remove the diseased uterus and appendages. From the pathological standpoint, therefore, the abdominal route is preferable because we can remove not only the uterus and the cervix, but we can include the broad ligaments and the structures contained within their folds.

From the standpoint of the anatomist this operation is much preferable to the vaginal method. With the patient in the Trendelenburg position, a clean dissection with the knife or scissors may be made as far as the vaginal attachment. Starting at the pelvic brim, the structures may be successfully tied and cut until we approach the cervix, when by careful manipulations the ureter may be brought into view. The dissection from this point may be carried on as intelligently as a dissection of the common carotid. The ureters on either side may be brought into view, held out of the way by an assistant, and the vaginal attachment severed. The uterine arteries can be found by their pulsation, and tied. As we approach the vaginal attachment, however, it is very hard to tell just the limits of the disease. Up to this point the operation may be performed with great ease and with perfect safety. Separation of the vaginal attachments on all sides must now be made with great care if we would avoid wounding the rectum, the bladder and the ureters. During the prolonged manipulations necessary to avoid these errors, we run a considerable risk of a serious septic infection. It is to avoid these difficulties and dangers that I advocate the combined vaginal and abdominal dissection.

By the abdominal method the septic masses are constantly drawn toward the area that we wish to protect; by the vaginal method they are constantly drawn from that region. By the combined abdominal and vaginal operation the uterus may be delivered either through the abdomen or through the vagina. It makes little difference, however, which way is selected, because, having separated carefully the cervical attachments of the vagina below, the completion of the operation by the abdominal route is rapid, and the peritoneum runs little if any more danger of infection than by the vaginal route alone.

The method which I advocate as the safest and most rational procedure for the radical excision of uterine cancer is first to separate by clean incision the diseased cervix from the vaginal mucous membrane by as broad a margin as possible without wounding the rectum, bladder, or ureters. The incision should be carried through the mucous membrane until the areolar tissue is reached; then dissection should be carried on by the finger or by some blunt instrument until we are close to the peritoneum, care being taken not to open the peritoneal cavity. It is, of course, necessary previously to have disinfected as far as possible the cancerous ulcerations. The hands should now be thoroughly sterilized, and the abdominal incision made with a second set of instruments. Having, in the manner described, separated the broad ligaments and isolated the ureters, we may rapidly connect the vaginal with the abdominal incision. The uterus may be delivered through the vagina or through the abdominal wound. If the mass is too large easily to be delivered by the vagina, the abdominal route should be chosen; not that it makes any great difference where the exposure is so brief, especially if the intestines, in the Trendelenburg position, are abundantly protected by sterile gauze. After removal of the uterus the folds of the peritoneum may be united by continuous suture, or a gauze drain may be provided through the vagina. In my experience there has been, by the abdominal method alone, a mild sepsis in two cases; by the vaginal method alone there has been a fatal general peritonitis in one case; all other cases have recovered without complications of any sort.

In clean hysterectomies, I think a continuous suture should be applied; in septic operations a free dependent drainage should be provided by leaving a gauze drain in the vagina.

The prognosis as to recurrence in even the most radical operation upon a cancerous cervix is bad; for, under the most favorable circumstances, the margin of healthy tissues seems utterly inadequate. A small cancerous nodule in the centre of a large breast demands excision of the whole organ, and even then recurrence is the rule. An infiltrating epithelioma of the lip requires in its proper removal the broadest possible margin of healthy tissue; and if that margin is a close one we look upon recurrence as almost certain.

In uterine cancer, therefore, the prognosis is necessarily bad if there is any extra-cervical infiltration whatever; and while under these circumstances hysterectomy is justifiable, its performance cannot be strongly urged. If the vaginal disease is extensive, only local palliative operations, performed extra-peritoneally, are justifiable.

CONCLUSIONS.

The advantages of the vaginal method are:

(1) Less liability to peritoneal contamination.

(2) More intelligent and thorough dissection of the local disease.

Its chief objection is the difficulty in controlling hæmorrhage.

The advantages of the abdominal method lie:

(1) In a conclusive investigation of the disease itself — its local extent and its possible remote metastases.

(2) In the rapidity and safety by which the broad ligaments may be tied and cut.

(3) In the ease with which the ureters may be isolated and kept one side.

(4) In control of hæmorrhage.

Its chief disadvantage is the impossibility of thorough dissection and removal of the cervical portion of the disease.

The superiority of the cōmbined method is seen:

(1) In the intelligent and thorough dissection both of the local disease and the broad ligaments.

(2) In the certainty by which hæmorrhage may be prevented.

(3) In the protecting of the ureters.

(4) In the saving of time.

The combined method is applicable more especially to cases where the disease involves the cervix and a portion of the vaginal mucous membrane, and to cases in which the uterine body is large and fixed. It should also be employed where for any reason it may be difficult to separate the vaginal attachments.

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CASES OF EXTRA-UTERINE PREGNANCY.[1]

BY CHARLES W. TOWNSEND, M.D.

THESE cases were seen within the space of six weeks.

CASE I. C. C., twenty-five years old, came to me in the out-patient department of the Massachusetts General Hospital, April 11, 1893, and gave the following history: Her previous health had been good. She had been married five months, and had never been pregnant before. The catamenia, previously regular, occurred last in the normal manner, from February 10th to 14th. Between five and six weeks later, on March 25th, she was seized with cramp-like pains in the right side, and there was a slight bloody discharge from the vagina. On April 4th, more active flowing began, which still continued. A few days ago a piece (described like membrane) was expelled from the vagina. During all this time she has had occasionally sharp pains in the right side, with a feeling of faintness.

Examination showed the uterus to be slightly enlarged and freely movable. In the right broad ligament a mass was easily felt, the size of a tennis-ball, moderately firm and tender on pressure. Tenderness was also present on the left side, but nothing definite could be felt there.

The case was believed to be one of right-sided, extra-uterine pregnancy, with beginning rupture of the tube, and was sent into the house. Here she was seen by Dr. H. H. A. Beach, who agreed with the diagnosis, and performed laparotomy at 5 o'clock the same day, removing a partially ruptured right tube, and finding a moderate amount of free blood in the abdominal cavity.

During the five hours the patient waited before getting her husband's consent to the operation, her color became perceptibly paler, her pulse rose from 80 to 96, she had several sharp pains in her right side, and it was believed, as was afterwards found at the operation, that bleeding was taking place into the abdominal cavity, showing that longer delay might have proved fatal.

CASE II. Mrs. L., thirty-two years old, also nulliparous. Had always been delicate, having had nervous prostration seven years ago, but no uterine trouble as far as she knew. The catamenia had been rather irregular; but she menstruated normally last, on January 5, 1893, and not again till March 2d, when she began, as she supposed, to miscarry. On March 3d, she had severe cutting pain in the pelvis, "like pleurisy pain," and she fainted. This fainting was apparently not due to the pain, as she felt easier just before she fainted. The flowing was very slight. A week later, March 10th, the pain became localized in the right side of the pelvis. On this day she passed a piece of membrane the size of the thumb, and it was supposed then that she had aborted. Since then moderate flowing continued, with occasional remissions of several days, until she was operated on April 15th. The pain in the right pelvis extending into the leg, came and went at frequent intervals.

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[1] Read before the Obstetrical Society of Boston, June 10, 1893.

I was asked to take charge of the case on April 3d, or a month after the beginning of the supposed miscarriage. For the last week her temperature had ranged from 99° to 100° or 101°.

Examination showed the uterus slightly enlarged and pushed over to the left side, and a mass the size of a large hen's egg was felt in the region of the right Fallopian tube. This was tender on pressure; but a few days later the tenderness disappeared, and the left side became tender, an obscure sense of resistance developing there.

Dr. G. S. Greene, of Dorchester, and Dr. W. L. Burrage saw her with me in consultation at different times, and both agreed with me in the advisability of a laparotomy. The diagnosis was obscure, and although extra-uterine pregnancy was thought of, in view of the elevated temperature purulent salpingitis following miscarriage was believed to be the more probable diagnosis.

On April 15th, at St. Margaret's Hospital, Dr. W. L. Burrage performed laparotomy, and removed a tubal pregnancy of the right tube. The following is his account of the operation:

"Assisted by Dr. Malcolm Storer. Ether. Asepsis by shaving and soap-poultice previous night, and, at time of operation, soap and water and nail-brush to abdomen, vulva and vagina, followed by saturated solution of permanganate of potash and oxalic acid.

"Curetting: A plug of yellow tenacious mucus in os uteri. Uterus well forward in pelvis, and fixed. An exudation on the right, larger, and also on the left, smaller. Moderate divulsion. Curetting brought away a small amount of tissue. Cavity of uterus two and three-quarter inches deep, seemed to be empty.

"Cœliotomy: Incision in usual situation, three inches long. Very little oozing; walls thin. Omentum found to be adherent to bladder; easily separated, and fundus uteri presented in the wound. Patient placed in Trendelenburg posture. A mass in the right side of pelvis, size of closed fist, and made up of the ovary (normal in size), blood-clots (some of them partially organized), and a firm, hard body the shape and size of a hen's egg, apparently in the outer portion of the right Fallopian tube. Adhesions were broken up gradually, and the mass, with its sac walls of organized blood-clots, freed. The tube was tied off close to the uterus, and several adhesions were ligated with stout silk. Fair amount of oozing. On the left side the ovary and tube were held together by a mass of adhesions, the tube being somewhat thickened, the ovary normal except for the adhesions. There was also much old blood, some of which had extended forward of the fundus uteri into the bladder. The tube and ovary were removed by tying the broad ligament across with interlocking ligatures of stout silk, and a gaping portion whipped with fine silk. Considerable oozing. Patient lowered from Tredelenburg posture, and the abdomen flushed several times with hot salt-solution; toilet of peritoneum. Sterilized gauze packed into pelvis, one piece into each side, and incision closed with interrupted sutures of silkworm gut. Two stitches in lower angle of wound left loose for the gauze. Wound dressed with dermatol, gauze and collodion. Length of both operations one and one-half hours. Patient put to bed in good condition.

"The gauze was removed in twenty-four hours, under partial chloroform anæsthesia. The patient pushed the bed-blanket directly on the wound; and to this was due undoubtedly the mural abscess that developed in the lower angle of the wound during the next few days. Patient passed flatus per rectum in thirty-six hours, and did well, until, at the end of a week, she developed a neuritis in the right median nerve.

"May 8th, when she began to sit up, there was no evidence of any exudate in the pelvis, the uterus was free from adhesions, except some limitation of mobility of the fundus, apparently from its being attached to the abdominal walls. The incision had closed completely, except a shallow cavity at lower angle.

"The patient left the hospital well on May 20th."

The following is Dr. W. F. Whitney's report on the specimen:

"The specimen from the case of Mrs. L. consisted of both tubes and ovaries.

"One ovary and tube (the left) was more or less glued together by adhesions and old clotted blood, which seemed to be partly organized on the outer surface of the tube, which was slightly dilated near its end. The ovary was normal in size and contained numerous small retention cysts, but no recent corpus luteum.

"The other ovary and tube (the right) were covered by adhesions and clotted blood. Near the fimbriated end the tube was enlarged to the size of a small egg, and contained a firm dark-red mass, more or less streaked by whiter and slightly fibrous-looking lines. It was quite adherent to the wall of the tube, which was more or less thickened, except along the line of attachment where the structure was loose and villous in character. Microscopic examination showed the mass to be made up of clotted blood in which were entangled irregularly formed and fatty degenerated chorionic villi and clumps of large flat cells (decidual). No evidences of fœtal structure were found. In appearance and in structure the condition very closely resembles one of the so-called "fleshy moles," the product of a uterine abortion, and is without doubt the product of a Fallopian pregnancy. The ovary was of normal size, and contained numerous small retention cysts, but no recent corpus luteum.

"The scrapings from the uterus were simply blood and a little of the mucous membrane, but with no evidences of a decidual. The other pieces were simply masses of more or less decolorized and pigmented blood-clot.

"The case is one of Fallopian pregnancy, with hæmorrhage and early abortion.

"The conditions found on the surface of the uterus was probably due to a partial organization of the blood-clot.

"The specimen is entered under E. g. 25, and is most interesting, especially in relation to the condition of the material in the tube, which I shall study carefully after hardening."

The following case is added, presenting as it does many interesting points of resemblance with the other cases, although it was probably only a case of hæmorrhagic salpingitis.

CASE III. Mrs. T. was brought to me in the outpatient department of the Massachusetts General Hospital on May 19, 1893, by Dr. McKenty, of Waltham, from whom I obtained a very good history of the case, and had the advantage of his previous examinations, which he had carefully recorded. He had made a probable diagnosis of extra-uterine pregnancy, but had also considered the diagnosis of fibroid. The patient was thirty-six years old, a multipara, having had three children (the last eleven years ago) and two miscarriages (the last seven years ago). Her catamenia were previously regular, and from March 6th to 11th she menstruated as usual. On March 15th she again began to flow, and continued up to her coming to the hospital, the flow being generally slight, but at times copious. With the first flow on March 15th she began to have pain, sharp and cutting in character, in the right iliac region. After April 10th the pain was less severe and less frequent. She had attacks of feeling faint at the time of this pain. The pain extended down the right leg.

On April 9th she was examined for the first time by Dr. McKenty, whose record is as follows: "Uterus normal in position, and movable. Movable mass situated behind lower segment of the uterus, and connected with it by a band-shaped peduncle. At first this seemed like a prolapsed ovary, but careful examination revealed what I considered the ovary at its outer border. Left ovary in position. Sound passed full depth."

Dr. McKenty examined her again on April 18th and 26th, and on May 5th and 15th. During this time the mass grew rapidly, and it became more intimately connected with the uterus. At no time was there any fever or signs of inflammatory trouble.

My examination in the hospital, May 19th, showed the uterus slightly enlarged, and pushed over to the left side. A mass, oval in shape and of the size of a large hen's egg, was felt in the right broad ligament, connected with the uterus by a slightly smaller pedicle. The mass was rather soft, but not fluctuating, at the outer extremity; elsewhere hard, but not as hard as a fibroid tumor.

The diagnosis of extra-uterine pregnancy seemed by far the most probable diagnosis; and the patient was prevailed upon to enter the house. She entered the service of Dr. H. H. A. Beach, who considered extra-uterine pregnancy the probable trouble, and who operated three days later, on May 22d, removing the right tube, distended with blood and partially ruptured. The specimen was sent to Dr. Whitney, who was unable to find either chorionic villi, decidual cells or part of fœtal structure. By exclusion, therefore, he considered it a case of hæmorrhagic salpingitis.

All the patients made good recoveries.

THE following remarkable verdicts are reported as returned by English coroners' juries: "Man, aged forty-eight, died from stone in the bladder, which stone he swallowed when lying on a gravel path in a state of intoxication." "Child three months old, found dead, but no evidence whether born alive."

Clinical Department.

POISONING BY VANILLA.[1]

BY JAMES C. WHITE, M.D.

I WANT to make brief mention of a rare case of dermatitis venenata, at least rare in this part of the world. A man came into my room at the hospital not many days ago with a puffy face, eyes partially closed, and presenting upon one wrist and forearm various forms of inflammatory lesions — papules, general redness, and a few vesicles. I asked him what his occupation was, and he told me that he had been twice affected in the same way since he had been engaged in his business for the past two years. This business was the management of a vanilla commission house.

Now, poisoning by vanilla pods or beans, in the countries where this plant is cultivated, is reported as not very infrequent among the workmen. This plant is cultivated in Mexico, Central America and the West India Islands, and also in the East. It grows best in Mexico. The beans are collected, put through a "sweating process," are turned frequently under blankets, and sometimes submitted to artificial heat until they assume a dark chocolate or blackish color. In handling these pods many of the workmen have a dermatitis produced upon their hands and face, and this inflammation of the skin has been attributed to two causes. An acarus affects the pods, and formerly these cases were attributed to the irritative action of this little insect upon the skin. But this is very improbable, because the inflammation comes on too rapidly, and is of a different type from that produced by the presence of any animal parasite upon the skin. In the best variety of pods no artificial means are used for coloring them. When I was writing upon this subject a few years ago, I took occasion to visit the establishment of Mr. Burnett, and inquired about the workmen employed in his factory. He said that no cases of vanilla poisoning had ever occurred there, and he attributed this immunity to the fact that he used only the highest quality of pods. The greatest care is taken in the care of the highest-priced pods, and after they reach the United States they undergo often an additional treatment, if they are not quite cured. They come in sealed tin boxes. Now in the lower qualities of pods it is known that an artificial method is used for coloring them black, and that this material is the oil of the cashew nut found in the rind, called cardol. This nut is the fruit of Anacardium occidentale, and is grown in the West Indies largely, and eaten both raw and roasted. The oriental species is called the Indian marking nut, as it has the same property of turning black any substance with which it comes in contact that the juices of the poisonous forms of rhus possess, and it has likewise the same poisonous quality that they have, so that many cases of poisoning are produced by persons handling without sufficient care these nuts. Charles Kingsley, in his work on the West Indies, describes several cases where cooks and others have been poisoned by roasting them. Cardol is used to color the poorer qualities of vanilla pods, such as these upon this plate, which are a part of the box which produced the poisoning in this patient. They are of the poorer variety, and are worth about four dollars a pound, whereas the specimens in the other tray are worth about twelve dollars a pound. The color of both is about the same. There is no doubt, I think, that these poorer ones have been colored by cardol.

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[1] A communication to the Clinical Section of the Suffolk District Medical Society at its meeting February 15, 1893.

Now, as [illegible] very apt to happen [illegible]. I may state that I have this winter seen [illegible] case of poisoning by the cashew nut. A lady living in Cambridge had received from the West Indies some of these nuts, and in opening them she was very badly poisoned about her face and hands, presenting bullæ and vesicles and intense swelling lasting ten to fourteen days. There can be little doubt that these cases of so-called vanilla poisoning are from the cardol of this nut.

You may have heard of cases of internal poisoning by vanilla. When I was a student in Vienna, Professor Oppolzer used to say that patients could have any ice cream excepting that flavored with vanilla. Now it is known that cardol taken internally produces very serious irritative disturbance of the stomach, so that it is not improbable that these poorer forms of vanilla bean may have been sent to Germany, and that a possible poisoning by cardol from the ice cream flavored with vanilla may have ensued in some cases, which gave it the reputation it had in Vienna at that time.

I have never heard of any trouble from vanilla ice cream here, and supposed that it was a notion on the part of Vienna physicians. It is Dr. Shattuck's habit, he states, in suggesting ice cream for feverish children, to take pains to suggest that they had better have vanilla, as being more innocent than other kinds.

I might add that Mr. Burnett stated that he had never known an instance of vanilla poisoning by the internal use of his vanilla. He also said that his extract was largely used as a cordial, and that he had known of no trouble resulting therefrom.

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AN EXTENSIVE INJURY OF THE CHEST.

BY [illegible], M.D., LAWRENCE, MASS.

On October 28, 1892, Fred. A., eleven years old, was caught between two freight cars in South Lawrence. The train was shifting and he attempted to go between two uncoupled cars; but the engine backed at that moment, and he was caught between the couplers. The engine was immediately started ahead, and the boy taken out. Despite his injuries, he walked home, nearly an eighth of a mile, and a physician gave temporary treatment.

The case was placed in my hands, and I saw him the next morning for the first time. The patient was then in a state of collapse; no pulse; the body bathed in cold sweat; and the bed afloat with blood. With every inspiration bloody foam came from the wounds, back and front.

According to his statement, the coupler-pin had passed entirely through the body. I gave a gloomy prognosis; but under stimulating treatment he slowly rallied. A careful examination of his injuries showed that four of his ribs in front and three behind, were crushed in, forming compound, comminuted fractures. The anterior wound was about four inches long, and had been drawn together by stitches. The posterior was on the same level, but smaller.

In a few days the stitches were taken out, and a drainage-tube passed through from back to front. It was then possible to look directly through the chest and see the lung, partly collapsed, dilate with each inspiration.

The discharge of bloody serum for the first few days was very large, soaking through the antiseptic dressings in a few hours. This was followed by an equally large discharge of pus; but the boy continued to improve. He had a slight cough, which was very painful.

Three of the ribs which were broken at the anterior angle, gradually pushed their way through the skin, and protruded about an inch from the chest wall. The patient was etherized, all the loose fragments removed, the projecting ribs cut off, and the opening in the back enlarged. It was then possible to insert the hand in the anterior opening and examine the whole interior of the chest. The lung by this time had granulated and healed, and was much collapsed.

Healing was very rapid, and by May both wounds had completely closed. The chest wall on the injured side had collapsed so that it did not seem much thicker than a two-inch plank.

At present, August 10th, the boy is in good health, fat, with no cough. There is faint respiration on the affected side.

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Medical Progress.

REPORT OF PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.

BIOLOGY OF FIBROMYOMATA OF THE UTERUS.

Kleinwächter [1] from the study of forty cases of fibromyomata of the uterus, where he was able at longer or shorter intervals to make repeated examinations, has deduced the following conclusions as to their growth. He is unable to find any such law of growth as would enable him to estimate the age of a tumor from its size. They may grow very rapidly, and this is the rule in the majority of cases; exceptionally they grow slowly. Sometimes they have periods of growth, followed by periods of quiescence. It is rarely the case that before the menopause a tumor ceases to grow or becomes smaller. Ergotin may help in some cases, so, too, wasting diseases. Tumors sometimes diminish after the puerperium. The disappearance of fibromata after the menopause is by no means so common as has been supposed; not infrequently they increase in size, and it seems as if, at this time, there was the greatest danger of malignant degeneration. The cause of the different behavior of these growths is not clear. It may be due to a difference in the anatomical structure, according as muscular or connective tissue predominates. Also the original seat of the tumor or its germ may be of influence. Other causes may be its blood-supply and the presence of inflammatory processes in the neighborhood.

CURE OF MASTURBATION IN A WOMAN BY NEURECTOMY.

Dr. J. S. Eastman [2] gives the account of an aggravated case of masturbation cured by resection of the pudic nerve. The patient was a single woman of twenty-six years of age, who had masturbated since she was six years old. The indulgence was one or more times a week and even as often as six times in one day. For a while she indulged in coitus, though without satisfaction, yet was able to resist self-abuse while the opportunity for sexual intercourse lasted.

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[1] [illegible]

[2] Medical News, August [illegible]

When this was no longer the case she reverted to her former habit. She then sought medical advice. She was blistered, silver-wire sutures were placed through the labia majora, the electro-cautery was applied, ovariotomy, and finally, clitoridectomy, were performed, all without avail.

As a last resort, Dr. Eastman having found that she was more sensitive on the left side of the vulva than on the right, cut down on the left pudic nerve, and removed about three inches of it. The result was perfect. The patient gained thirty-four pounds in weight and was completely cured of her habit of masturbation.

VAGINAL LIGATION OF THE BROAD LIGAMENT FOR HÆMORRHAGE.

Dr. F. H. Martin,[3] in connection with a case where the uterine arteries as large as lead-pencils were pumping blood into a large bleeding fibroid, conceived the idea of ligating them from the vagina, where they can be easily reached. To avoid the blood being supplied by collateral circulation, he advocates tying the main artery back of the uterine branch, and by including *en masse* the whole base of the broad ligament to shut off any anomalous branches should they exist.

The article goes on to describe the distribution of the arteries in the broad ligament, and then describes the operation, which consists in an incision in the vagina one and a half to two inches long, over each broad ligament and at right angles to it, freeing it in front, laterally, and behind, then passing a silk ligature so as to include all pulsating vessels and tying it tightly, an inch or more away from the uterus and closing the vaginal incision. He gives the histories of two cases, in which he had operated, and while the immediate effect was good, it was too recent to judge of the ultimate result.

He advises this procedure under the following conditions:

(1) Acute hæmorrhage from the cervix from all acute and chronic causes, which cannot be readily controlled by mild measures, as (*a*) rupture of the cervix in childbirth, by operation or any other cause; (*b*) cancer of the cervix.

(2) Hæmorrhage from the body of the uterus as a result of abnormal growths: (*a*) fibromyomata; (*b*) sarcoma; (*c*) carcinoma; (*d*) intractable hæmorrhagic endometritis.

(3) For the purpose of changing the nutrition of myomatous tumors so that they will shrink in size, and when of small dimensions disappear altogether.

RECURRENCE OF CANCER OF THE UTERUS, ESPECIALLY BY LOCAL INOCULATION.

Winter[4] makes the statement that, even with the advances of the last fifteen years, we can show but seven per cent. of lasting cures. Recurrence is the rule, and, in the vast majority of cases, is from local inoculation, most often the result of the leaving of bits of cancerous tissue, either outside of the field of operation or in contact with some wounded surface.

To avoid such an occurrence, Winter warns against handling the diseased tissues with the fingers, against tearing the tissues and advises frequent irrigation. Where the disease is within the cervix or body, the uterus should be washed out and the os uteri sutured. Disease of the vaginal portion should be made harmless by cauterizing it and by treating it with corrosive sublimate and Paquelin. Such preparatory measures should be taken immediately before the main operation, which should be done after fresh disinfection, with new instruments.

INDICATIONS, TECHNIQUE AND RESULTS OF OPERATIONS ON THE APPENDAGES.

Schauta[5] presented a paper on this subject before the German Gynecological Association at Breslau in May, 1893, of which the following is a synopsis:

(1) The frequency of inflammatory diseases of the appendages is according to Schauta's own material, 17.8%.

(2) A permanent return to normal conditions is not to be expected when the tube as a result of inflammatory changes has become as thick as a finger.

(3) The diagnosis of the contents of the enlarged tubes (whether sterile, or containing gonococci, streptococci or staphylococci) cannot be made with accuracy either from the history, the examination, or the course of the temperature.

(4) Fever temperatures may be found before the operation, in cases of sterile contents, and completely normal temperatures where the tubes contain pus with streptococci or staphylococci.

(5) The indications for operative treatment are present when the tube is the size of the finger and severe symptoms are present; in every case, however, where pus is present in the tube.

(6) In case of the escape of pus during the operation, the immediate bacteriological examination of the pus is of great importance.

(7) Where the tumors are of moderate size, and no pus is seen during the operation, it should be performed in the Trendelenburg position, and after complete separation of all the adhesions of the tubes with the surrounding parts, and thorough unfolding of the broad ligaments, continuous ligatures should be placed through the broad ligament and the isthmus of the tube, and then the tube should be cut away.

(8) In the case of large tumors lying close to the abdominal wall the procedure is as follows: The peritoneum is opened, and if the opposite side is diseased to a less degree, the appendage of that side is removed; the large tumor is brought up against the abdominal opening and attached to the parietal peritoneum around a small circumference; the rest of the abdominal wound is closed. Then the pus tube is punctured with a fine trocar, a portion of its contents aspirated, and immediately subjected to a bacteriological examination. If the pus proves to be sterile the sac is immediately opened to the extent of the exposed surface, washed out, the peritoneal sutures separated and the sac removed in the usual way. Should the pus prove to contain strepto- or staphylococci, the operation is temporarily suspended, and only after four or five days when the peritoneal cavity is completely shut off is the incision and drainage of the tube carried out.

(9) In case of large pus sacs lying close to the vaginal vault, the opening from the vagina is indicated. Still in general the abdominal method is to be preferred since in the vaginal method one is denied the possibil-

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American Journal of Obstetrics, April, 1893.

[4] Archiv. fur Gyn., Band 44, Heft 3.

[5] Cent. für Gyn., No. 22, 1893.

ity of seeing the condition of the other side, or of operating on it, unless the method of total extirpation of the uterus according to Péan is followed.

(10) In cases of medium sized tubes (size of an egg to that of an orange) laparotomy with careful avoidance of opening the sac is to be carried out. Should the sac burst, the pus should be immediately examined. If sterile, or containing gonococci the abdominal wound may be closed as usual; if containing strepto- or staphylococci Douglas's pouch which has been in contact with the pus should be drained after the method of Mikulicz.

(11) The draining of Douglas's cul-de-sac is effectual first by drawing off the secretions, but principally by the speedy formation of adhesions which separate the part to be drained from the rest of the peritoneal cavity.

(12) The mortality of Schauta's 216 cases from February, 1887, to April, 1893, was 13 or 6%. Two of these, however, died of pneumonia.

(13) The mortality of the cases of operations on the tubes where no pus or only sterile pus was found was 2.8% (four out of one hundred and forty-four); the mortality where gonococci were found in the pus was 9% (three out of thirty-three); the mortality where strepto- or staphylococci were found was 20% (three out of fifteen). Of the cases of the last category, with escape of pus, of six drained, one died, of five not drained, two died; of cases of laparotomy without escape of pus, and a second operation later, and of vaginal opening (four cases) none died.

(14) For the estimation of the final results, Schauta has reports of 121 cases. One hundred were free from any disturbance, in 17 cases there was marked improvement, in four cases the old troubles persisted. The percentage of cures therefore was 82.6%.

THE PALLIATIVE TREATMENT OF CARCINOMA OF THE CERVIX UTERI.

Sänger[6] says that on taking a historical view of the methods of treatment of carcinoma of the uterus, it is noteworthy that long before the total extirpation of the diseased organ was thought of, C. v. Braun was able to show 20% permanent cures with the galvano-cautery wire, a percentage which, according to Winter, has only increased to 25% after total extirpation. It is a sad fact that only one-fourth of the patients come to the gynecologist in time for a radical operation. Cases which are far advanced, that is to say, where the disease has invaded the vesico-vaginal septum, the tissues around the cervix and more remote portions of the pelvic connective tissue, can only be treated palliatively.

Palliative treatment is either operative or non-operative. The last comprises astringent disinfecting injections, tamponing with soluble specifics, or the use of powders and caustics, and medicated injections.

The most favorable method is the use of caustics after thorough curetting. The course is as follows: curetting, cauterization with Paquelin, and after the separation of the slough, tamponing with chloride of zinc. This is applied in a solution of two parts to three of water, dropped upon thin layers of cotton, these well squeezed out and laid upon the granulating surface, and the vagina filled with dry cotton.

In conclusion, Sänger gives a new method which consists in the burning out the cervix with the thermo-cautery knife, not from the surface of the cancer but from the side of the healthy tissue. The technique is as follows: a broad speculum is used for the posterior vaginal wall. What remains of the cervix is seized with forceps and drawn down. First, a circular separation of the vaginal vault, then under control of the catheter, of the vesico-cervical septum, then of one parametrium, of the retro-cervical connective tissue, and finally of the other parametrium. Gradually this is carried on up to the peritoneum, then the cervix is burnt square off, and the mucous membrane of the body of the uterus cauterized as far as it can be reached.

Occasionally must the bleeding vessels be tied. Then an iodoform gauze tampon, and after the separation of the slough, cauterization with chloride of zinc. Of five cases so treated, only one showed a recurrence, the first having been nearly three years free.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular meeting, June 10, 1893, the President, **Dr. Charles M. Green**, in the chair.

Dr. F. B. Harrington read a paper on

INTRAPERITONEAL CYSTOTOMY,

in which he showed the great advantages of this operation in giving a large and clear view of the bladder field.

Dr. M. H. Richardson considered the operation a distinct improvement on the ordinary suprapubic method. The objection might be raised that there was more danger of sepsis. He did not believe that urine is aseptic, but in the method described of using gauze in the Trendelenburg position, he considered this danger very slight, certainly less than in operations where the alimentary canal was opened. The great advantage of the operation was that one could see to work intelligently and this advantage counterbalanced any disadvantage there might be. He intended to try the operation, and expected good results.

Dr. H. H. A. Beach said that the operation certainly seemed a very practical one. As to the septic danger, he saw no more than in salpingitis. It was certainly an important method where ample light in the interior of the bladder was needed. He suggested, in addition to the precautions advised, the use of a dentist's rubber dam slipped over the bladder.

Dr. S. J. Mixter was so fortunate as to see Dr. Harrington operate in this manner, and was impressed with the good view of the interior of the bladder and the ease with which a new growth could be removed. Some years ago he saw a case in Vienna where the bladder was opened in the same way for an enormous stone that filled up the entire viscus.

A temporary packing with iodoform gauze in the abdominal cavity might be necessary in certain cases to prevent the escape of urine, the packing being left in twenty-four hours, until first intention was obtained.

As to the septic qualities of urine it was the case that extravasation of urine, behind a stricture, was surely followed by abscess. Of course, the urine was foul in these cases, but it generally was when the bladder had to be opened. Hence, contamination of the peritoneum would be likely to cause peritonitis.

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[6] [illegible], No. 41, 18[illegible]

Dr. H. H. A. Beach mentioned a case where the round of a chair entered the rectum and tore into the bladder through the prostate. Here, with a healthy bladder and urine, the patient escaped peritonitis.

Dr. F. B. Harrington said, that, as to the urine, there was no doubt that foul urine was septic, and he thought that any urine allowed to stay in the abdominal cavity would set up peritonitis; but where it was at once wiped away he did not think the patient would suffer. The rubber dam suggested by Dr. Beach he thought would answer very well in some cases. By this operation it was very easy to take out a section of the bladder an inch wide, as in cases of epithelioma; and he was much impressed with the ease with which the whole bladder field could be viewed and operated on.

Dr. M. H. Richardson read a paper on

HYSTERECTOMY FOR CANCER OF THE CERVIX BY COMBINED ABDOMINAL AND VAGINAL DISSECTION.[1]

Dr. F. B. Harrington said that the combined method promises increased advantages. In either of the older methods it was difficult to avoid the ureters, the cutting of which was frequently the cause of death.

Dr. J. G. Blake said he himself was in the habit of curetting and cutting off as much of the disease as he could, keeping it thus under subjection, and relieving the distressing symptoms. This palliative operation is simple, and without risk to the patient, while hysterectomy was, at its best, by the combined method, a much more dangerous operation. Moreover, he had found, on looking up the subject, that the ultimate results were no better by the radical operation, all the patients being dead inside of five years. He would therefore prefer the simple palliative operation.

Dr. J. R. Chadwick said he had done seven or eight vaginal hysterectomies and two abdominal ones. He had found that the results, in his own and others' experience, from the abdominal operations not as good as from the vaginal, notwithstanding the greater dangers of this latter method, in which one was obliged to work in the dark, and where it was so difficult or impossible to make the vagina aseptic.

Dr. Beach said he thought comparison of statistics on these two operations was hardly fair, for the abdomen is generally opened in the severest cases.

Dr. M. H. Richardson said that the operation had a very limited field, He had seen an enormous number of cancers of the uterus, and of these only four where he believed the operation was justifiable.

Dr. Charles W. Townsend reported

CASES OF EXTRA-UTERINE PREGNANCY.[2]

Dr. H. H. A. Beach said that the surgical side of the interesting cases presented by Dr. Townsend demonstrated clearly certain advantages to the patient from an early diagnosis and a prompt exploration of a pelvic cavity under suspicion. It was of the first importance that an operation of the magnitude of a laparotomy, which also involved the possibility of an increase of hæmorrhage already existing, should be undertaken, if a choice could be made, at a time when the general condition promised rapid recovery. Such a condition was not likely to be associated with the anæmic and debilitated patient enfeebled by successive hæmorrhages, with or without the addition of a septic element due to the putrescence of clot which might have been effused into the pelvic peritoneum or into the broad ligament. So unfavorable an element in the case was to be avoided only by an early removal of the clot, which was as likely to complicate the healing process as it was the operation. Other important advantages accruing to the patient through early surgical treatment were the ample time afforded for critical and careful examinations, such as would hardly be permissible in desperate cases where life hung on a few moments, more or less, in the preparation for operation; and last, but by no means least, the deliberation with which the most rigid antisepsis could be applied throughout an operation. Inadequate antisepsis in these cases, unless practically impossible, was almost criminal; and we all knew the value of time in that part of the preparations. It was hardly necessary to allude to the great advantages in the use of the Trendelenburg position in these cases. The intestines were so rapidly and easily moved from the field of operation that he did not need to urge its value for those who had used it and seen it used. After the toilet of the peritoneum, the wounds were closed with deep stitches of silkworm gut, apposing the peritoneal surfaces with superficial stitches of fine silk.

In addition to the cases reported by Dr. Townsend, he added the notes of another that was sent to the hospital by Dr. J. R. Chadwick. The patient entered the hospital May 5th, with the history of pain in the stomach, and indigestion, for about a month. She had taken cold in the early part of April, while menstruating (second day). A few hours after, she noticed that the flowing had ceased, and she was seized with severe pain in the pelvis. Hot applications relieved the distress, but did not bring on flowing. She was able to go out later in the evening to the theatre. Two days later, flowing appeared, without clots. Was feverish, and feeling poorly during the rest of the month. In the last week of April the old pain returned with greater severity, and after a night of excruciating suffering she sent for her physician, who treated her during the week, and, as the pain continued severe, called Dr. Chadwick in consultation, by whom she was referred to the hospital.

Upon entrance her temperature was 101.5°, and her pulse 110. This condition quieted down to normal, with poulticing and hot douching. As soon as the tenderness had subsided so that an adequate examination could be made, there was evident an enlargement of the right Fallopian tube, and a larger mass below it and extending toward the posterior cul-de-sac. The menstrual dates were not certain. The last child was eight years old, and there had been opportunity for pregnancy. There was no history of continuous flowing. The uterus slightly enlarged. Laparotomy advised. Upon opening the abdominal cavity the right tube was seen distended by clot, which was just upon the point of rupturing backward into the peritoneal cavity. The tube was tied off and excised; as it was lifted, a second cavity was found, extending downward between the layers of the broad ligament, and forming the larger mass before alluded to. It was distended with nearly a pint of dark coagula, which were carefully removed, and the cavity sponged until it was dry, after which the abdomen was tightly closed without drainage. The temperature rose to a fraction above 100° on the second day, and after that ranged about normal. The wound healed solidly, and all the stitches were removed on the seventh day.

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[1] See page 436 of the Journal.

[2] See page 438 of the Journal.

Dr. S. J. Mixter reported

A CASE OF OVARIAN TUMOR WITH TWISTED PEDICLE; OPERATION, RECOVERY.

He also reported

A CASE OF FIBROID OF THE UTERUS; HYSTERECTOMY, RECOVERY.

Specimens were shown.

Dr. F. B. Harrington said he had been taught that a pregnant fibroid uterus would take care of itself; but this was not always so. He had recently seen a case of multiple fibroids of the uterus where both mother and child died. He regretted that he had not removed the uterus at an early stage.

Dr. J. G. Blake mentioned a case of fibroids that miscarried, and it was with great difficulty that he could get out the placenta and membrane, as he had to curette around corners, so to speak. The patient finally recovered.

Dr. C. M. Green said there had been a number of cases of fibroids complicating delivery at the Boston Lying-in Hospital. He recalled one case he had seen with Dr. Boardman, where the pelvis was at first entirely blocked up; but the tumor receded, and the patient was delivered. In another case the same thing happened. And in a recent case, it seemed impossible for the child to be born; but the tumor receded, the child was delivered, and by the time the patient left the hospital, the fibroid had so diminished in size there was but little remaining.

Cases of fibroid tumors might or might not go to full term. The great majority did so, and got on well. There had been probably five cases at the Lying-in Hospital where the tumors were so obstructive that an abdominal operation was thought of, but all delivered themselves through the natural passages.

He would doubt very much whether Dr. Mixter's case would have gone to full term.

Dr. J. R. Chadwick had seen fifteen or twenty cases of fibroids complicating pregnancy; and with one exception they all went to full term. There was a little tendency to uterine inertia and hæmorrhage, but he considered it a happy thing for a fibroid uterus to become impregnated, for in a large proportion of the cases the fibroids diminished in size after delivery.

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AMERICAN NEUROLOGICAL ASSOCIATION.

NINETEENTH ANNUAL MEETING, LONG BRANCH, N. J.
JULY 25, 26 AND 27, 1893.

[illegible] No. 17, page [illegible]

TABES AND SYPHILIS.

Dr. H. Sachs, of New York, assumed that recent statistics of Erb and others proved the close relationship between syphilis and tabes. This was established furthermore by:

(1) The frequent occurrence of general paresis with tabes, and of tabes in the course of general paresis.

(2) The occurrence of symptoms in the course of tabes which are often due to syphilis: the ocular palsies, loss of pupillary reflexes and even the lightning pains.

(3) The effect of mercurial and iodide treatment upon many of the symptoms of tabes.

The writer attempted a clinical differentiation of cases of tabes which are due to an active syphilitic process; among these he considered those which exhibit complete loss of reflex contractility of one or both pupils, and ocular palsies. He reported at length a case of typical tabes, in which on post-mortem examination a more recent syphilitic process was superimposed upon an old typical sclerosis. He next referred to the way in which syphilis might cause a spinal sclerosis. He gave reasons for thinking that this was largely due to degeneration brought about by syphilitic disease of the blood-vessels to the spinal cord. Altered states of the blood might be the prime cause of the change in the blood-vessels.

Dr. Preston regarded the syphilitic process as an arterio-sclerosis. Rarely is there hyperplasia of neuroglia, without changes in the cells or nerve fibres. The tabetic process probably begins in the blood-vessels. Traumatism seemed to be a most important etiological factor. He had seen improvement and relief of pain from the use of nitro-glycerine.

Dr. Mills looked upon the active lesions described by Dr. Sachs as probably causative of the sclerosis. Preceding the development of the sclerosis there may be lepto-meningitis and disease of the vessels, which, if attacked early, might be relieved or removed; but the sclerosis once established, recovery is impossible. Posterior sclerosis often advances at intervals by jumps, and these jumps may be sometimes coincident with, or they may follow the revival of active syphilitic processes.

Dr. Parsons referred to two cases of syphilis followed by insanity and subsequent development of spinal symptoms.

Dr. Seguin still adhered to the idea that syphilis was only a predisposing cause for the groundwork of tabes. Certain cases occur that were undoubtedly free from any history or evidence of syphilis.

Dr. Knapp mentioned a case of primary syphilis being superadded to tabes of two or three years' standing.

Dr. Spitzka did not doubt that cases of tabes existed without syphilis. He had called the attention of the Association to the same pathological condition about eight years ago.

Dr. Walton thought the frequency of trauma in the production of tabes was overestimated. The ascending degeneration resulting from transverse lesions of the cord or from fracture can hardly be regarded as a typical tabes. If we could get at the real facts in all cases, the cases in which syphilis existed without our being able to elicit the history would more than counterbalance those in which we may mistake a chancroid for a sign of syphilitic infection.

Dr. Gray said that there was an anatomical explanation for every symptom in tabes. In all cases he had seen he could differentiate between spinal syphilis and tabes.

Dr. Sachs did not claim that spinal syphilis is the same as tabes. We should never omit prescribing the most active anti-syphilitic treatment in the early stages of tabes. He did not believe every case was due to syphilis. In the large majority of cases syphilis was the prominent factor.

A NEW PEDODYNAMOMETER.

Dr. Wm. C. Krauss, of Buffalo, exhibited a new pedodynamometer. The apparatus consists of a wide heavy belt, its inner surface padded so that its adjustment around the waist will not be uncomfortable. A heavy webbing is looped through the belt passing over the shoulders, which helps to retain the belt in position. A common dynamometer is connected with the belt by means of a strong adjustable strap, permitting it to be lengthened or shortened according to the stature of the patient. Connected with the dynamometer is a stirrup, the base of which is padded for receiving the foot. Pressure exerted upon the stirrup will be registered upon the dial of the dynamometer, and the exact strength of the extensors of the leg can be thus ascertained. The apparatus can be applied either in the standing or recumbent posture. The leg should be flexed about ninety degrees at the knee. To tell the strength of the calf muscles, the strap should be lengthened and the foot flexed upon the leg.

INFECTIOUS ENDOCARDITIS WITH GENERAL SEPTICÆMIA COMPLICATED WITH MULTIPLE NEURITIS.

This paper was a joint communication by Drs. James H. Lloyd and David Riesman, of Philadelphia. It was founded on the report of two cases.

The first case was in a man who was admitted to hospital with a typhoid type of fever which had continued for three months, and was complicated with multiple neuritis. The diagnosis of typhoid fever was excluded. The neuritis was irregularly distributed. The patient gradually developed an aortic regurgitant murmur, with water-hammer pulse. Later, a purpuric eruption appeared. A diagnosis was made of infectious endocarditis with secondary septic neuritis. At the post-mortem, immense vegetations were found on aortic valves, with infarcts in the spleen and in one kidney. Sections of the spinal cord and nerves were shown, exhibiting slight posterior sclerosis in the cord and extensive inflammation in the nerves.

The second case, also in a man, simulated typhoid fever, with yellow-colored stools. At the post-mortem, multiple abscesses in the brain, a large embolus in the left brachial artery and an infarct in one kidney were found, dependent upon a giant growth of vegetations as large as a pullet's egg attached to the inner coat of the aorta, overhanging the orifices of the innominate, carotid and subclavicular arteries.

Dr. Dana regarded the septic origin of neuritis of much importance. He cited the case of a young man with symptoms of rheumatism not responding to antirheumatic medication. Pyelitis developed in two or three weeks, followed by multiple neuritis affecting all extremities. It is well known that multiple neuritis in this country is most frequently due to alcohol, and not of microbic origin. These forms of neuritis have a different clinical history. Some cases have begun with a history of multiple neuritis, and have then shown symptoms of locomotor ataxia or other spinal cord affection. There is also a class of cases where the neuritis extends and ultimately involves the spinal cord.

Dr. Dercum agreed with Dr. Dana's views and believed posterior sclerosis occasionally followed multiple neuritis. He asked if septic symptoms preceded the neuritis in Dr. Lloyd's case with history of alcoholism; to which Dr. Lloyd answered yes.

TUMOR OF THE ANGULAR GYRUS.

Dr. G. L. Walton, of Boston, reported a case of tumor involving the angular gyrus and extending into the temporal, occipital and parietal regions. The symptoms were temporal and occipital headache, vomiting, paralysis of the left-abducens from pressure, double optic neuritis, hemianopsia, word-blindness, aphasia and word-deafness. Operation was attempted by Dr. Richardson, of Boston. The tumor, however, proved too large and diffuse for removal. The patient lived two months with comparative relief of pressure symptoms, including abducens paralysis. Toward the end, the right hand and arm became somewhat paretic. The autopsy showed the growth to be a glioma.

Dr. Seguin suggested that the ocular symptoms were probably not due so much to lesion of the angular gyrus as to involvement of the fibres of the fasciculus opticus which lie immediately under it. The lesion being rather deeply placed must necessarily involve the white fasciculi.

Dr. Walton agreed with Dr. Seguin that the hemianopsia was due to affection of the optic radiations on their way to the occipital lobe. The early appearance of mind-blindness together with red spots in the field of vision suggested early cortical irritation in the region of the angular gyrus.

If the symptom mind-blindness is considered due to affection of association fibres, we are justified in assuming the association fibres implicated to be those running to the angular gyrus.

CONGENITAL CEREBRAL HEMIPLEGIA WITH AUTOPSY.

Dr. E. D. Fisher, of New York, read the history of a case of infantile cerebral hemiplegia of congenital origin. The symptoms were a complete right hemiplegia, with marked atrophy and exaggerated reflexes, epilepsy and imbecility. The cranial measurements showed morbid deficiency in the binauricular diameter and facial length. At the autopsy, the left hemisphere was found much atrophied. The right cerebellar hemsphere was also atrophied. The microscopical specimens showed a decrease in the number of cortex cells, but those present were not much diminished in size. There was some loss of acuteness of the angles of the cells but little pigmentary or granular changes. The cord was but slightly affected. He believed that this would seem to show that in some cases we may have a fair amount of normal cerebral structure even when there is such pronounced cerebral disease.

Dr. Sachs said that in the cases in which motor areas present developmental defect, degeneration does not necessarily occur.

LESION OF THE THALAMUS AND INTERNAL CAPSULE.

Dr. Charles K. Mills, of Philadelphia, contributed the notes on a case in which there was a lesion of the thalamus and internal capsule.

The patient had an apoplectic attack in 1877, and died in 1892. The symptomatology of the case, summarized, was hemianæsthesia, paresis with contractures not marked, inability to recognize position of the affected limbs. Hemianopsia, and all affections of the special senses were absent, as were also athetoid and choreoid movements. Autopsy showed a hæmorrhagic cyst which had destroyed about two-thirds of the substance of the thalamus, including the entire external tubercle and a large portion of the pulvinar. The anterior extremity and the internal and inferior surfaces of the thalamus were intact. The lesion has invaded to a slight extent the posterior arm of the capsule.

TUMOR OF THE OPTIC THALAMUS.

Dr. Wharton Sinkler, of Philadelphia, read a paper on this subject, and presented the specimen from a case with the following history:

The patient was an unmarried woman, forty-six years of age, who was in excellent health up to January, 1893. Her first symptoms were somnolence and loss of mental vigor. Her manner was indifferent and listless. In April there was some aphasia, and, later, paresis of the right side of the face, unsteadiness of gait, and awkwardness in the use of the right hand. When first seen by him, there was marked paralysis and partial anæsthesia of the right side of the face, but no impairment of sensation of the arm or leg. There was decided mental hebitude but no loss of memory. She could not walk on account of unsteadiness. The knee-jerks were exaggerated. The temperature was subnormal, and the pulse from 48 to 60. The pupils responded to light and accommodation. There was no nystagmus or hemianopsia and no change in the fundus oculi.

The symptoms increased in severity, the temperature rose rapidly, and the patient died May 25th. There had been no convulsions.

Post-mortem showed skull and membranes healthy. Cortex normal in color and consistency. The left optic thalamus was the seat of a growth as large as a hen's egg, which encroached upon the corpus striatum and posterior part of the internal capsule. The tumor has not been examined microscopically, but is probably a fibroma.

The points of interest are the hysterical symptoms which were present at the onset; the fact that the anæsthesia was confined to the face; and the question which arose as to the possibility of operation.

These two papers were discussed together.

Dr. Dana had two cases, one with tumor and another with softening in that region. Somnolence was a prominent symptom. The phenomenon of somnolence is characteristic where the posterior portion of the optic thalamus and the neighborhood of the corpora quadrigemina were involved.

Dr. Seguin observed a patient with probable tumor in this locality, with somnolence which was increased by the use of iodide of potash. He asked if such effect of the iodide had been observed by any of the members present.

Dr. Dana was familiar with a case where the iodide acted as a hypnotic.

Dr. Gray had noticed that iodide had produced somnolence in a case of cerebro-spinal meningitis.

Dr. Leszynsky thought that iodide only acted indirectly as a hypnotic by relieving the pains of syphilis.

Dr. Sinkler remarked that in his case the somnolence diminished after the administration of the iodide.

THE LOCALIZING VALUE OF APHASIA.

Dr. George J. Preston, of Baltimore, read a paper upon this subject, and called attention to the fact that aphasia has hardly commanded its proper place in the domain of cerebral localization. The centres for the speech processes, and the visual and auditory centres, were described. In connection with word-blindness, two cases of hemianopsia were related, one with autopsy, in which there was no word-blindness, as might have been expected. A case of mixed aphasia was related and the brain exhibited. The case showed absolute motor aphasia, together with word-blindness; and yet the lesion was confined to the third frontal convolution, the occipital cortex showing no disease. The general value of speech disturbance, as an aid to localization, especially in disease or injury of the brain, was discussed. A case was reported in which there was a general speech disturbance, with distinct mental symptoms; patient was at times maniacal. Upon the strength of the general disturbance of the speech processes, the skull was trephined over Broca's region, and the under surface of the dura found covered with blood. This case was mentioned to show how valuable speech disturbances may be, although very general in nature and not belonging to any recognized variety of aphasia.

SPINAL NEURASTHENIA.

Dr. Leonard Weber, of New York, presented a contribution upon this subject. He objected to any single plan of treatment, as too much routine, and not likely to be of permanent service to the patient, while a proper combination of the well-known methods based upon careful individualization were apt to be of greater benefit.

In the grave forms of neurasthenia caused by mental and physical overwork, the prognosis so far has not been good, even as to relative recovery. If the reports can be trusted, it would seem that we have in hypnotic suggestion a remedy of extraordinary power in some of these cases.

In conclusion, he related the history of some cases of severe neurasthenia brought about by protracted mercurial inunction, and another caused by prolonged daily use of small doses of Carlsbad Salts. Both recovered at the end of about a year.

THIRD DAY. — THURSDAY.

OBSERVATIONS IN A CASE OF MYXŒDEMA.

Dr. Wm. C. Krauss, of Buffalo, read a paper with this title. He reported a case of myxœdema in a woman fifty-three years old, whose mother was afflicted with symptoms similar to the patient's. The patient had always been in good health up to her forty-sixth year, although she had never perspired and the secretions as saliva, nasal mucus and milk were always scanty. Following upon an accident, her face, body and extremities became swollen, her hair suddenly disappeared from all parts of the body, and she was troubled with severe pains (especially through the temples) and a tired, all-gone feeling, incapacitating her for all kinds of manual labor. She further complained of a feeling of coldness even in midsummer. Her hands were dry, harsh and scaly; her face waxy; her eyes puffy and swollen. Her temperature ranged from 95.4° F. to 97.4° F. Her pulse, soft, regular and uniform, varied from 81 to 88 per minute. The œdema-like swelling did not pit on pressure. Urine normal; no albumen at any time. The only drug that acted beneficially was the perchloride of iron.

The author experimented with thyroid glands of sheep, feeding her for six weeks, but could detect no improvement whatever. Another case seen in consultation was being treated with desiccated thyroids, also without benefit.

SIMULATION IN TRAUMATIC NERVOUS DISEASES.[1]

Dr. Philip Coombs Knapp, of Boston, in reading a paper with this title, said that although many men will simulate disease if it be to their advantage, we rarely find successful simulation of the various traumatic nervous affections. Until recently few cases have been reported by neurologists; most of the old cases were reported by general practitioners whose knowledge of nervous diseases was limited.

In non-traumatic hysteria and neurasthenia we see many symptoms which would lead us to judge that the symptoms did not really exist. Many persons unjustly accuse the victims of these diseases of pretending to be ill, when really the malady is a serious one.

Contraction of the visual field, anæsthesia, tremor, disturbances of the reflexes, circulatory disturbances and Mannkopf's symptom are to be regarded as important objective signs. Few simulators can have intelligence enough to withstand a searching examination by a skilled neurologist.

Furthermore, a man can keep his attention fixed on any subject only for a very brief time; and if he must be prepared to defend his simulation of half-a-dozen different symptoms, he will inevitably be tripped up by unexpected tests applied when his attention is diverted.

Three cases were cited in which the defence claimed that there was simulation, but in every case objective evidence proved the reality of the disease.

Out of fifty cases where claims for damages had been brought forward, only two could be regarded as simulating, and few as exaggerating, and in most of these there was little reason to suppose any deliberate attempt at fraud.

Dr. Mills believed absolute simulation very infrequent. The cumulative exaggeration of symptoms was comparatively frequent, however. A few people can simulate a type of insanity or traumatic neurosis, but cannot easily simulate all the symptoms and signs. He was in favor of the convex-lens test for amblyopia instead of prisms in these cases. He did not consider malingering of common occurrence.

Dr. Gray thought many cases supposed to be simulating are simply offering to the trained eye symptoms indicative of possible simulation. He related a case of traumatic neurasthenia cured by one one-hundred-and-twenty-fifth of a grain of atropine taken for two days.

Dr. Field considered simulation rare. Gross exaggeration was common in these cases. In almost all there is some exaggeration of the symptoms.

Dr. Lloyd regarded the symptoms of traumatic neurasthenia as nothing but the interparoxysmal symptoms of hysteria. Because a man develops hysteria after an accident, there is no reason to believe that he must be a simulator.

Dr. Seguin said the influence of the attending physician is often pernicious to the patient. He may not actually coach him, but he suggests. Some patients take advantage of a pre-existing morbid affection. The absence of treatment is responsible for a continuance of the symptoms of traumatic nervous affections. We should be allowed to examine these cases unexpectedly, unguardedly and thoroughly, and not when sympathetic physicians or counsel are present. He protested against Dr. Lloyd's remarks about the unity of hysteria and traumatic neurasthenia.

Dr. Knapp, in conclusion, said that he had seen cases with minor exaggeration, in contrast to Dr. Field's cases of the grossest exaggeration. He agreed with Dr. Seguin regarding the absence of treatment, but he had had a number of cases where treatment had been early and properly instituted. He could not agree with Dr. Lloyd's style of nomemclature.

STAINING WITH NIGROSIN.

Dr. Seguin exhibited a specimen stained with 1 to 2000 nigrosin, a method he had used years ago, but neglected to publish. One of the advantages was that specimens may be safely left in the solution for twenty-four hours.

THE MICROBIC ORIGIN OF CHOREA WITH A CASE.

Dr. C. L. Dana, of New York, read the history of a case of chorea, with autopsy.

The patient, a man of twenty-six, had had chorea since the age of fifteen. The attacks came exactly like those of ordinary chorea of Sydenham. At first there were intermissions, but the disease finally became chronic. The spasmodic movements were general and violent. There was no heart disease or rheumatism. The patient died from exhaustion. Post-mortem showed macroscopically a conspicuous chronic lepto-meningitis, involving the vertex of the brain. Microscopically this was found to be mainly a proliferation process, without exudation or much cell-infiltration. In the superficial layer of the cortex there was cellular infiltration and degenerative changes. At this point a diplococcus was found. Full details were given of this by Dr. Brooks, the bacteriologist. The micro-organisms were found only in the deep layer of the pia and the superficial part of the cortex. In addition, there were found peculiar hyaline bodies in the three outer layers of the cortex, and less numerously in the basal ganglia. There were evidences of meningeal irritation, vascular disease (arteritis) and nerve-root irritation in the medulla and upper part of the cord. The lower part of the cord was not examined.

ELECTION OF MEMBERS.

The following named gentleman were elected to active membership: Dr. Brower, of Chicago; Dr. Burr, of Philadelphia; and Dr. Diller, of Pittsburg. Dr. Arnold Pick, of Prague, was elected an associate member.

PAPERS READ BY TITLE.

"The Genesis of Hallucination, Illusion and Delusion," by Dr. H. A. Tomlison, of St. Peter, Minn.; "The Diagnosis of General Paresis," by Dr. L. C. Gray, of New York; "A Report of Two Cases of Friedreich's Disease," by Dr. Frank R. Fry, of St. Louis; "The Metapore or Foramen of Magendie in Man and in the Orang," by Dr. Burt G. Wilder, of Ithaca; "Observations on the Relation of Chorea to Rheumatism," by Dr. C. Eugene Riggs, of St. Paul; "Experiences in the Use of Testiculine and Cerebrine," by Dr. J. J. Putnam, of Boston; "Peripheral Paralysis after Surgical Operations," by Dr. V. P. Gibney, of New York; "Traumatic Brachial Plexus Paralysis in Infants," by Dr. Wm. M. Leszynsky, of New York.

ELECTION OF OFFICERS.

The officers elected for the ensuing year were: President, Dr. B. Sachs, of New York; Vice Presidents, Dr. F. X. Dercum, of Philadelphia, and Dr. P.

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[1] See page 318 of this volume of the Journal.

C. Knapp, of Boston; Secretary and Treasurer, Dr. G. M. Hammond, of New York; Councillors, Dr. E. C. Seguin, of New York, and Dr. J. H. Lloyd, of Philadelphia.

In the evening a banquet was given by the Association, at which nearly thirty members were present.

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Recent Literature.

A Text-Book of Medicine for Students and Practitioners. By Dr. Adolf Strümpell. Second American edition, translated by permission from the second and third, and thoroughly revised from the sixth German edition, by Herman F. Vickery, A.B., M.D., and Philip Coombs Knapp, A.M., M.D. With editorial notes by Frederick C. Shattuck, A.M., M.D. With one hundred and nineteen illustrations. New York: D. Appleton & Co. 1893.

The first American edition of this text-book of medicine was published in 1886. Its reception and continued popularity have justified the undertaking of the translators and editor; and its increasing use, as well as the numerous changes in facts and opinions brought about by the last six years, have demanded a second edition. The position occupied by the book in Germany is shown by the fact that it has reached a sixth edition, the fifth having been exhausted in the course of one year.

This translation is used as a text-book or as a work of reference in some twenty-eight medical schools in America. The present edition contains an entirely new chapter on influenza; quite important changes and additions have been made in the chapters on cholera, malaria, diseases of the nose and larynx, syringomelia and diabetes. In the present American edition the editor has omitted some notes, changed others, and added some new ones.

Those who know the previous edition will desire to have this one, and those who want a first-rate medical text-book, and did not have the previous edition, certainly require this. We know of no better book of its kind.

Recent Developments in Massage. By Douglas Graham, M.D. 12mo, pp. v, 128. Second edition, with seventeen illustrations. Detroit: George S. Davis. 1893.

This little volume of the Leisure Library is rather a supplement to the author's larger work, than an independent treatise on massage. The author has collected many new cases, showing various affections in which massage has been tried. The most important chapter is that on the use of massage in sprains, dislocations and fractures, in which considerable evidence is brought forward in behalf of the early use of massage, in place of the absolute immobilization now in vogue.

A Physician's Pocket Chart-Book. By J. A. Howkins, M.D. New York: Bailey & Fairchild. 1893.

This little book of charts, of a size to be carried in the pocket, will undoubtedly prove of considerable use in the keeping of clinical notes.

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SEROTHERAPY.

Egasse discusses Serotherapy in a memoir not yet completed.[1] His article is of value rather as being a summary of progress already achieved than as containing original matter. Old cultures of human tuberculosis injected in dogs, render them immune against the strongest new cultures; the blood-serum of these dogs confers immunity against tuberculosis if injected in other dogs; in fact, it is not only preventive but curative, modifying or arresting the disease in animals already tuberculous. The animals under experimentation were dogs and guinea-pigs; the principal experimenters have been Bernheim, Richet and Hericourt. The serum of immune dogs has produced marked amelioration in all stages of tuberculous disease, and in no case was there consecutive fever, as after injections of tuberculine. Bernheim has applied this treatment to the human subject in one hundred and five cases, injecting ten cubic centimetres of the arterial serum of an animal rendered refractory; he reports favorable results from this treatment.

Richet and Hericourt have found that the intraperitoneal transfusion of the arterial blood of a dog confers on rabbits and guinea-pigs immunity, not only against bacteria, but against charbon and other germ diseases; they also demonstrated the possibility of retarding and even arresting tuberculosis by the intraperitoneal injection of the blood or serum of dogs that had been "vaccinated" and thereby rendered immune. Tuberculosis in birds also vaccinates the dog against human tuberculosis. Their article emphasizes "the salutary action exercised by the blood of a vaccinated animal on the course of tuberculosis." They also cite the case of a tuberculous patient who had been treated eighteen months by serum injections, and who was on the fair road to recovery. Stimulated by these successes, De Dominicis has been treating chlorotic and tuberculous patients by intravenous transfusions of the blood of a healthy dog. The result was excellent in the case of three chlorotic girls, who experienced rapid amelioration. Four tuberculous patients were treated in a similar way; of these, two soon died, and the other two became speedily better, with return of appetite and strength, and cessation of fever.

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[1] Bull. gén. de thérap., September 15 and October 1, 1893.

Egasse affirms that the serum of the dog possesses very remarkable tonic and stimulant properties, but the salutary effects which it produces in tuberculosis "do not testify to any specific, ante-tuberculous quality." "It purifies the organism, ameliorates the general state, and thus puts the patient in better condition to resist the infection."

Tommasoli has tried local injections of the blood serum of dogs in the treatment of lupus. He has obtained some amelioration, but no cures.

With regard to tetanus, there is no need of repeating what has been before published on several occasions in this Journal. The experiments of Behring and Kitasato, of Tozzoni and Cattani and others, are now sufficiently known. There is no doubt that in animals immunity has been obtained against the tetanus-poison by serum injections, but no such encouraging results have yet been experienced in man. Recently in France, Renon, Chief of the service of Dieulafoy, subjected two tetanus-patients to "repeated and large injections" of immunized serum. Both patients died. Grancher, Polaillon, Anger, Letalle and others have reported similar failures. Barth and Mayet, on the contrary, report a case of grave tetanus in a young man of eighteen years cured by the injections of the serum of an immunized horse; chloral and bromide were, however, given conjointly in large doses. The same may be said of Schwartz's patient.

More recent still is the case reported by Riccardo Gattaï, of a boy fifteen years old, in whom tetanus declared itself after a wound in the hand by the point of a compass. The ninth day, 10 cubic centimetres of the blood of an immunized hare were injected, "followed in the evening by an injection of 50 centigrammes of the antitoxine of the dog." The injection was several times repeated and the recovery was speedy and complete.

Roux and Vaillard have treated seven patients: two recoveries and five deaths. They find that the reaction under antitoxine is the same in both animals and men. The treatment has failed in grave cases of tetanus. It might have been successful if begun earlier. The prognosis depends on the extent and intensity of the lesions at the moment when therapeutic interference is attempted. These writers persist in declaring that the employment of antitoxic serum is at present the only rational treatment of tetanus, and the injections are the more successful, the earlier they are practised.

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CONGENITAL DEAFNESS.

In the care and instruction of deaf-mutes the question whether the deafness is acquired or congenital is often of great importance; and J. K. Love, in an article in the Glasgow *Medical Journal*, makes a study of the relative statistics of congenital deafness.

Even admitting that the pathology of congenital and acquired deafness differs, it still matters little whether the disease took place before birth or in the early months of life, for the latter cases soon are as dumb as the former. If surdism were always congenital the study of its pathology, though interesting, would hardly be of practical value, for congenital deafness is a finished state before it is detected. Of more importance is the amount of deafness.

The general impression that nearly all deaf-mutes are quite deaf is a decided error. On the contrary, "almost no deaf-mute is quite deaf."

The statistics as to the relative extent of acquired and congenital deafness vary much; from one series in which out of 489 deaf children 423 were reported born so, to another in which but 117 out of 279 were congenitally deaf. All the more recent statistics, German and others, show that on careful inquiry the acquired cases are found to be the more numerous.

In obtaining this information, the fact to be sure of is not whether the child ever spoke, but whether it ever heard or not. "The difficulty of ascertaining the presence of hearing in early infancy has been exaggerated; for long before speech is developed mothers have proof of the presence of hearing, and in nearly every case where the parent is closely questioned, the truth can be ascertained." The careful examination of all cases during the last two years leads to the conclusion that a majority of deaf-mutes are born hearing — the ratio being about 65.3 to 34.7.

Many interesting figures are given concerning the deaf-mute couples in Glasgow, of whom there are seventy-five; six of them have deaf-and-dumb children. Direct heredity of deafness was marked in many of the cases. The statistics of cases studied, both by the writer and others, do not prove that consanguineous marriages cause deafness in the offspring; but there is sufficient reason to discourage the intermarriage of the congenitally deaf. There is no proof that other circumstances, such as want and dipsomania, have any specific connection with the cause of deaf-mutism.

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THE GOOD FORTUNE OF THE MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY.

At the Annual Meeting of this Society, on October 26th, the Treasurer announced the receipt of the first payments from a testamentary gift of the late Elisha R. Ashton of Boston. By his will, Mr. Ashton directed his executors to place in the hands of trustees a very large sum, of which the income should be paid, *in perpetuo*, to such charitable societies as he had selected as suitable objects of his bounty. The amount received by the Society as yearly income from this source is expected to be about one thousand dollars; this year it was $999.75. Twenty-five other charitable societies receive, each, the same amount.

This munificent bequest, which does infinite credit to the good judgment of the testator and to the prudent care of his chosen agents, added to the Fund already accumulated from the subscriptions of its members and from other generous gifts by benefactors who have approved its work — places the Medical Benevolent Society in a position to enlarge the number of its beneficiaries as may become necessary.

One special feature of the Constitution of the Society, which has been highly commended, is: that its benefits are not limited to its own membership as in the great proportion of relief organizations, but are freely extended to worthy Fellows of the Massachusetts Medical Society and their families who may fall into distress, through no fault of their own. Such worthy cases are frequently brought to the notice of its Council, and are sought out and relieved, after careful inquiry, by temporary relief, or by permanent annuity, according to the exigencies of each case. At the present time there are fifteen annuitants who quarterly receive aid from this Society.

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MEDICAL NOTES.

Yellow Fever. — The yellow fever epidemic at Brunswick, Ga., continues unabated, the new cases numbering from thirty to forty each day. Up to the present time there have been 750 cases and over 40 deaths. The population of Brunswick is only 4,000. At Jesup no new cases have been reported, and there are now but a few patients under treatment.

An International Chemical Congress. — The Belgian Chemical Society is organizing an International Chemical Congress, to be held at Brussels, in August, 1894. The chemistry of food-stuffs is to form the subject of special discussion.

Paris Medical Faculty. — Considerable discussion is at present going on among medical circles in Paris, both at the Academy and in the medical journals, as to the propriety of private practice by the professors of the Medical Faculty. There seems to be a growing feeling that they should not, but that their whole time should be devoted to the scientific instruction of men who are to be made accomplished physicians. The interruptions of private practice it is claimed prevent the best results of study or of instruction. On the other hand, the importance of correcting theoretic and laboratory conclusions by careful observation and experience in the care of disease is urged by the friends of the practising professor.

BOSTON AND NEW ENGLAND.

Harvard Medical School. — The legacy of $6,000 given by Claudius Marcellus Jones has been devoted to the establishment in the medical school of a scholarship bearing his name, with an income at present of $250 a year.

Diphtheria. — The numerous cases of diphtheria in the Dorchester wards, of which mention was made last week, have continued to increase. A focus seems to exist around the Mather Grammar School, some fourteen cases having occurred within 800 rods of the [illegible] children attending the school. The plumbing of the building is said to have been for some time in need of repairing, but so far nothing has been done to improve the condition.

New Building for the Insane at Middletown, Conn. — The trustees of the Hospital for the Insane at Middleton, Conn., have decided upon the plans for the new building for which the legislature granted $100,000 at the last session. It will be used wholly for the mildly chronic insane, and will accommodate 250 patients. It is to be built of brick and brownstone walls, with "slow-burning construction" interior. Active work will be begun in the early spring.

NEW YORK.

New York County Medical Society. — At the eighty-eighth annual meeting of the Medical Society of the County of New York, held October 23d, the following officers were elected for the ensuing year: President, Dr. Seneca D. Powell; First Vice-President, Dr. Henry D. Chapin; Second Vice-President, Dr. Egbert H. Grandin; Secretary, Dr. Charles H. Avery; Assistant Secretary, Dr. Wm. E. Bullard; Treasurer, Dr. John S. Warren; Censors, Drs. Alexander S. Hunter, Charles H. Knight, F. M. Warner, Frederick Peterson and Auguste Caille.

Examination for Appointments to the State Insane Asylum. — On November 16th there will be a civil service examination at Albany, for the positions of junior assistant physicians and apothecaries in the State hospitals for the insane. Applicants for the former must be residents of the State of New York, graduates of a legally incorporated medical college, and have had at least one year's actual experience on the staff of a public general hospital. Salary, $800 to $1,500 a year, with board.

A Long Swim. — Dr. Judson Daland, the Mediterranean deputy of Health Officer Jenkins, recently performed a remarkable athletic feat in swimming the classic Straits of Messina, from Scylla to Charybdis. He entered the sea at Faro, and after encountering much difficulty with the currents, passed the rock of Scylla and landed on the coast at Riggio, in Italy. The distance was about six and a half miles, and was accomplished in two hours and twenty minutes, and without the use of stimulants. It is not known that the feat was ever before accomplished.

Electro-Execution. — The execution of the murderer Foy, which was effected at the Dannemara prison, on October 23d, is said to have been the most successful since the infliction of the death penalty by means of electricity has been in use. At first a current of 1,640 volts was sent through the body for four seconds. The current was then gradually reduced to 150 volts, and at the end of forty-five seconds was increased again to 1,640 volts for two seconds, and then shut off. In order that there might be no delay from the possible giving out of the dynamo, as was the case at the last execution at Auburn, the electrical apparatus had been previously connected with the electric-light plant of the town.

Miscellany.

THE WATER-SUPPLY OF LONDON.

The Royal Commission appointed last year to inquire into the water-supply of London has lately made its report.

The city is at present supplied by eight metropolitan water companies and sixteen others within the limits of Greater London, that is, within a circle of a radius of fifteen miles from Charing Cross, an area of 701 square miles. These extra metropolitan companies obtain their supply from wells sunk into the chalk stratum, with the exception of two companies which draw daily a total of 4,000,000 gallons from the Thames.

It is estimated that in 1931 the population of London will be at least 8,526,054, and the daily supply required will amount to 253,529,686 gallons. The capacity of the water companies to provide this quantity is returned as follows: — From the Thames, 300 million gallons daily; from the Lea, 52½; from wells and chalk springs, 87 million gallons; making a total of 439½ million gallons a day. To ensure these results from the Thames and Lea it will be necessary to make vast storage reservoirs, and impound all the storm and flood water, to be drawn upon when required.

It is feared that this storage water will be of such quality as to be of considerable danger to consumers for there is at present much filth discharged into the rivers; a large proportion of which is preventable and distinctly illegal, the Rivers' Pollution Prevention Act being to a great extent a dead letter. The Commission urges that "all possible vigilance be exercised to prevent unnecessary contamination of the Thames and Lea and their respective tributaries, to ensure the thorough treatment of all sewage, before it is allowed to pass into the rivers, by the most efficacious methods that science and experience may dictate, and to enforce the adequate storage and filtration of such water as is abstracted at the intakes."

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LOOKOUT MOUNTAIN AS A HEALTH RESORT.

Lookout Mountain is recommended most enthusiastically as a health resort by Dr. Deitrich,[1] who has found there a cure for his own case of phthisis. Its reputation for climate has, until the last few years been only local, but is deserving of further notice. The plateau summit, which is seventeen hundred feet above the Tennessee River, and two thousand and eighty above tide-water, is an undulating surface beginning at the northern end and gradually widening out to the south until it is over a mile in width. It extends into Georgia, but only the Tennessee portion is easy of access. "The soil is light and sandy, absorbing moisture with great rapidity. Since the war there has been no cultivation, and the plain has now grown up with pine and oak forest.

"The meteorological records, which have been taken only within the last twelve months, show a mean annual temperature of 54° F., with an annual range of 17° F. During the winter there is seldom freezing weather; and only once in five years has the thermometer been as low as 2° F. The maximum last summer was 88° F. The average number of clear, fair days was twenty-four each month. There is abundant sunshine and a breezy atmosphere."

It is stated that no case of consumption has been known to occur among the native mountaineers. The water-supply is abundant and pure, there being both freestone and chalybeate springs. Aside from the wonderful views to be had from the summit, there is the advantage of easy access from the city of Chattanooga. The accommodations for invalids, which are so important and so lacking in many of the Southern health-resorts, are said to be most excellent.

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VENOUS MURMUR IN CIRRHOSIS OF THE LIVER.

Martini reports [1] three cases of atrophic cirrhosis of the liver in which there was a constant blowing murmur to be heard in the sixth intercostal space in the right axillary line. The murmur was always increased during inspiration, but in one case diminished after an attack of hæmatemesis. The cause seemed to be in the altered position of the ascending vena cava, which was crowded against its opening in the diaphragm by the contracted liver and the ascites, causing a venous eddy at the point of obstruction. In one case which came to autopsy there was a distention of the vein below the opening.

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ANTHROPOMETRICAL DESCRIPTIONS.

One of the interesting studies which has arisen in connection with criminology is the means by which criminals may be identified without mistake. The adoption of the photograph was a great gain in every way, but the large collections of rogues' likenesses have been growing to such proportions in our great cities that it is now impossible to search through them all. In Paris, alone, there were 100,000 persons photographed in ten years. The changes of feature possible, and the distortions even of photography were also objectionable.

In a recent number of the *Humanitarian*, Dr. Bertillon describes the method which under his name is now used in France. It exemplifies most remarkably the time saved by system and order in the arrangement of statistics. The description of each person is made by recording the length of various bony parts, always the same, and taken in a regular order. Under each measurement there are made three divisions, long, medium and short. And as each new factor is introduced under the proper sub-class of the division before it, the case under consideration is rapidly localized.

The measurement of height is not used as the basis of the first great division as might be expected, for it is found impossible to measure closer than 1.18 inches, while by commencing with the less changeable measurements a greater accuracy of classification is obtained.

The length of the head is the first taken, by means of compasses so accurately adjusted as to show a variation of a millimetre. The three classes are short, 7.2 inches; medium, 7.25 to 7.4 inches inclusive; and long, those over 7.4 inches. Next is measured the breadth of the head, from one parietal bone to the other. This again gives three classes, narrow up to 6 inches; medium, 6 to 6.22 inches; broad, over 6.22

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[1] Medical Record, October 14th.

[1] Gazz. degli Ospitali, 2, 21, 1893.

inches. Following these there come in order, each with three divisions, the length of the middle finger of the left hand, one of the very best indications, the maximum length of the left foot, not of great accuracy, length of extended arms, height, color of the eyes, for which a special table of seven divisions is used. These figures alone divide the number of cards to be examined by a very large divisor, and the addition of a few more measurements, as the measurements of the ear, sternum, or other fingers, would reduce the number of cards, each criminal having one, still further. Finally, as a last and absolutely determining check is the record of particular body signs, as scars, moles, etc. Three or four of these would suffice to enable a man to be identified out of a million. These special marks are much less deceptive and costly than photographs, and are a better guarantee for identification than measurements; and would entirely replace the latter, if only it were possible to make use of them as a basis for classification.

The number of divisions, all equally probable, which are furnished by the twelve indications, combined and divided by the three categories (small, medium, large) exceeds *One Million.*

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Correspondence.

LETTER FROM CHICAGO.

World's Fair Congress of Public Health, and Meeting of the American Public Health Association, October 10–14, 1893.

(Concluded from No. 17, page [illegible].)

THURSDAY. — AFTERNOON SESSION.

Dr. A. R. Reynolds, Commissioner of Health of Chicago, and Mr. Allen Hazen, Chemist of the Water Department at the Exposition, presented the subject of "The Water-Supply of Chicago." Dr. Reynolds stated that the new water intakes or cribs four miles distant from the shore had been in operation for several months, and that since the water had been drawn from that distance the death-rate from typhoid fever in the city had been greatly reduced. For the year ending September 30, 1892, the number of deaths from typhoid fever in Chicago was 1,790 in a total of [illegible], or a percentage of 6.72. For the year ending September 30, 1893, deaths from typhoid fever were 712 in a total of 26,977, or a percentage of 2.64. It is most unfortunate for this comparison that the old supplies were partly in use during the first few months of the latter year, before the [illegible] was completed. We may believe that if this had not been the case, the comparison would have been still more favorable to the improved supply. It is a well-known fact that people using a water-supply to which they are not accustomed are often more susceptible to any infection which it may contain than are those using such water regularly. A striking illustration was furnished by Philadelphia in the Centennial year, when the typhoid death-rate was nearly doubled; while in Chicago the present year, for the first five months of the Fair period the rate has been less than half as high as for the corresponding months of the preceding year. For the entire year under consideration, in spite of the vast number of visitors continually present, there has been a reduction of over 60 per cent. in the typhoid fever death-rate. This reduction is most striking, and it can hardly be doubted that the improvements in the water-supply have been the chief, if not the only, cause.

The mortality percentages from typhoid fever in a number of cities may be compared as follows: Chicago, 1892, 6.72; in 1893, 2.64; Philadelphia, 1892, 2.22; Boston, 1.22; Paris, 1.01; New York, 0.90; Brooklyn, 0.80; London, 0.49; Berlin, 0.42. The cities having the lowest typhoid fever [illegible] London and Berlin, [illegible] London draws nearly all its water from the two grossly polluted rivers, the Thames and the Lea, and after filtering it, supplies it to a [illegible] of typhoid fever. Another improvement which will eventually still further protect the purity of Chicago's water-supply may be mentioned — the drainage canal. In the meantime it may be a question worth considering by the engineers whether filtration would not be as cheap and effective a means of improving the water-supply as the farther extension of the tunnel.

Mr. Geo. W. Fuller, Biologist at the Lawrence Experiment Station, presented a paper on the "Removal of Pathogenic Bacteria from Drinking Water by Sand Filtration." He described the experiments which had been made at the Lawrence Experiment Station, the results being summarized in a series of [illegible], in which it was shown by the results of 11,000 examinations that it is entirely practicable to construct filters for city water-supplies which will remove more than 99 per cent. of the bacteria. He stated that the large filter just finished for the filtration of the water for the city of Lawrence [illegible] from [illegible] to [illegible] per cent. of the bacteria after a few days of use.

The remainder of the afternoon was devoted to the subject of "Quarantine."

Papers were read by Drs. Liceaga and Orvananos upon "Quarantine in Mexico."

Dr. Montizambert, of Quebec, described the system in practice at Grosse Isle, the Quarantine Station of the St. Lawrence River, where more than 100,000 pieces of baggage of immigrants had been disinfected during the past season.

Dr. Swearingen, of Texas, described the quarantine system of the Texas sea-coast, and severely criticised the laxity of the Mexican laws in allowing people infected with yellow fever and small-pox to cross the Rio Grande.

A vigorous discussion followed in which Drs. Baker, Hewitt, La Chapelle and others participated, the points at issue related to the disinfectants in use, the articles to be disinfected and the methods of treating them, and the diseases to which quarantine should be applied.

EVENING SESSION.

Mrs. Dr. Sarah H. Stevenson, of Chicago, spoke upon "Municipal Sanitation," her remarks being chiefly devoted to the importance of a proper disposal of the dust of dwellings and of streets.

Dr. Abbott, of Massachusetts, read a paper entitled "National Registration a Necessity."[1]

FRIDAY. — MORNING SESSION.

Dr. Miguel Marquez, of Chihuahua, Mexico, presented a paper entitled "Animal Vaccine: Why it should be Preferred to Human Vaccine," in which it appeared that epidemics of small-pox had been more frequent during the past half-century in Mexico than in the United States. The conclusions of his paper were as follows:

That to continue the use of human vaccine, is attended by grave inconveniences that are advantageously avoided by the use of animal vaccine; that the latter is adapted for distribution; that its beneficent influence may be felt even in the smallest villages, hamlets and ranches, by distributing great quantities of vaccine points; that an intelligent person can inoculate without the least danger; that we should not trust to the judgment of any individual to determine whether a child is or is not well, or if the lymph should be taken from it (with the possibility of transmitting syphilitic virus) and that, of course, the adoption of animal vaccine will suppress forever the custom of vaccinating from arm to arm.

Summary: The animal vaccine should be preferred to human vaccine, because:

(1) It does not transmit syphilis and preserves more efficiently against the small-pox.

(2) It can produce at a given moment large quantities of lymph, fresh, pure and genuine, at a very small cost.

(3) Its administration can be trusted to any intelligent person without the least danger.

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[1] [illegible]

Dr. Jerome Cochran, of Alabama, presented the results of an experiment in disinfection for the preventive treatment of pneumonia. He stated his belief that pneumonia was infectious, but was not aware of any previous attempt to limit its spread by means of disinfection. A brief description of outbreaks in prisons and among miners in Alabama was given. The epidemic occurred in May, 1893. The total number of cases was 93. Disinfection of the prison hospital was begun on May 14th, and completed in six days. There were only seven new cases after the disinfection; and he thought that these might have been contracted before the completion of the disinfection. This was accomplished by drenching the walls and floors with sublimate solution. Mattresses and clothing were introduced into a steam-chest for six hours. Convicts were required to take a bath. In one week the epidemic had ceased.

Dr. C. N. Hewitt, Secretary of the Board of Health of Minnesota, read a brief paper entitled "The Best Way to Restore the Practice of Vaccination to its Proper Place as a Preventive of Small-Pox," in which he presented the results of his experience in dealing with a hundred outbreaks of small-pox in Minnesota. He successfully conducts a State vaccinal institute, and distributes lymph from this establishment. He believed that the work of propagating vaccine lymph should be freed from the harmful influence of commercial and trade methods to which it is subjected in this country.

Dr. Lee, of Pennsylvania, presented a resolution endorsing the practice of vaccination in the strongest terms; which was adopted by the Congress by a unanimous vote.

As one of the committee on yellow fever appointed at the last meeting of the American Public Health Association at Mexico, Dr. Liceaga, President of the Supreme Board of Health of Mexico, presented a "Contribution to the Study of Yellow Fever." The following is a *résumé* of the chief points in the paper of Dr. Liceaga:

(1) The places where yellow fever reigns, and which can be considered as *centres* of infection, are in the Gulf of Mexico, Vera Cruz, Frontera, Campeche and the districts on the northern coast of the Yucatan Peninsula, the last named separated by the Yucatan Canal from the Island of Cuba, where the fever also reigns.

On the great Pacific Coast, which belongs to the Mexican Republic, there is not a single yellow fever centre.

(2) All the Mexican territory on the Gulf of Mexico and on the Pacific Coast is well adapted for the disease when imported.

(3) Yellow fever has become epidemic in the following places on the gulf coast: Matamoros, Altamira, Tampico, Tuxpam, Papantla, Misantla, Nautla, Alvarado, Coatzacoalcos, Minatitlan, Lagang and San Juan Bautista de Tabasco.

(4) The epidemic has extended into the interior, but never into places situated more than 1,008 metres over sea level.

(5) On the Pacific there is not a yellow fever centre, but it has been imported into the following places: On the Peninsula of Lower California, La Paz and Todos Santos; on the Continent, Guaymas, Altata, San Blas, Manzanillo, Santiago, Acaponeta, Acapulco, Puerto Angel, Salina Cruz, Tonala Soconuzco, Tapachula and San Benito, and in the interior in Hermosillo and Culiacan.

(6) Immunity against yellow fever is obtained after having had the disease in any of its forms.

It is possible that this immunity may be lost at times, but it is seldom the case, as it happens with typhus, small-pox and scarlet fever, which may be had by a person who has had them.

(7) The vaccine of Jenner against small-pox and others which science has discovered, authorize us to look for the one that will prevent the yellow fever.

The inoculation against this fever which Dr. Carmona y Valle has practised with success should be tried on a large scale, in an uniform manner, in order to be able to find out if they are efficacious or not. If this experience confirm it then they should be made compulsory in the countries where the fever reigns.

If they should not prove worthy, then the inoculation of blood serum, as proposed by Dr. Sternberg, from persons enjoying immunity, should be tried on a large scale and in a uniform manner.

(8) The purification of the drinking-waters used by persons who have to expose themselves to contract the disease, should be recommended.

The purification of the water used on board the ships leaving or calling at infected ports should be proposed.

(9) The sanitation of the places which are yellow fever centres should be done at once.

(10) To prevent, by means of Sanitary Police measures, the importation of fever into places where it can be developed.

Dr. Mendizabal, of Mexico, read a paper upon "La Grippe in Mexico."

Dr. Roque Macouzer, of Mexico, presented the subject of "Diphtheria in Mexico." He stated that the disease was imported into that country by the French Army in 1863, that it was now decreasing in severity, and he believed it would finally disappear. He regarded notification and isolation as important measures in restraining its spread.

Dr. Macouzer presented the following resolutions, which was referred to the Executive Committee.

(1) That educational institutions be recommended to devote more time to the study of hygiene.

(2) That governments should appoint to sanitary positions only those persons who are experts in sanitary science.

Dr. Marin, of Pueblo, read a paper on "Scarlet Fever in the City of Mexico."

Dr. Hewitt reported, in behalf of the Executive Committe, that Mr. Henry Lomb, of Rochester, New York, already well known as a generous benefactor of the Public Health Association, had offered a new prize of $500 for a treatise on "Public Hygiene," for use in the public schools, with a further prize of the same amount for a treatise or essay on some special topic which would be announced in future.

Dr. W. Oldright, of Toronto, read a paper on "Unrest, and its Effect upon the Nervous System." He urged the importance of recreation, and regular relaxation from work, especially for brain-workers. He advised occasional complete abandonment of work and change of employment, as a means of rest. He especially plead for a better observance of Sunday as a day of rest for workingmen.

A prominent paper in the afternoon session was that of Dr. Benj. Lee, Secretary of the State Board of Health of Pennsylvania, entitled, "How shall our Lepers be Cared for?" The following abstract is given:

The State Board of Health of Pennsylvania and the Board of Health of the City of Philadelphia have had some unpleasant experiences with lepers, which have led both of these bodies to appeal to the general government to establish a colony or colonies, where these unfortunates might be provided with the comforts of home, medical care and nursing, and, at the same time might cease to be a horrid menace to the health of those with whom they were thrown into close contact. In order to arrive at a somewhat definite opinion as to first, the need for the adoption of such a measure, and secondly, the general drift of opinion on the part of those who had given the subject thoughtful attention, in December, 1891, I addressed circular letters of inquiry to the secretaries of all State and Provincial boards of health in the United States and Canada, and to prominent dermatologists.

Replies to these inquiries have been received in twenty-three instances. They indicate, briefly, that cases of the diseases have been recognized and made the subject of official report in seventeen States and Provinces. In ten States or Provinces cases exist at the present time under the observation of the authorities, namely, New Brunswick twenty-two, British Columbia seven, New York six, Pennsylvania four, Illinois two, Iowa one, Minnesota seven, Wisconsin four, Louisiana forty, California twenty-four; making in all one hundred and seventeen cases.

At [illegible] Lazaretto at Tracadie in the Province of New Brunswick, provision is made for the comfort, care and treatment of these unhappy beings in a manner in harmony with the [illegible] of humanity and the requirements of modern science, while, at the same time, they [illegible] the health and happiness of others. The United States has only gone so far as to make the affection quarantable at the seacoast, and to order those found suffering from it on arriving vessels, to be at once returned to the ports from which they came. In the different States of the Union, the widest diversity prevails, both in theory and practice. The only place in which [illegible] and at the same time humane provision is made for the shelter, maintenance, medical attendance and nursing care of lepers, is the City of Philadelphia. The manner in which the county authorities, who have the care of the other cases in Pennsylvania, discharge that duty is by no means in keeping with the dictates of humanity or the laws of sanitation.

While their numbers are few, no little rural community (very few States even) feels justified in going to the expense of establishing a lazar-house or colony. Is it wise to wait until State after State finds itself compelled by their increasing members to take this step? Or is not rather the duty of the central government to gather them all into one properly supervised community where they can have the companionship of their fellows, the comforts of a thoroughly furnished home, and the advantages of the best medical and surgical skill?

Such is the distinctly expressed opinion of nineteen of the twenty-one eminent dermatologists who favored me with replies to my circular of inquiry.

In conclusion, I desire to say that in determining the importance of this question and the necessity for governmental interference, the numerical method is entirely misleading. One case of leprosy outweighs a hundred of any other disease. If there were but ten lepers in the land instead of more than ten times ten, it would be equally the duty of Congress to initiate measures to prevent, if possible, a single addition to the horribly afflicted company.

In the afternoon many of the members went to the Exposition for the purpose of visiting the exhibits of the State Boards of Health in the Department of Hygiene and Sanitation. The exhibit of the Massachusetts Board of Health, to which reference has already been made in the Journal, received much commendation.

Visits were also made to the sewage-disposal works and the garbage crematory. The former is conducted very nearly upon the plan adopted in several German cities (Essen and Dortmund), and known as the Rockner-Rothe process. The sewage of all the Exposition buildings is received into a building at the further extremity of the grounds, where it is collected in four large iron tanks open at the top. As it enters at the top, it is treated with chemicals which precipitate the sewage, the tanks acting as settling reservoirs for the sludge which gradually falls to the cone-shaped bottom where it is pumped out and conveyed to a press and deprived of much of its water. The compressed sludge is taken to the crematory and burned, together with the garbage and refuse which is collected each day from the restaurants and grounds.

Near the Department of Hygiene is the Rumford Kitchen, established by Mrs. E. H. Richards, of the Institute of Technology, where practical illustrations of food preparation and food economy have been given daily. The members were hospitably entertained at the kitchen.

The following officers of the Public Health Association were elected for the ensuing year: President, Dr. E. P. La Chapelle, of Montreal; First Vice-President, Dr. M. Carmona y Valle, of Mexico; Second Vice-President, Dr. J. N. McCormack, of Kentucky; Secretary, Dr. I. A. Watson, of New Hampshire; Treasurer, Dr. H. D. Holton, of Vermont.

It was decided to hold the next meeting at Montreal in [illegible].

DIFFERENTIAL DIAGNOSIS OF DIPHTHERIA.

Boston, October [illegible], 1893.

Mr. Editor: The accompanying circular letter has been sent out to a number of gentlemen, but, as it appears, has not reached some of those who would be glad to co-operate in this work. If there are any who are willing to furnish material, we shall be very glad to have them consider this letter as especially directed to them.

Very truly yours,
Harold C. Ernst, M.D.

Harvard University Medical School
Bacteriological Laboratory,
Boylston and Exeter Sts.

Boston, October, 1893.

My Dear Doctor: It is desired to secure information as to how many cases of mild sore throat are or are not diphtheritic. This can only be done by bacteriological examination of cases in private practice, and your co-operation in securing evidence upon the point would be very valuable. Nutrient materials and directions for making the cultures will be furnished at this laboratory every afternoon except Sundays, between three and four o'clock, and at other times by special appointment. The cultures will be carried on and the examination concluded without further trouble to you, and a report will be sent you as soon as the work is finished.

If you are willing to help in the investigation, we shall be very glad to receive a notice to that effect, and further instructions as to methods will be given you here.

Very truly yours,
Harold C. Ernst, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, October 21, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid fever.	Diphtheria and croup.
New York	[illegible]	[illegible]	[illegible]	11.[illegible]	11.[illegible]	4.62	2.52	5.86
Chicago	1,438,000	[illegible]	[illegible]	—	—	—	—	—
Philadelphia	1,115,[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.05	2.65	8.91
Brooklyn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.66	1.24	7.13
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	[illegible]	[illegible]	[illegible]	16.38	12.18	3.36	[illegible]	[illegible]
Baltimore	[illegible]	—	—	—	—	—	—	—
Washington	[illegible]	109	[illegible]	[illegible]	[illegible]	1.70	3.76	5.64
Cincinnati	[illegible]	112	[illegible]	[illegible]	[illegible]	[illegible]	—	8.90
Cleveland	[illegible]	[illegible]	11	[illegible]	[illegible]	[illegible]	[illegible]	3.54
Pittsburg	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.28	9.63
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.8[illegible]	4.29	[illegible]
Nashville	[illegible]	[illegible]	11	14.28	14.28	—	3.57	—
Charleston	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.88	—
Portland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
Worcester	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.11	7.40	—
Fall River	[illegible]	[illegible]	[illegible]	—	—	[illegible]	—	—
Lowell	[illegible]	[illegible]	[illegible]	—	[illegible]	10.00	[illegible]	—
Cambridge	[illegible]	[illegible]	[illegible]	—	—	15.38	—	7.69
Lynn	[illegible]	[illegible]	[illegible]	—	—	—	11.11	—
Springfield	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	13.33	—
Lawrence	[illegible]	[illegible]	[illegible]	—	—	—	—	—
New Bedford	[illegible]	[illegible]	[illegible]	15.40	3.85	11.[illegible]	[illegible]	—
Holyoke	[illegible]	[illegible]	[illegible]	[illegible]	20.00	10.00	10.00	—
Salem	[illegible]	[illegible]	[illegible]	20.00	20.00	20.00	—	—
Brockton	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—
Haverhill	[illegible]	[illegible]	[illegible]	—	—	—	—	20.00
Chelsea	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	6.25	—
[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—
[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Waltham	[illegible]	[illegible]	[illegible]	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—
[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Northampton	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]	—
Newburyport	[illegible]	[illegible]	[illegible]	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	—

Deaths reported [illegible]; under five years of age [illegible]; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 444, consumption [illegible], acute lung diseases [illegible], diphtheria and croup [illegible], diarrhoeal diseases 1[illegible], typhoid fever 70, scarlet fever 20, cerebro-spinal meningitis 18, whooping-cough 12, malarial fever 10, small-pox 5, measles 4, erysipelas 2.

From scarlet fever New York 6, Pittsburg 3, Philadelphia and Boston 2 each, Brooklyn, Cleveland, Lowell, Lynn and Springfield 1 each. From cerebro-spinal meningitis New York 5, Brooklyn 3, Cleveland, Somerville and Chelsea 2 each, Washington, Lowell, Cambridge and Lynn 1 each. From whooping-cough Philadelphia 5, New York 4, Boston 2, Brooklyn 1. From malarial fever Brooklyn and Nashville 3 each, New York and Charleston 2 each. From small-pox New York 3, Brooklyn 2. From measles New York 3, Fall River 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending October 14th, the death-rate was 18.2. Deaths reported 3,599: diarrhœa 164, diphtheria 111, fever 38, scarlet fever 72, whooping-cough 54, measles 35, small-pox (Bradford 3, London and Birmingham 2 each, Liverpool and Burnley 1 each) 9.

The death-rates ranged from 9.1 in Huddersfield to 25.5 in Preston; Birmingham 19.6, Bradford 14.8, Croydon 12.9, Gateshead [illegible], Leeds [illegible], Leicester 18.1, Liverpool 22.7, London 17.9, Manchester 21.[illegible], Newcastle-on-Tyne 18.[illegible], Nottingham 18.4, Portsmouth 15.6, Sheffield 18.3, Swansea 17.8, West Ham 18.1.

METEOROLOGICAL RECORD.

For the week ending October 21, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Thermometer. Daily mean.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.†
S..15	29.84	62	[illegible]	[illegible]	[illegible]	[illegible]	71	S.W.	W.	[illegible]	17	C.	F.	
M..16	30.29	51	41	46	61	64	64	N.W.	N.W	10	19	C.	C.	
T..17	30.38	64	[illegible]	[illegible]	72	[illegible]	62	W	S.W.	4	8	C.	C.	
W..18	[illegible]	[illegible]	47	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	E.	[illegible]	12	C.	C.	
T..19	[illegible]	52	[illegible]	[illegible]	74	[illegible]	[illegible]	N.	S.E.	[illegible]	10	C.	O.	
F..20	30.40	[illegible]	[illegible]	[illegible]	73	81	77	S.W.	S.	[illegible]	[illegible]	O.	C.	
S..21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	80	S.W.	S.W.	7	9	O	C.	
☞	30.31	6[illegible]	45				67							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 21, 1893, TO OCTOBER 27, 1893.

Lieut.-Col. Albert Hartsuff, deputy surgeon-general, is relieved from duty at Fort Omaha, Nebraska, and ordered to report in person to the commanding general, Department of California, for duty as medical director of that department to relieve **Colonel Joseph R. Smith**, assistant surgeon-general.

Colonel Smith, on being relieved by **Lieut.-Col. Hartsuff**, will proceed to Governor's Island, N. Y., and report in person on December 4th, to the commanding general, Department of the East, for duty as medical director of that department.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING OCTOBER 21, 1893.

Fessenden, C. D., surgeon. Granted leave of absence for thirty days. October 4, 1893.

Bailhache, P. H., surgeon. Detailed as delegate to meeting American Public Health Association. October 5, 1893.

Vansant, John, surgeon. Granted leave of absence for thirty days. September 23, 1893.

Hutton, H. H., surgeon. Detailed as chairman, Board to inspect Gulf Quarantine Station. October 17, 1893.

Hamilton, J. B., surgeon. Granted leave of absence for three days. October 2, 1893.

Gassaway, J. M., surgeon. Detailed as member, Board to inspect Gulf Quarantine Station. October 17, 1893.

Mead, F. W., surgeon. To rejoin station (Washington, D. C.). September 19, 1893.

Carter, H. R., surgeon. To proceed to Way Cross, Ga., for temporary duty. October 4, 1893.

Kalloch, P. C., passed assistant surgeon. Granted leave of absence for twenty days. October 9, 1893.

Brooks, S. D., passed assistant surgeon. To proceed to Chicago, Ill., for temporary duty. September 19, 1893.

Goodwin, H. T., passed assistant surgeon. Granted leave of absence for thirty days. September 27, 1893.

Cobb, J. O., passed assistant surgeon. Granted leave of absence for thirty days. October 11, 1893.

Guiteras, G. M., passed assistant surgeon. Detailed as recorder, Board to inspect Gulf Quarantine Station. October 17, 1893.

Wertenbaker, C. P., passed assistant surgeon. Granted leave of absence for seven days. September 26, 1893.

Perry, J. C., passed assistant surgeon. Granted leave of absence for seven days. October 5, 1893.

Gardner, C. H., assistant surgeon. To proceed to Port Townsend, Washington, for temporary duty. October 7, 1893.

Nydegger, J. A., assistant surgeon. To proceed to Way Cross, Ga., for temporary duty. October 8, 1893.

Norman, Seaton, assistant surgeon. Granted leave of absence for four days. October 4, 1893.

Sprague, E. K., assistant surgeon. Granted leave of absence for three days. October 7, 1893.

SOCIETY NOTICE.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, November 6th, at 8 o'clock.

Readers: Dr. J. H. McCollom, "Some Remarks on Diphtheria." Discussion by Dr. A. L. Mason, Dr. Durgin, Dr. F. H. Williams and Dr. Jackson.

Dr. J. W. Farlow, "Some Remarks on Hypertrophy in the Post-Nasal Space." Discussion by Dr. F. I. Knight, Dr. A. Coolidge, Jr., and Dr. F. L. Jack.

John C. Munro, M.D., *Secretary.*

APPOINTMENTS.

Dr. Robert T. Edes, of Jamaica Plain, has been appointed Shattuck Lecturer before the Massachusetts Medical Society for 1895. The Shattuck Lecture for 1894 will be given by **Dr. Thomas Dwight**, of Boston.

RECENT DEATHS.

Dr. Richelot, the founder of L'Union Médicale, died recently in Paris, aged eighty-seven years.

Professor LeFort, Vice-President of the Académie de Médicine of Paris, died at Paris, October 19th, aged sixty-one years.

BOOKS AND PAMPHLETS RECEIVED.

A New Material for Surgical Splints and Jackets, with a Method for Applying it. By Edward A. Tracy, M.D., Boston, Mass. Reprint. 1893.

A Novel Proposition; Revolutionizing the Distribution of Wealth; Farm Products Moved as Mail Matter at a Uniform Rate for all Distances. By David Lubin, Sacramento, Cal. Reprint. 1893.

Transactions of the American Surgical Association. Volume the Eleventh. Edited by De Forest Willard, M.D., Recorder of the Association, Philadelphia: Printed for the Association and for sale by W. J. Dornan. 1893.

Sarcoma of the Pia and Brain, Simulating Brain Tumor; Mono-Spasm and Mono-Paresis; Operation; Death on the Third Day. Some Points in the Diagnosis and Treatment of Intra-Cerebral Hæmorrhage and in the Treatment of Chorea. By J. T. Eskridge, M.D, of Denver, Col. Reprints. 1893.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S., Consulting Physician to University College Hospital; Physician to the National Hospital for the Paralyzed and Epileptic. Second edition. Revised and enlarged. Vol. II. Diseases of the Brain and Cranial Nerves, General and Functional Diseases of the Nervous System. With 182 illustrations, including a large number of figures. Philadelphia: P. Blakiston, Son & Co. 1893.

Chirurgie des Voies Urinaires Etudes Cliniques. Par le Dr. E. Lournean, Professeur Libre de Clinique des Maladies des Voies Urinaires; Professeur d'Anatomie a l'école des Beaux-Arts; Ancien Chef de Clinique Chirurgicale a la Faculté de Médicine; Secrétaire de la Sociéte de Médicine et de Chirurgie. Second edition. Revue augmentée et accompagnée de cinq planches hors texte noires et chromo lithographiées. Bordeaux: Feret et Fils. 1894.

Original Articles.

SUDDEN DEATH DUE TO THE HEART.[1]

BY WILLIAM T. COUNCILMAN, M.D., BOSTON.

IN this paper I shall not consider the cases of death due to the actions of poisons on the heart nor the effect of traumas, although both of these are subjects of great interest. The action of the heart in keeping up the circulation of the blood is one which is absolutely essential to the maintenance of life. Anything that interrupts the continuous circulation of the blood through the lungs and through the systemic circulation brings about at once a cessation of the life of the individual. We are not yet fully informed as to the conditions under the influence of which the heart beats with its normal sequence and regularity. It was for a long while supposed that the action of the heart depended upon the nervous ganglia contained within it. These ganglia are abundant in the mammalian heart, and are situated along the large veins emptying into the heart, in the walls of auricles, in the auriculo-ventricular grooves and in the basal portions of the ventricles. It was generally supposed that from these ganglia motor impulses passed to the muscular fibres of the several parts, causing rhythmic contraction of these fibres, the sequence and co-ordination of which were due to a co-ordination between the several ganglia in regard to the generation of impulses. There were various experiments which seemed to prove this. It was shown that when the frog's heart was divided in such a way that each segment contained portions of the ganglionic cells, that the segments in connection with the ganglia would continue to pulsate, while those segments in which there was no connection with ganglia would remain quiescent. Thus, if the lower portion of the ventricle of a frog's heart be cut away, it will cease to pulsate, while the auricles and the portion of the ventricle remaining attached to them continue to contract. The heart may be bisected longitudinally without any loss of its contracting power; and the auricles, which in the frog's heart contain the most ganglia, may be cut into small bits, and they will continue to contract.

Recently, however, a number of experiments have shown that this dependence of the heart-beat on nervous impulses proceding from the ganglia cannot be held without reserve. Portions of the heart, and even strips of its muscular substance, will continue to beat with regularity while immersed in blood-serum. The reluctance of portions of the ventricle to execute spontaneous contraction when severed from the auricles seems to be peculiar to the frog. In the tortoise, for example, portions of the ventricle containing no nerve-cells will beat spontaneously and with a natural rhythm when separated from the auricles. A consideration of all that can be learned experimentally as to the cause of the natural rhythmic contraction of the heart would seem to show that it is independent of nervous action and due to changes taking place in the muscle itself. In various ways the muscular substance of the heart differs from that of the skeletal muscles. It is not so completely differentiated. The striation, although present, is not so distinct, and the closer division of the fibres into cells, and the anastomosis of these cells with one another, is different from the other muscles; and it is possible that the continuous rhythmic contraction is due to this close anastomosis of the fibres. What part the ganglia play in the contraction is uncertain. It may be that they exercise some trophic influence, or they may serve as depots to distribute to all portions of the heart nervous impulses, reaching them from without.

It is not possible to apply to mammals without reserve the result of the experiments which have been made on the hearts of frogs and tortoises. In these animals the substance of the ventricle is very much looser, and the blood from the ventricular cavity can bathe almost all portions of the muscle. In mammals the case is different, because here, owing to the greater amount of muscle and the closeness of its texture, its nutrition can in nowise be kept up by the blood within the ventricle. In order that the proper amount of blood for nutritive purposes should reach the muscle, the circulation in the coronary vessels is necessary. We shall see that the functional activity of the heart depends more on the integrity of the coronary circulation than on any other factor; and when any impairment of this circulation reaches a certain degree, the action of the heart ceases. The proper function of the heart seems further to be in some way dependent on the proper functioning of all its parts. Impairment of one portion of its muscle by degeneration is frequently followed by sudden cessation of function in all other parts.

We can divide these cases of sudden death coming from the heart into two classes. We can consider, first, conditions arising within the heart which render the circulation of the blood through it impossible; and, secondly, those conditions coming from the heart which interfere with its function, no impediment being given to the circulation of the blood through the heart by these conditions. We will first consider those conditions which arise within the cavities of the heart, interfering with its circulation. We may have, in the first place, as a very rare condition, thrombi of such size formed within the heart that the passage of blood through its cavities is obstructed. The formation of smaller thrombi within the heart is a comparatively common event. They may be formed in either one or both sides of the heart, and the most common place for their formation is within the auricular appendages of the heart. These may become entirely occluded by the formation of thrombi. The thrombi formed in the ventricles, are, as a rule, small, and are seated usually in the trabecular tissue of the apices. These do not give rise to trouble in the heart itself, although when carried from the heart they may produce various troubles, and even sudden death, by occluding the arteries going to parts essential for life. The thrombi formed in the auricles are, however, rather more extensive. The most extensive formation of thrombi is usually associated with chronic endocarditis and stenosis of the mitral valve. This plays an important role in the first formation of the thrombi. The great dilatation of the auricle and its imperfect emptying leads to the stagnation of the blood in certain parts, especially in the appendices. There may be an enormous formation of thrombi in the auricle, and the mouths of one or more of the pulmonary veins may be occluded by the thrombi, without causing immediate cessation of the cardiac action.

Mural thrombi may be formed at the openings of

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[1] Read at the meeting of the Massachusetts Medico-Legal Society, October 4, [illegible]

the heart, and may be sufficiently extensive to prevent the entry or the exit of blood. The specimen which I present and which I owe to the kindness of Professor Draper, illustrates this. The specimen comes from a young man of twenty-five who died suddenly. There is an acute endocarditis with vegetations on the aortic valve. In the sinus of Valsalva, behind the anterior segment of the aortic valve, a thrombus has formed which terminates in a large globular mass. It is very probable that during life this floated freely in the aorta. At the autopsy, it was found as it is now, below the valves within the ventricle. It is possible that it may have been forced into the ventricle at the close of the systole, and then on the next contraction of the ventricle may have been wedged into the orifice by presenting a longer diameter, thus closing the orifice and instantly stopping the circulation. The condition is an exceedingly interesting one, and in looking over the literature of heart thrombi I have not found a similar case. It would be difficult to explain the sudden termination of life in any other way.

Of most importance in this connection are the so-called free thrombi in the heart. This condition was first observed by Von Rechlinghausen,[2] and described by him in his treatise on the general pathology of the circulation. He describes two cases of marked mitral stenosis in which there were free thrombi the size of small walnuts in the left auricle.

Cases have since been described by Macleod[3] and Hertz,[4] and lately another case has been reported by Arnold.[5] Hertz first brought forward the idea that the free thrombi in the auricle could occlude the auriculo-ventricular valve, acting as a ball valve and so produce severe symptoms, or in some cases sudden death. Von Recklinghausen,[6] in a criticism of the paper of Hertz in which he gives the clinical history of his two cases, takes ground against the ball-valve theory of Hertz. In both of his cases death was not sudden, and there were no symptoms during life which denoted any sudden impediment to the circulation. In one of the cases which Hertz reports there was sudden death, and in the other there were several attacks of collapse which he was inclined to attribute to temporary occlusion of the valve. The same was true in the case reported by Macleod. In the afternoon the patient was seized with convulsions and shortly after became unconscious. The pulse was very small, weak, and the cyanosis extreme. This condition was gradually recovered from, and at nine o'clock in the evening of the same day there was a similar attack which lasted until death, which took place the following morning. In the case reported by Arnold, although there was some evidence of sudden impairment of the action of the heart, orthopnœa and intense cyanosis three weeks before death, the manner of death was not such as could be attributed to a sudden cessation of the circulation. These free thrombi in the heart are always round, their roundness being probably due to their motion within the auricle and probably to their increase in size by the continuous addition of new masses of fibrin. Their origin appears to be always the same. They are associated with the presence of adherent thrombi either in the auricular appendices or elsewhere in the auricle. Long thrombi, sometimes projecting to a considerable extent from the surface with a small base of attachment, are sometimes found adherent to the wall of the auricle. These form the so-called heart polypi of the old writers. These masses can become detached, and from their continual motion rolling round and round in the auricle can acquire a round shape. They are necessarily always associated with stenosis of the mitral valve, for with a valve of normal width the masses separated from the mural thrombi would pass through into the ventricle. That they can become a cause of sudden death by closing as a ball valve the narrow auriculo-ventricular orifice appears evident from the case of Hertz and from a case which I observed at the Johns Hopkins Hospital. The case was that of a woman with a history of previous attacks of rheumatism, and the clinical evidences of mitral stenosis. She came into the hospital for the relief of her symptoms of dyspnœa, dropsy, etc., and after being there for a short time died suddenly, falling back in bed when about to arise from it. At the autopsy, the usual changes in the other organs due to mitral stenosis were found. In the heart itself there was a considerable hypertrophy of the right ventricle, with some dilatation. The left auricle was greatly dilated and hypertrophied. The mitral orifice contracted to a button-hole which would only admit the first joint of the little finger. There were large thrombi masses in the auricular appendices, and a round free thrombus which was lying on, and occluding the mitral orifice, and partially pressed into this. The thrombus was of circular shape, the surface slightly irregular, and at no point was there an irregular surface showing that it had been recently broken away. There can be little doubt, however, that it had originated from the thrombi in the appendices, and that it had been free in the auricle for some time. The condition is one which is rare, and the cases which I have mentioned are the only ones which I have found in the literature.

The cessation of the circulation may also be due to the stoppage of emboli in the heart. According to Terrillon,[7] emboli carried to the right heart from the systemic circulation do not always pass through the heart into the pulmonary circulation, but may remain in the heart producing there an impediment to the circulation. In this case, he says that the heart does not cease instantly, but its beats become gradually smaller and scarcely perceptible, and a condition of extreme cyanosis, followed by death, results. In such a condition the embolus must be an extremely large one, and it is probably caught in the ventricle, and from the continuous addition of thrombi to it, it may occlude the orifice of the pulmonary artery.

These seem to be the only conditions which interfere with the circulation of the blood through the heart by obstructing its orifices. We must now consider those cases in which the mechanism of the heart itself breaks down. We may divide these into the cases in which pathological condition is seated in the muscular substance of the heart or in the valves. There are a number of cases reported in the literature of the heart of the sudden rupture of a valve. Generally, the aortic valve is the one ruptured; and the rupture is generally due to sudden and severe muscular effort, and may take place in a perfectly normal individual. The condition is one which may be

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Von Rechlinghausen: Handbuch der allgemeine Pathologie des Kreislaufes und der Ernahrung.

Macleod: Edinburg Medical Journal, February, 1883.

[4] Hertz: Deutsches Arch., Bd. xxxvii.

[5] Arnold: Zieglers Beitrage, Bd. viii.

[6] Von Rechlinghausen: Bemerkungen zur Abhandlung des Herrn Dr. Hertz. Deutsches Arch., Bd. xxxvii.

[7] Terrillon: De la mort subite par embolie dans la cœur droit. Arch. gen. de Med., 1878.

produced in a dog by passing a sound into the aorta from the carotid, and tearing away one of the aortic valves. There is usually sudden collapse, which is recovered from when the heart's action increases to meet the sudden demand thrown upon it. I have seen one case in which sudden rupture of several of the chordæ tendiniæ of the mitral valve was sufficient to instantly stop a diseased and hypertrophied heart. The case was that of a man with extensive visceral syphilis and Bright's disease. He rode to the hospital in a car, and after leaving the car and walking up the few steps leading to the dispensary, he fell dead. At the autopsy, there was found an acute and chronic endocarditis which had affected the chordæ tendiniæ, and several of these belonging to the aortic segment of the mitral valve had ruptured, allowing the valve to flap back into the auricle and destroying its functions. It is difficult to see how such an accident could happen in a normal heart; and even should it take place it would probably not result in sudden death.

A very much larger number of cases of sudden death are due to conditions affecting the integrity of the myocardium and its power of contraction. It has been shown by numerous experimenters that a normal circulation in the coronary vessels is essential to the function of the heart, and those pathological conditions of the heart itself which lead to sudden cessation of its action are in the main or entirely to be referred to diseased conditions of the coronary arteries. That sudden death is common in heart disease is a widespread belief among the laity. As a rule, in cases of heart disease of the ordinary type in which there are marked evidences of the condition during life, chiefly shown by the results in other organs of impairment to the circulation, death does not take place suddenly, but is generally to be referred to the gradual increase of the conditions brought about by the impairment of the circulation. Cases in which the trouble lies in the mitral orifice, whether stenosis or regurgitation, or both, rarely or never die suddenly. Sudden death, though not common, may take place in cases of stenosis of the aortic orifice.

In stenosis of the aortic valves the intraventricular pressure must be greatly increased in order to overcome it, and with this there is probably a greater degree of hypertrophy than is met with under any other circumstances. Moreover, stenosis of the aortic orifice is frequently accompanied by, and often the result of changes in the arteries, which in themselves lead to hypertrophy. It is possible that the greatly hypertrophied and dilated ventricle may suddenly have an amount of work thrown on it which it cannot accomplish. In consequence of sudden exertion, or some pschychical influence quickly increasing blood-pressure, the ventricle cannot contract on its contents and there is an end. More often, however, the sudden death which takes place in aortic stenosis is due to conditions of the myocardium which may accompany the disease of the aortic valves. Those cases of aortic stenosis which arise after the fortieth year, and have not been preceded by an acute endocarditis are generally due to an extension to the aortic valves of arterio-sclerosis of the aorta. The same process also very generally affects the coronary arteries, and death, in cases of aortic stenosis, is more often due to this affection of the arteries and the changes in the myocardium following it, than to the aortic stenosis in itself.

It is only of late that the important part which the coronary arteries play in the physiology and pathology of the heart has been fully recognized. The two arteries have few or no anastomoses with one another and are distributed to definite sections of the heart, being terminal arteries in the sense of Cohnheim. There is, of course, capillary anastomosis between the various arterial tracts, but there is little or no connection between the larger branches. There is a difference between the various authors as to the presence of and degree of this anastomosis, and there seems to be a marked difference in different hearts. In some cases abundant anastomoses between the right and left coronaries certainly exist as was shown by a case reported by Welch.[8] In this case the right coronary artery was occluded at its origin by a dense sclerotic patch in the aorta. Beyond this the artery was open and it must have received sufficient blood from the left coronary to suffice for its circulation. Stevens[9] found by making injections that communication between the two main arteries and between the various branches of each was sometimes found but does not think that this anastomosis is sufficiently well marked to compensate for the closure. Sternburg[10] studied by various means of injections the territories supplied by the different arteries. He finds that a large portion of the right auricle, the entire posterior part, and a large portion of the anterior part of the right ventricle, a large part of the inter-auricular, and the inter-ventricular septum, the posterior part of the left ventricle, and the posterior papillary muscles are all supplied by the right coronary artery. All other portions of the heart are supplied by the left.

The coronary arteries are among the arteries most liable to disease. They may be occluded by thrombosis or embolism or have their lumen narrowed or occluded by arterio-sclerosis and atheroma. There is a difference between the two arteries in the liability to disease. The left coronary is more frequently affected than the right, and the descending branch of the left coronary more frequently than any other single branch. If a very small branch of the artery be occluded the circulation in the territory supplied by it may be kept up by anastomosis through the capillaries, but this only holds for a very small branch. Occlusion or narrowing of a large arterial branch is followed by the same result which takes place in any other portion of the body where the arteries are terminal, as in the kidney or spleen. The portion of the tissue supplied by the affected artery will, if the occlusion be complete, be cut off from its supply of blood. This will produce necrosis of the tissue elements and of the walls of the blood vessels. The area will be pale, anæmic and we have the conditions of the white infarction. In some cases a large amount of blood will flow into the previously anæmic area from the capillaries of the surrounding tissue. The injured blood-vessels will allow free hæmorrhage to take place from them into the tissues and the condition known as hæmorrhagic infarction is produced. In other cases we have a mixture of the two, an infarction with an anæmic central territory, surrounded by hæmorrhage. The infarctions rarely take place except when the occlusion of the artery is sudden and complete as by thrombosis or embolism. The condition which is more common than infarction

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[illegible]

[illegible]

is one of imperfect nutrition of the heart followed by degeneration of the muscular substance, and produced not by a total occlusion but by a gradual narrowing of the artery. This is due to the ordinary arterio-sclerotic changes sometimes accompanied by atheroma. The nutrition of the tissue may also be affected by arterio-sclerosis without any narrowing of the lumen. The calibre of an artery always conforms to the needs of the tissue supplied by it and varies with the requirements of the tissue. The variations in calibre are produced by contraction of the muscular coat. The essential pathological change in arterio-sclerosis is destruction of the muscular coat, and its substitution by a dense unyielding connective tissue. This converts the artery into a rigid tube which, although performing the mechanical work of bringing blood to the tissue, cannot vary the lumen to meet the demands of the tissues.

Coronary arteries stand in causal relation with the pathological condition known as fibrous or chronic myocarditis. This condition is characterized by the presence of smaller or larger whitish opaque masses of fibrous tissue which is substituted for the muscular tissue. In most cases it may be seen in the endocardium, and extends from this into the muscular tissue; in other cases it does not extend into the endocardium, and the evidence of its presence is only obtained by making sections of the muscle parallel with its surface. Although spoken of as myocarditis, it probably is not an inflammation but the fibrous tissue simply takes the place of the previously degenerated muscular tissue which has been absorbed. The process is one which is rarely found in the right ventricle, and is usually confined to the left side of the heart where it affects the apex of the ventricle and the papillary muscles. It is nearly always due to arterio-sclerosis of the coronary artery distributed to the area, its distribution in the heart conforming to the distribution of the artery most frequently affected.

Most authors agree that fibrous myocarditis is exclusively due to the disease of the coronary arteries. I have recently, however, seen a case which shows that it can be due to other conditions. The case was that of a man who died suddenly a few days after entering into the hospital. He had previously been treated for syphilis, and at the time of his death there were evidences of a slight papillar syphilide on his body. His chief complaint on entering the hospital was dyspnœa. At the autopsy there was found obliteration of the pericardium and the formation of dense sclerotic masses of connective tissue in both layers of the pericardium. The pericardium was adherent in its whole extent, and here and there in the thickened tissue some slight caseous material was found. The right ventricle was enormously dilated, being fully as large as a normal heart. All the valves of the heart were normal. Throughout the right ventricle there were numerous masses of fibrous myocarditis, some of which were two centimetres in diameter. They were distributed not only throughout the outer surface of the ventricle, but along the septum. There was also a patch of fibrous myocarditis in the left ventricle, in the septum and a few small patches at the apex. The coronary arteries were normal with the exception of a perfectly circumscribed patch of endarteritis in the left coronary artery around the mouth of a large branch going into the septum. The intima here was thickened and roughened but the calibre of the artery was very slightly affected. Microscopic examination showed that the patches of fibrous myocarditis in the right ventricle were in every case closely connected with the fibrous pericarditis, and it seemed to be due merely to an extension of the fibrous tissue from the pericardium into the myocardium. It was accompanied by a well marked arteritis of the smaller arteries. There was clear evidence of syphilis given in a fibrous orchitis in both testicles. There is little doubt that in this case the myocarditis was directly due to the pericarditis which was very probably in close relation with the syphilis. The marked disease of the small arteries in the affected foci would point clearly to this. The dilatation of the ventricle was due to the fibrous myocarditis, and the sudden death to the same cause.

Although this formation of fibrous tissue is essentially conservative in its action, supplying a firmer tissue than the degenerated muscle, it is infinitely less resistant than the normal tissue of the heart. It gradually gives way before the pressure in the ventricle and is the cause of aneurism of the heart. These aneurisms of the heart are essentially the same as aneurism of any of the arteries. They frequently contain a large amount of laminated fibrin in their walls. They may form in any part of the heart, but are much more frequent in the apex of the left ventricle. Rupture of the heart, leading to sudden death in a large percentage of the cases, may take place through the walls of such an aneurism.

Death from non-traumatic, the so-called spontaneous rupture of the heart, cannot be regarded as extremely uncommon. I have seen four cases and there are a great number of cases reported in the literature. It would not be within the purpose of this article to enter fully into the literature of the subject. The fullest accounts with statistics are given by Bottger,[11] Barth [12] and Meyer.[13] It may be regarded as certain that rupture, even under the greatest sudden increase in pressure, never takes place in a normal heart. The various conditions of the heart which precede rupture are those due to coronary artery disease. The connection between rupture of the heart and disease of the arteries was first recognized by Barth, and since then has been noted in all cases in which the arteries were examined. The pathological conditions of the myocardium which may lead to heart rupture, are fibrous myocarditis, with or without aneurism formation, circumscribed fatty degeneration, necrosis and fatty infarction.

The only condition of the heart not connected with disease of the coronary arteries which may be followed by rupture is fatty infiltration. In this condition there is a development of fat on the outside of the heart, beneath the pericardium, which may penetrate beneath the muscular fibres, thus weakening the heart. In the earlier literature several cases of this have been reported, but since the condition of the coronary arteries has received careful attention, there has been no report of this. It must be very exceptional to have such a degree of fatty infiltration that it can lead to rupture of the heart.

With regard to the frequency of rupture of the heart, Devergie [14] reckons it as producing two and one-half per cent. of the cases of sudden death. Aran

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[11] Bottger: Ueber die spontanen Rupture des Herzens, Arch. d. Heilkunde, 1863.

[12] Barth: De la rupture Spontanee du cœur, Arch. gen. de Med., 1871.

[13] Meyer: Zur Kenntriess der spontanen Herzruptur, Deutsches Arch., Bd, 43.

[14] Devergie: Medicine Legale, 1840.

(quoted from Bottger) found in 202 cases of sudden death with changes in the organs of circulation, 113 produced by affections of the heart without rupture, and 88 by rupture. To both traumatic and spontaneous rupture of the heart the male sex is more disposed than the female. Elleaune[15] found in 18 cases of rupture of the heart, 16 in males and only two in females. In the traumatic rupture the greater frequency in males may be explained by their greater exposure to danger. And in the spontaneous rupture of the heart to the fact that men are more disposed to lesions of the vessels than women.

With regard to the seat of rupture, Ollivier[16] found in 47 cases that the seat of the rupture in 34 was in the left ventricle; in eight the right; in three the right auricle, and in two the left auricle. Bayley has found in 19 cases the seat of the rupture was in 16 the left ventricle, and in three the right ventricle. In 62 cases collected by Bottger, the rupture in 47 was in the left ventricle, in five the right, in five the right auricle, in one the left auricle, one the intraventricular septum, one in both ventricles and in one extending from the right auricle into the right ventricle.

As might be expected the condition is one which is most apt to be found in the later years of life. In 50 cases which Bottger has collected in which the age is given, there were found

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[illegible]	[illegible]
[illegible]	18
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[illegible]	[illegible]
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This is clearly due to the greater frequency of vascular diseases as age advances.

In most cases the rupture is a perfectly clean one making a straight passage through the wall of the heart. This is especially the case when the rupture is preceded by an aneurism. In other cases the rupture does not take place directly through the wall of the heart, but the rupture into the pericardium may be at some distance from the rupture into the endocardium, the blood burrowing into the wall of the heart and making a fistulous passage. In some cases in which the rupture has been preceded by a hæmorrhagic infarction, the hæmorrhage into the muscular tissue is very extensive and from this it appears to penetrate both into the endocardium and into the pericardium. Mettenheiner[17] reports a case in which there was rupture of the myocardium with extensive hæmorrhage beneath the pericardium, which had not penetrated into the pericardial cavity. The pericardium for a considerable distance was separated from the myocardium by the hæmorrhage. Such a case is analogous to a dissecting aneurism. The rupture of the heart sometimes takes place when the patient is quiet and there is no excitement of any sort. In other cases the rupture appears to be due to some sudden increase of the blood-pressure, either brought on by muscular exertion or excitement of some sort.

Wadman[18] reports a case in which in a man, sixty-four years old, rupture took place during coitus, and a number of similar cases have been collected by Bottger. Geo. II, of England, is said to have died from rupture of the heart while at stool, and Philip V, of Spain, on hearing the report of the defeat at Piazensa.

Death is not always instantaneous in rupture of the heart. If the rent be a considerable one and a large hæmorrhage takes place at once into the myocardium, death is instantaneous. A number of cases have been reported in which the beginning of the rupture was apparently marked by fainting and death followed several hours afterwards.

The same effect as rupture of the heart itself may be given by rupture of any of the great vessels within the pericardium. The rupture may take place here, either through an aneurism or through a degenerated spot in the aorta.

In the four cases of rupture of the heart which I have seen, three took place in the left ventricle. One of these was preceded by an aneurism. In two, death was immediate, and in one in which there was a long passage between the endocardium and the myocardium, death was gradual. In another case in which an aneurism of one of the sinuses of Valsalva burst into the right ventricle, the manner of death was also slow. I have also seen one case in which death was due to rupture of the aorta within the pericardium. In all of these cases death is not due to the hæmorrhage. The amount of blood found within the pericardium is never sufficient to have produced death. The amount of blood which is found depends upon the rapidity and extent of the rupture. The pericardium is a distensible cavity, and if the pressure be slow it may be gradually distended to a considerable degree before an amount of blood accumulates within it which will be fatal. The death, of course, is due to an increase of pressure within the pericardium, preventing the entry of venous blood into the heart and so stopping the circulation.

In rare cases sudden death may take place from pericarditis. When the pericardial pressure is suddenly increased by the rapid accumulation of an exudation, death may be sudden. In a case autopsied at the City Hospital during the past year in which death took place suddenly, there was a large hæmorrhage into the pericardium which had evidently come from hæmorrhage from the greatly-distended vessels of the pericardium. This case, however, was complicated by an acute myocarditis which may have contributed greatly to the effect of the pericardial exudation.

Rupture of the heart does not seem to follow cases of ulcerative endocarditis even when the ulceration is extensive. In rare cases the rupture may be due to the presence of new formations in the heart or to parasites. Berth found one case in which rupture had first taken place into a large echinococcus cyst of the heart and then into the pericardium.

Although a circumscribed fatty degeneration of the heart due to coronary disease may lead to rupture, this does not take place in the general fatty degeneration of the cardiac muscle, which comes on in the acute infectious diseases. Probably in such cases there may be combined with fatty degeneration a diminution in the force of the cardiac contraction and the intraventricular pressure.

A much greater number of cases of sudden death is due to disease of the coronary arteries without rupture of the heart. This fact is one to which attention has only recently been directed when greater attention has been bestowed on the pathology of the coronary

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[18] Wadman. Lancet, [illegible].

arteries. It is probable that most of the cases of sudden death without apparent cause, which have been reported, were due to diseased conditions of the coronary arteries which were overlooked at the autopsy. Death from this may be the most sudden of any of the forms of death, whether proceeding from the heart or elsewhere. The individual often falls as if struck with lightning. As in rupture of the heart, death may be preceded by some muscular or psychical disturbance, or it may come on without any immediate exciting cause. The cases are usually those of individuals who have passed the fortieth year, and who have not denied themselves the pleasures of life. All the conditions which favor the development of general arterio-sclerosis favor the similar process in the coronary arteries. In some cases death has been preceded by attacks of angina pectoris, and it may take place in such an attack.

In almost all cases we find that the arterial disease has produced lesions in the myocardium before death. The most common of these are the more or less extensive patches of fibrous myocarditis. Rare cases are seen, however, in which there is considerable disease of the arteries without any macroscopic evidence of degeneration in the myocardium. Microscopic examination in such cases will usually show rather diffuse hyaline degeneration with slight connective-tissue increase. We can easily understand, supposing the circulation in the coronary arteries to be necessary for the function of the heart, that the instant closure of a main artery or a large branch by embolus should be followed by an instant cessation of the heart's function. But it is more difficult to understand the sudden stopping of the heart without any previous symptoms, in those cases in which the closure of the vessel takes place gradually. Cohnheim[19] has shown that tying off a large branch of one of the coronary arteries for a time produces no symptoms, and then there is a great fall of blood-pressure, and, after a few convulsive movements, the heart stops. There is no doubt that disease of certain of the coronary vessels is more serious in its consequences than others. Sudden death is more frequently associated with disease of the descending branch of the left coronary than any other. The gradual closure of the arteries, with degeneration of their walls and nutritive changes in the myocardium, may go on for a long time with but little impairment of function. The last straw, however, is finally laid on the back of the overloaded camel and the back breaks suddenly.

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THE HYGIENIC ARGUMENT FOR CREMATION CONSIDERED FROM A BACTERIOLOGICAL STANDPOINT.[1]

BY A. K. STONE, M.D.

(Concluded from No. 18, page 435.)

THERE remain to be spoken of only the various experiments that have been made to determine the number of bacteria in the soil. The first of these were open to serious error because of faulty technique. But Fränkel[9] and Reimer,[10] the former working on the sandy soil of Berlin, and the latter on the heavier soil of Jena, have arrived at practically the same conclusions in regard to the bacteria in the soil, namely, that the number on the surface was very large, and the diminution from this amount was very rapid, especially after the depth of three-fourths of a metre was reached; and at one and three-fourths metres the numbers were very small indeed. Or, as Reimer puts it, to a certain depth the number of bacteria is very high, but always less than are to be found on the surface. With increasing depth there is a sudden and sharp decrease of the number. The zone in which this sudden diminution takes place is, in both Berlin and Jena, between one and two metres. The exact position of this zone depends on the condition of the soil, as, for example, the line is deeper in cultivated than in virgin soil. At a depth of two metres the soil can be germ free (of ærobic bacteria). More rapid growth is observed in specimens taken from the upper strata than in those from lower.

The ground-water seems to have various influences upon the condition of things. In some cases the regular diminution took place in spite of the presence of the ground-water; in other cases there was a marked increase in the number of germs when the ground-water was reached. So that the conditions of the porosity of the soil and the amount of foul matter poured upon it probably influence the number of bacteria to be found in the ground-water.

An interesting portion of Reimer's investigations is that made in the cemeteries of Jena and Little Jena. Examinations were made in seven graves, which have been in use for from one and one-half to thirty-five years; also a set of control experiments were made in the ditches in neighboring gardens. It was found first: That the number of bacteria in the ground of the graveyards and the gardens was practically the same, though in both cases larger than in ground that had never been disturbed. As soon as a depth was reached where the earth had never been moved, the figures promptly fell to correspond with those of similar depths of virgin soil. The earth immediately below the coffins in the exhumation, showed a marked increase in the number of bacteria over the average of similar depths, yet considering the circumstances, the increase was smaller than was to be expected: while at a distance of half a metre below the coffins, the number of bacteria returned to the average that was to be expected at that depth. At a level of the upper surface of the coffins there was no increase from the average in the number of bacteria found.

Beumer (although his technique is open to criticism) has also similar results to those of Reimer. He did not, however, carry his investigations as far as could be wished, for he made no examination of the earth below the level of the coffins, that is, six feet.

Gärtner[11] also derived similar results from an investigation of two cemeteries.

In 1890, investigations were begun to determine the hygienic condition of the cemetery of the Charité Hospital[12] in Berlin. No burials had taken place since 1859, and the government wished to find out whether the cemetery could justifiably be used for building purposes. Proskauer was detailed by Koch to conduct the investigations, and the results of his work are briefly as follows:

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[1] Read before the Warren Club.

[9] Fränkel: Zeitschrift für Hygiene, vol. ii, 1887.

[10] Reimer: Zeitschrift für Hygiene, vol. iii, 1889.

[19] Cohnheim and Rechberg: Ueber die Folgen d. Kranzarterien-verschliessung für das Herz, Virch. Arch., 85.

[11] Gärtner: Tageblatt der Naturforscher-versammlung, Heidelburg, 1889. Quoted by Prokann.

[12] Proskauer: Zeitschrift für Hygiene, vol. xi, 1891.

At a depth of 1.70 metres the soil is rich in human remains and remnants of coffins. The decay of these human bodies has been so complete in the last thirty-one years that in the upper layers of the earth there was no difference to be discovered, either chemically or bacteriologically, from earth that had never served for graveyard purposes. The chemical investigation at a depth of .5 to 1.50 metres, that is, directly at the level that the coffins had occupied, showed that the earth was in no ways overladen with rotting organic material, and that on the contrary it was poorer in nitrogenous material than Flüge had found in the *aufgeschütteten Boden* — heaped-up earth — of Berlin. From 1.70 metres or from two to six metres in depth, the condition of the soil was similar in all respects to what would be expected in similar soils. There was not the slightest trace of nitrogenous matter and no micro-organisms.

The ground-water of the graveyard and the well-water had the same chemical properties as the water from the surface wells of Berlin, all of which contain large amounts of nitrogenous compounds, particularly nitrates. But Proskauer is of the opinion that the ground-water is already contaminated before it reaches the cemetery, and that there is no increase in the amount of organic matter during its stay within the boundaries of the old graveyard. The ground-water also showed itself free from micro-organisms; and finally Proskauer concludes, after taking everything into consideration from a hygienic standpoint, that there is no reason why the Alter Charité Kirchhof should not be used for dwellings or for hospital purposes.

The work of Domingos Freire, of Brazil, in his investigation of the causes of yellow fever, is frequently quoted as giving strong arguments in favor of cremation. He has stated that he has surely found the micro-organisms causing yellow fever; that he has recognized the same organisms in the earth of cemeteries in which the yellow-fever patients have been buried; and he has also claimed to have found a method of vaccination.

Sternberg,[13] Deputy Surgeon-General of the United States, after a series of investigations into the etiology of yellow fever, was not able to agree with Freire. And in his report, 1888, he states that no such micro-organism as described by Freire, or as shown by him to Sternberg, is to be found in the blood and tissues of yellow-fever patients. In later reports he concludes that the specific infectious agent of yellow fever has not been demonstrated. The most approved bacteriological methods fail to demonstrate the constant presence of any particular micro-organism in the blood or tissues of yellow-fever cadavers. This position is supported by Cormil and Babes in their work on "Les Bacteries," who do not consider that, at the date of their publication, 1890, any specific bacteria of yellow fever had been discovered. Therefore, we are forced to the position that, until further work has been done, Freire's work cannot be taken as authority.

Professor Grancher, of the Faculté de Médecine de Paris, and Professor Richard made a report to the International Congress of Hygiene and Demography, on the Action of the Soil on Pathogenic Bacteria. They reached the following conclusions:

Pathogenic bacteria are everywhere deposited only in the superficial layers of the soil; from .5 metres to 1.5 metres there are very few present. They multiply with difficulty in the ground, though in the spore state they may remain for a long time.

The pathogenic germs are destroyed, partly by the action of the saprophytic bacteria, and partly — when they are on the surface — by the action of the sun; the latter must be considered a powerful destroying agent. Continuous cultivation of the soil, which tends to bring bacteria from the lower depths to the surface, is the very best means to bring about the destruction of the pathogenic bacteria.

Disturbances of the earth's surface — for example, extensive excavations — put in circulation a large number of pathogenic germs. A solid layer of two or three metres of earth is usually sufficient to protect the ground-waters against contamination of pathogenic bacteria.

All the investigations above quoted correspond in a remarkable degree; so that we are justified in saying that, from a purely bacteriological standpoint there is no evidence that a buried body is a source of special danger to the living.

On the other hand, there can be no doubt that water and air are frequently contaminated by the presence of putrefying animal remains, as instanced in the analysis of well-water from cemeteries; as we see by reports of the well near Paris, which became distinctly foul shortly after the interment of the bodies of a large number of Prussian soldiers who had died of typhoid; or the story of the well in Paris where the water, contaminated by cemeteries, had a distinct taste of sulphur, so that it was bottled and sold as a mineral water; or from the undoubted cases where epidemics were of the greatest intensity in the near vicinity of overcrowded graveyards.

Why these occurrences have taken place, and what effect the decay of animal matter has upon the human being, we have at the present time no accurate means of knowing. Such data as we have can only be obtained when we study the subject of putrefaction. We cannot hold the old explanation that putrefaction is simply oxydation — the burning of the animal, in the same way that a bit of the animal would act if it were exposed to the flame. But decay, and the return of the body to its final elements, is not a simple chemical process, as is usually imagined, but a very complicated process, induced for the most part by the action of various bacteria upon the organized tissues, converting them into mid-products. The first stages, according to Flügge, consist in the change of the albumens into peptones, and this may be effected by a large number of bacteria. Among the products of putrefactive fermentation are carbon dioxide, hydrogen, nitrogen, hydrosulphuric acid, phosphoretted hydrogen, methane, formic acid, acetic acid, butyric acid, valerianic acid, crotonic, glycolic, oxalic, succinic, propionic, lactic and amidostearic acids, leucin, ammonia, ammonium carbonate, ammonium sulphide, trimethylamine, propylamine, indol, skatol, tyrosin, neuridin, cadaverin, putrescin, cholin, neurin, peptotoxin and various other volatile acids and ptomains.[14] These special products are not necessarily all present in any given body in the process of dissolution, but vary according to the place where the body may be put, or according to the presence of certain varieties of bacteria.

The nitrification of the organic products is also due to the presence of bacteria; and within a short time two observers, quite remote from each other, have isolated a bacterium, which if not identical, is at any rate of the same species. I refer to Jordan's work at Lawrence, and Winogradsky's at Zurich. Similar work has also been done by Frankland and Warington. Thus far, bacteriological investigations have been confined to those bacteria which accomplish their work in the presence of oxygen, or to the aërobic bacteria; and but little attention has been given to those which work only when oxygen is excluded, the anaërobic bacteria, although it is known that the foul odors of putrefaction belong, for the most part, to the latter class. In none of the investigations above quoted were there attempts to discover the number of anaërobics that might be present, with the exception of the work of Proskauer, who said that some of the human remains were examined for anaërobic germs, but with negative results.

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[13] Sternberg, Manual, 1892.

[14] Sternberg, [illegible]

It is believed by men interested in sanitary questions, that sewage containing excreta and animal impurities, and micro-organisms, is best rendered pure by pouring it out on the soil and allowing it to percolate slowly through the upper layers, where it is met by the bacteria of decomposition which are present, as has been shown above, in great quantities. The retrograde changes then take place with great rapidity, and the whole process is hastened by the action of the sun and by the cultivation of the land; the plants seizing upon the particles of decomposing matter, as soon as it is reduced to the stage where it can become their food.

The difference between this process, which is advocated by many of the best sanitary authorities at present, — as instanced by the many sewage farms in operation, among which may be mentioned Berlin, Paris, and the towns of Framingham and Marlboro in this State, and the Experiment Station of the Massachusetts Board of Health where so many careful experiments have been carried out, — and the process that takes place where a body is buried in six feet of earth, is that in the case of the former, oxygen is always present, while in the case of the dead bodies oxygen is practically excluded; the argument being that the decomposing changes in the case of the sewage take place rapidly, because the bacteria have plenty of oxygen, which is necessary for their development. On the other hand, the dead bodies are buried so deep that all supply of oxygen is cut off, and decomposition does not take place,[15] or takes place so slowly that more of the poisonous mid-products of decomposition are allowed to form, and hence the body becomes a source of danger to the living by those soluble products of decomposition designated by the general name of ptomains, or appearing in the chemical analysis combined under the general heading of albuminoid ammonias.

The only experiment which I have been able to find, that bears directly on the occurrences which take place when a body is buried, is the one which is reported by the State Board of Health.[16]

A tank twelve feet in height was taken and filled to a depth of six feet with layers, first of coarse gravel, then of sand and loam from a cemetery. This was watered weekly, and the condition of the water noted. In December, 1889, the body of a dog weighing eleven and one-half pounds was put into the tank and buried beneath similar soil for the remaining six feet. This tank was watered regularly with an amount of water slightly larger in amount than what would correspond to the average rainfall on the same area. The outlet was tapped, and the escaping water was examined monthly for the space of two years. For six months practically no nitrification of the body had taken place. At the end of that time, there was an increase in both the nitrates and nitrites, and the free ammonia increased rapidly for the next five months, showing 26.625 parts per 100,000 by November, 1890. It then gradually fell off, but at the end of twenty-four months the amount was still 4.75 parts per 100,000. The albuminoid ammonia, in which the dangerous mid-products are represented, if present, increased but little for seven months, and then increased some for two months, after which it increased very rapidly, and for November, 1890, averaged 2.8000 parts per 100,000. From this time on there has been a steady fall, until December, 1891, there was but .1200 per 100,000.

The odor at the effluent grew very strong and offensive through April, May and June, and was most nauseating during the first part of July. Since then it has decreased, but all through the second year it had a strong, offensive odor. In December, 1890, the outlet was trapped, and in this way all possible supply of oxygen entering from below was cut off. The most important effect of this proceeding was, that the number of bacteria per cubic centimetre in the effluent water immediately fell off, and from 4,319 in September, 18,360 in October, 4,796 in November, the number became 96 in December, 362 in January, 10 in February, 52 in March, and has since never been above twenty; and for several months in midsummer was sterile.

This experiment bears out what has been said above, and tends to shift the burden of proof upon the chemists, calling on them to explain what the deleterious effects of drinking-water, which is contaminated with decomposing animal matter, may be.

I conclude, from a study of the effects of bacteria contained in dead bodies upon the health of living persons, that there is no good evidence whatsoever to show that, if the bodies are suitably buried, the bacteria which are probably the cause of the so-called zymotic diseases, can in any way contaminate the ground-water. The harm which decomposing human bodies may exert upon the living must be due, not to the specific pathogenic bacteria, but to poisoning of the air and water by the presence of volatile and soluble substances, which probably have the effect of depressing the general vitality of the persons subjected to the influence.

Under suitable conditions, the earth, with the assistance of the "bacteria of decomposition," appears to be a rapid and sure means by which bodies of persons dying of zymotic diseases may be rendered harmless and converted into material suitable for the maintenance of higher vegetable life.

Experience goes to show that the pathogenic bacteria are unable to resist for any length of time the chemical changes set up in the dead body by the bacteria of decomposition, excepting in the few rare cases, where spores are formed. These are able to resist the putrefactive changes for an indefinite period of time.

At the request of a gentleman who is much interested in cremation, I undertook the task of going over the literature which has accumulated upon this subject and have tried to find out from a bacteriological point of view what arguments could be advanced in favor of cremation. The conclusions reached are not at all in accord with my preconceived ideas, and it appears as though it belonged to the chemists and not to the bacteriologists to prove, if possible, that cremation is a hygienic necessity. Of course economical and æsthetic arguments are entirely uninfluenced by the lack of evidence to support any given hygienic argument.

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[15] Seymour Haden reported that in 1865, when removing corpses from St. Andrew's Churchyard to level Holborn Hill, London, the bodies were in much the same state as when first buried, and decomposition was unadvanced and unadvancing, and little or no difference was discernable between the interments of yesterday and of King Charles II's time. International Congress of Hygiene and Demography, 1891.

[16] Massachusetts State Board of Health Reports. Purification of Sewage, 1890–1891.

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Clinical Department.

DIPHTHERIA: TRACHEOTOMY, PERSISTENT AND INCREASING DYSPNŒA, SYSTEMATIC CURETTING OF THE TRACHEA; RECOVERY.

BY CHARLES L. SCUDDER, M.D.,
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A BOY, four years old, ordinarily in good health, had been ill with diphtheria for two days. His brother, one year younger, had died of the same disease one week previously. He was referred to me by Dr. T. M. Rotch, of Boston.

Very little disturbance of the tonsils and pharynx existed at the time of the first examination, the end of the second day's illness. The breathing was slightly difficult. The alæ nasi dilated a very little, the retraction of the supra-clavicular and epigastric regions with each inspiratory movement was just beginning to be apparent. In short, breathing was slightly embarrassed. The lungs were normal. The heart was in good condition. The temperature was low. The indication *par excellence* for operating was present, namely, increasing difficulty in breathing.

Tracheotomy was done. The relief, of course, was instantaneous. The boy was kept in a cot-bed covered by a hood of sheets, which was constantly filled with steam from two boilers.

All went well until the second day after the operation, when the secretion from the tube became a little sticky and slightly diminished in amount. The character of the secretion improved upon the use of a spray close to the tube, and the boy had a comfortable night. The third night, however, there was serious trouble. The secretion became very slight, the respiration rapid and labored, and the child cyanosed and extremely tired by the tugging for air.

In spite of the removal and cleansing of the inner tube and the removal, cleansing and replacing of the outer tube; the removal of both tubes and the dilatation of the wound; the use of the catheter through the wound, and the introduction of a feather, and later a pair of properly-curved forceps, — notwithstanding all of these ordinary manœuvres for the relief of obstruction below the tracheotomy wound, no relief was afforded. The child was fast losing strength, and was becoming rapidly asphyxiated. It then seemed necessary to resort to a very radical procedure. Having at hand a dull wire intra-uterine curette, this was introduced into the wound, gently carried to the bifurcation of the trachea, and all sides of the trachea — its whole circumference — systematically and thoroughly curetted. As the curetting continued, pieces of membrane, one of which made a complete cast of the circumference of the trachea, were withdrawn through the wound. The hæmorrhage was slight. The relief to the dyspnœa was immediate.

The tube was replaced; and the boy made an uninterrupted recovery. One or two pieces of membrane came away the following day.

Two years have elapsed since the tracheotomy and curetting of the trachea. The boy is well and strong.

This case is recorded to emphasize the importance of systematic curetting of the trachea for obstruction by diphtheritic exudation. The manœuvre was suggested in a conversation with Dr. Wheeler, of Chelsea, Mass., regarding a case which he had likewise curetted. A careful search of medical literature fails to find a similar case recorded.

In the case in hand the diphtheritic inflammation was probably quiescent. The product of that inflammation was separating from the walls of the trachea. Resolution had begun. It was an opportune time to curette.

No general rule can be deduced from a single instance, but it would seem wise to resort to thorough curetting, if, after tracheotomy, dyspnœa increased in spite of all the ordinary procedures, and if the patient is in good general condition.

Intubation would have been of little aid in this instance.

It has been my experience that these cases operated on early in the course of the disease and when the laryngeal symptoms are slight, even though progressive, do better than the cases operated on when the child is exhausted by difficult breathing and by sepsis.

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HINC ILLÆ LACHRYMÆ.

BY DAVID COGGIN, M.D., SALEM, MASS.

TEAR-PASSAGES that are by no means thoroughfares are, as is well known, frequently encountered in our latitude and especially during cold weather. It is likely that more females than males seek advice because of this trouble — whose victims range from infancy to age.

When seen early, the epiphora ordinarily yields to treatment, as by dropping a lotion within the conjunctival sac (such as acid zinci sulph. 0.10, acid boric. 0.50, aqua menth. p. 10.0, aqua camph. 20.0).

Naturally, if the sac is distended, its contents should be squeezed out before using the lotion. Large shade glasses worn out of doors afford relief in some instances.

Rarely the catarrhal trouble is located at the inferior extremity of the nasal duct, and it may subside on applying within the naris a solution of Seiler's tablets, or the like.

Frequently the lower punctum is so small as to be barely visible. In such a case, and also when it is somewhat everted, it is often sufficient to dilate it, as well as the canaliculus, with a small conical probe, and then to inject an astringent lotion with a Meyer's syringe (which has a bulbous tip and is therefore less liable to injure the mucous membrane than is Anel's).

If the fluid passes through the corresponding nostril it is most reassuring to the patient. The country practitioner, who is frequently forced to extemporize apparatus, can make blunt the points of a large darning-needle and of a hypodermic syringe and he will thus have instruments that will be of material aid in treating this trouble.

Even if the nasal duct is closed so that no water passes down into the nose, the frequent use of the syringe is ultimately likely to be of benefit.

But in cases of long standing it is ordinarily necessary to incise (somewhat inwards towards the eye) the outer third of the lower canaliculus, and to make two or three vertical cuts through the narrowed portions of the nasal duct with a probe-pointed knife, which has a long, malleable shank, such as Agnew's. Afterwards, the passing of probes is the routine, but by no means always satisfactory, course of treatment.

Some ophthalmic surgeons prefer large probes — three millimetres to four millimetres in diameter.

My usual practice is to use a Bowman 5–6 (having William's olive tip), and bent to form an arc. I pass the probe and immediately withdraw it, in accordance with the advice once given at Moorfields by the late Sir Wm. Bowman, Bart. Cases occasionally occur where a member of the patient's family learns to pass a probe most deftly. Assuredly, the frequent emptying of the sac by pressure and the use of an eye-water are to be preferred alone rather than in connection with harsh probing by whomsoever done.

In acute inflammation of the lachrymal sac (abscess of the tear-passage), on using cocaine and introducing an Anel's probe through the lower canal into the sac, it is often possible by an in-and-out motion, in conjunction with gentle pressure on the distended sac, to evacuate so much pus as to relieve the tension and pain. On applying moist heat for ten minutes every hour, and on repeating the emptying of the sac two or three times, resolution may occur.

Several timid patients have been thus relieved — the last one quite recently. One was a man who declined to have the abscess punctured, and on three occasions, at intervals of, perhaps, as many years, a probable perforation through the skin with a resulting disagreeable fistula of the lachrymal sac was apparently avoided by performing this little manœuvre.

In chronic dacryocystitis with great distension of the sac-cavity, so an unsightly tumor was a cause of annoyance to the patient, after opening and appropriately treating the passage to the nose, ordinary contractile collodium (U. S. P.) was painted on the external surface of the tumor, renewing it every day or two, till the swelling had quite disappeared and the capacity of the sac had been restored to its former limits, while the epiphora was no longer present.

It has never been my fortune to either apply caustics to cause obliteration of the sac, or to excise it.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

LOCAL ANÆSTHESIA.

VON HACKER[1] has published his results relating to the use of cocaine and æthyl-chloride for purposes of local anæsthesia. The preparation of cocaine found most satisfactory was:

℞	Cocaine	0.1
	Sodii Chloride	2.00
	Aquæ	100.00

Of this solution 10 grammes, the amount usually used, contains 0.01 gramme of cocaine. The solution should be injected into and under the skin so as to create an œdematous-like condition. Distinct wheals are formed. When so used, von Hacker found that minor surgical operations were absolutely without pain. The method is not suitable for extended operations. The chloride of æthyl spray was also found to be quite efficient for small operations and quite simple in application.

SURGICAL SIGNIFICANCE OF DUST.

The interesting editorial of Warbosse,[2] in which he describes at length the important work of Hægler,[3] deserves a careful perusal. The article is too long to report in detail. The results reported have an important relation to operative work and wound treatment. The work seems to show that the important factor in atmospheric infection is dust; that this contains the germs; that air in a room unagitated contains few germs; that the atmosphere of an unclean room in a state of rest is freer from germs than that of a comparatively clean room in a state of commotion. Dry dressing and dry treatment of wounds allow a greater distribution of germs into the atmosphere than moist ones. It is true that the danger of infection from air containing pathogenic microbes is much less than from other sources. Still, it is of enough importance to be considered when one is striving for complete asepsis. Hence attention should be paid to diminishing or eliminating the harmful effects of dust. Also to prevent the conversion of infectious material into dust, as by the dessication of pus, agitation of dry discarded dressings, or in similar ways. The methods proposed for the removal as far as possible of this liability of infection during operative work or the dressing of wounds were to avoid agitation of the air at such times or to precipitate all dust by charging the atmosphere with moisture, so that during its precipitation the dust is carried down with it and the air is thus cleared as during a shower. The moist surface thus produced holds such precipitated dust fast for a time, and prevents its renewed circulation by air currents. The article is an important one, and is a valuable contribution to the knowledge of asepsis.

SALINE INFUSION.

The value of this method of treatment of severe surgical shock as well as for cases of severe hæmorrhage, with or without strychnia, is emphasized by Dr. Sternberger,[4] who reports two severe cases of collapse, which were apparently rescued by the infusion. Three pints were syphoned into the median cephalic vein. In one case the infusion was repeated at the end of fifteen hours. The six-tenths-per-cent. solution was used at a temperature of 117° and 118° F. Dr. Sternberger considers the high temperature of the infusion and the after-use of strychnia important factors to his success; also the amount of infusion (three pints).

The saline solution can also be used subcutaneously for the same purpose, or by enema. The former method has recently been described by Dr. Farrar Cobb.[5] The apparatus used was a metal aspirator trocar with stop-cock and side entrance connected by rubber tube with a glass or hard rubber funnel. The trocar is sterilized by heat, the tube or funnel with sublimate solution (1 to 1000). The sterilized salt solution was kept at a strength of twelve parts in one thousand, so that the addition of an equal amount of boiling water makes a solution of the strength usually used (6 to 1000) and of the right temperature for instant use. This arrangement is good for emergency work. The preparation is simple and rapid. The solution is syphoned through the trocar into the subcutaneous tissue of the inguinal and femoral regions. It can be done more rapidly than the intravenous method. The reported results were satisfactory.

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[1] Wien. Klin. Woch., 1893, vi, 10.

[2] Annals of Surgery, 1893, vol. xvii, 164.

[3] Beiträge z. Klin. Chir., Bd. ix, Heft. 3.

[4] New York Medical Record, 1893, vol. xliii, p. 5.

[5] Boston Medical and Surgical Journal, 1893, vol. cxxix, 325.

Another method which has attracted little attention, but which has given striking results, is that of arterial infusion. This has recently been perfected by Dawbarn,[6] who records the resuscitation of several almost moribund patients. The solution at a temperature of, at least, 120° F. is syringed into the femoral artery through a Davidson syringe and a hypodermic needle.

NEURECTOMY IN SPASMODIC TORTICOLLIS.

Gardner and Giles,[7] in a paper on neurectomy in spasmodic torticollis and retrocollic spasm, report two cases, one of spasmodic torticollis, the other of retrocollic spasm without torticollis, which were treated by exposure and partial resection of both spinal accessory nerves and subsequent division of the posterior branches of the second and third cervical nerves. This treatment was completely successful in the first case, nearly five years having elapsed since the last operation; in the second case it was followed by ceasation of all bad symptoms, save some trifling spasmodic movements of the deep rotators of the left side, which it is anticipated will be completely cured by another operation. Gardner, who had charge of these cases, claims precedence over Keen with regard to section of portions of the posterior branches of the second and third cervical nerves, having performed this operation a few months before it had independently been thought out and practised by the latter surgeon. The following general considerations regarding the operation are deemed advisable to observe in the surgical treatment of these distressing cases:

(1) The operation on the spinal accessory nerve should precede, by a considerable interval, the difficult operation on the cervical nerves for two reasons: (*a*) because the milder operation has been known to be successful, even in cases in which spasmodic movements occurred in muscles not supplied by the spinal accessory nerve; (*b*) because the trapezius being completely paralyzed after neurectomy of the spinal accessory, time is also given for a more complete study of the muscles involved in the spasm, and in this way unnecessary operations with their risks and resulting scars may be avoided. (2) If the sterno-mastoid is involved in the spasm, the spinal accessory nerve should be exposed in front of this muscle, but if the trapezius alone is involved the nerve should be sought for by an incision along the posterior border. In neither case need the incision, if properly placed, exceed the length of two inches. (3) No injury to the patient will arise from the paralysis of muscle as to function. From an æsthetic point of view it is of advantage that the extent of the spasm should necessitate an operation on both sides, as thereby dissimilarity in the appearance of the right and left muscles is avoided. (4) The neuralgia which follows section of the nerves is especially felt in the shoulders, and appears to be of very fleeting character. (5) The spinal accessory nerves may be both cut down upon at the same operation, as the whole procedure can be performed with precision in about fifteen minutes. In the case of the posterior cervical nerves the two sides should never be attacked at the same stage, because the duration of the double operation might seriously increase the risk to the patient, or the onset of dangerous symptoms might necessitate the second operation being left unfinished.

A NEW AND SAFE METHOD OF CUTTING ŒSOPHAGEAL STRICTURES.

This is described by Dr. Robert Abbe,[8] and is claimed by him to have been successfully used, and to be superior to the "Billroth" method (external œsophagotomy and division of stricture by incision, for high strictures only), or internal œsophagotomy, an operation always "in the dark" and at times very dangerous. It is especially indicated in cases of dense fibrous strictures such as result from lesions due to caustics. For "impermeable" or very tight strictures, gastrostomy through the oblique incision, parallel to the costal arch is first performed. The œsophageal orifice is explored with the finger and a small conical (gum elastic) bougie guided into it with the finger. Dilate, if it can be done without force, by the gradual method. If unyielding, carry a heavy braided silk ligature by a small bougie up the œsophagus until it can be drawn out through the mouth. The largest bougie which the stricture will admit is now introduced so as to put it on the stretch. The string is now drawn upward by the fingers introduced well back in the mouth, and the bougie is felt to advance as the tense string wears away the tense stricture. The operator see-saws the string up and down, while his assistant presses the bougie gently through the stricture. Larger bougies are passed in the same way as the stricture yields. When the desired dilatation is attained, a rubber-tube of corresponding diameter is drawn up into the œsophagus till one end is above the seat of the stricture and the other remains outside the abdominal wound. A smaller tube is also introduced into the stomach for nourishment. The patient can thus swallow water to clean the mouth, or saliva, without injury to the wounded surface. The tube also keeps up dilatation. It is removed on the second or third day and the subsequent dilatation accomplished through the mouth by bougies. The gastric fistula is subsequently closed as soon as the condition of the patient will permit the operation, in one case eight weeks after the primary dilatation.

INTRA-ABDOMINAL ADHESIONS THE CAUSE OF SEVERE PERSISTENT COLIC.

Dr. Carl Lauenstein reports ten cases. The diagnosis was confirmed by operation.[9] The cases are reported in detail. In all the adherent surfaces were dissected apart. Bands and strands were extirpated. The results were nine permanent cures and one death. The statements of Lauenstein relating to diagnosis are as important as those describing the treatment. The diagnosis is difficult and is made only after a careful study of the case and exclusion of other causes. The noticeable facts thus obtained are the absence of febrile disturbance. The appearance of the patient as if a severe affection were present. The localization of pain at definite points in the abdomen. Unfortunately, however, there are cases in which a probable diagnosis is impossible and when an explorative laparotomy is the only solution of the problem.

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[6] [illegible]

[7] [illegible]

[8] [illegible]

[9] Arch. f. Klin. Chir., 1893, xlv, 121.

ASEPSIS IN LAPAROTOMY.

Minnow, at the Gynecological Klinic of Professor Fritsch, of Breslau, has made an investigation to ascertain if a perfect method of asepsis was possible or practical.[10]

The operative work was done in rooms that were especially reserved for this class of cases. The same rule was carried out with reference to equipment, that is, tables, operating clothes, instruments, aprons, etc. Sterilization was by steam, at 100° C., for one hour immediately before operating. The water was boiled for one hour. Instruments were cleansed with a two-per-cent. carbolic solution. Hands (and patient) were subjected to mechanical cleaning in sublimate solution (1 to 1000) for five minutes, and then bathed in sterilized water. The silk ligatures were sterilized by steam for one hour. No antiseptic solution was used in the abdomen. The dressing was sterilized gauze and cotton.

The contents of the abdomen were tested bacteriologically, before and after the operation in each case. He thus investigated thirty-one cases where the abdomen was opened. Of twenty-eight cases examined at the end of an operation, micro-organisms were identified in twenty. The remaining eight showed no trace of bacteria. When the examination was made as soon as the peritoneum was opened, micro-organisms were demonstrated only thrice in twenty-three cases. The inference is that entrance of germs was during the operation from without and that the present aseptic method does not preserve the abdominal cavity from the entrance of germs in a bacteriological sense. But it was also found, that, although the above conditions were present, septic infection was seen only in one case, a patient septicæmic before the operation. In eleven of fifteen cases where bacteria were found, marked elevation of temperature was observed. Examination of the air in the vicinity of the open abdomen showed the same micro-organism as the cultures from the abdomen. Hence, although of a so-called non-pathogenic nature, these bacteria were apparently the cause of the temperature elevation, 38° C., which in some cases lasted several days. Most of the patients recovered without this febrile reaction where the abdominal exposure was of short duration. Other facts reported are that it is very difficult to furnish an operating-room with air free from bacteria. That the peritoneal cavity does not contain germs which can be cultivated by the gelatine and agar-agar method. That adherent Fallopian tubes or cysts in most cases, even when their contents are purulent, show no living micro-organisms. That the abdominal surgeon has to deal in a large number of cases with non-infected tissue and that asepsis, although not perfect, is enough for practical results. When septic infection exists in uterine cases an operation should be preceded by uterine irrigation followed by an iodoform gauze tampon. That infected tissues should be removed by Pacquelin cautery rather than with the scalpel or scissors.

THE ACCIDENTS WHICH MAY FOLLOW REMOVAL OF PORTIONS OF THE OMENTUM IN OPERATIONS FOR HERNIA.

W. T. Bull,[11] has recorded a number of interesting accidents under operations for hernia, and he states that in dealing with the omentum the following dangers are to be borne in mind:

"(1) Bleeding from inefficient ligature.

"(2) Damage to neighboring intestine from faulty application of the ligature.

"(3) Inflammation and abscess of the omental stump.

"These dangers should make the management of the omentum the subject of special care. Any threatened inflammation should be met with prompt incision so soon as symptoms are urgent."

THE RADICAL CURE OF HERNIA BY BONE PLATES.

Thiriar,[12] has operated upon twenty-five cases of hernia by interposing a decalcified bone plate somewhat larger than the internal ring between the peritoneum, which has been dissected up from the inner surface around the stump of the previously ligated hernial sac, and the abdominal parietes. This plate is secured in position by sutures so adjusted as to approximate the layers of the abdominal wall. He uses bones from a beef. The bones are denuded of periosteum and placed in a ten-per-cent. solution of hydrochloric acid. They are sufficiently soft when they are pliable under water. These pieces of bone are then placed in a 1–1000 bichloride solution, and finally preserved in an ethereal solution of iodoform, but before use they have to be dehydrated in ninety-five per cent. of alcohol.

(To be continued.)

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Reports of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

TENTH ANNUAL MEETING, NEW YORK, OCTOBER 9, 10, 11 AND 12, 1893.

INTRODUCTORY SESSION.

MONDAY EVENING, OCTOBER 9TH.

The meeting was opened by an Address of Welcome by the Chairman of the Committee of Arrangements; following this came an address by the President, Dr. S. B. Wylie McLeod. He naturally took a retrospective glance at the work of the past ten years, and alluded to the growth of the Association and the variety of the scientific contributions. Although the Association was only organized on February 4, 1884, it now has a membership of eight hundred, and its library has increased to nine thousand volumes.

Dr. John Shrady also delivered an address in which he went over much the same ground, only more in detail. The address by Dr. Gouley on "The Nosology of Disease"; the one on "Pathology," by Dr. E. G. Janeway;" the paper by Dr. Van Zandt, on "Commercial Prescriptions;" the discussion on "The New Hypnotics;" the discussion on "Peritonitis;" and that on "Pneumonia," were mentioned as having been particularly interesting and profitable.

A special feature had been the "prepared" discussions, a plan first devised and put in practice by the British Medical Association, and now very generally adopted by our more progressive medical societies. It had saved much time, and added greatly to the scientific work of the Association. The first discussion of this kind was on "Pneumonia," and was suggested by Dr. Flint. The speaker also referred to a contribution in which is given the history of what is claimed to be the first case of nitrous oxide anæsthesia. The date is fixed as November 25, 1821, and it is said that the subject was a young man who surreptitiously inhaled a large quantity of the gas from a tank placed in a room adjoining one in which an exhibition was being given of its peculiar properties.

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[10] Centbl. f. Gynekologie, 1892.

[11] Annals of Surgery, March, 1893.

[12] Le Merc. Med., 1893.

Among the more recent papers, was a practical paper by Dr. James G. Porteous, of Dutchess County, entitled "Winter Cholera." It describes the prevalence of choleraic diarrhœa in Poughkeepsie, due, as the author very clearly shows, to contamination of the river water which is supplied to the town. With this paper the writer presented some very interesting researches on drinking water, made by the bacteriologist, Dr. E. K. Dunham, of New York.

FIRST DAY (TUESDAY). — MORNING SESSION.

Dr. James G. Porteous, of Dutchess County, read a paper on the

PREVENTION OF DISEASE,

in which he referred particularly to the many ways in which tuberculosis is spread broadcast over the land, and of the simple measures by which it could be very materially restricted. He showed a printed card which he gives to his consumptive patients, and which gives them directions how best to avoid carrying the infection to others, and at the same time, reminds their friends how they can best assist in this good work. For instance, it advises consumptives to avoid spitting on the floor or in public vehicles, to have separate table utensils and linen, to sleep in a separate bed and to abstain from kissing people. The well persons are informed that this disease is principally communicated by the swallowing of the germs, by inhaling them and by their introduction into wounds. They are cautioned not to eat or sleep with consumptives, or to use clothing belonging to such patients, and especially to be very careful not to put in their mouths such small articles as coins which have been handled by tuberculous patients. As a precautionary measure, they are advised not to kiss on the lips *any one* who has a cough.

Dr. E. D. Ferguson, of Rensselaer County, read

AN ADDITIONAL NOTE ON NEPHROTOMY AND NEPHRECTOMY,

in which he stated that many of these cases are not originally tubercular. He prefers a free incision and packing of the wound, to the use of a drainage-tube.

Dr. John Cronyn, of Erie County, in discussing the paper, illustrated the difficulties of diagnosis by relating the history of a lady who, for four years, had symptoms referable to disease of only one kidney, yet the post-mortem examination showed that both kidneys contained calculi. He expressed the hope that some of these difficulties would vanish under the more general and expert use of the cystoscope or some similar method of examination.

Dr. Ferguson said that many of these cases of renal disease begin at the inferior portion of the genito-urinary tract and spread upwards. Although frequently not primarily tubercular, they are quite liable to become infected secondarily. He disapproved of the use of the cystoscope and of ureteral catheterization on account of their liability to aggravate the disease.

Dr. Gouley coincided in this view, and stated that not only was an exploratory operation comparatively safe, and much more satisfactory in its results, but it afforded an opportunity, in the event of the diagnosis being confirmed, to immediately perform nephrotomy. Nephrectomy should not be resorted to except as a subsequent measure.

Dr. Nelson J. North, of Kings County, in a paper on

THE TREATMENT OF EPITHELIOMA AND THE CHANCROID ULCERS BY TOPICAL APPLICATION,

described the favorable results he had attained by the local application of concentrated lactic acid to cases of epithelioma and uterine carcinoma. The treatment was particularly applicable to inoperable cases. This acid does not produce an eschar, but seems to destroy the vitality of the abnormal cells. It has little or no action on normal tissue. When applied to a carcinoma, the tumor becomes brownish, shrinks up and discharges after a short time a thin, brownish fluid.

AFTERNOON SESSION.

Dr. N. P. Dandridge, of Cincinnati, read a paper on

THE SURGICAL TREATMENT OF PULMONARY CAVITIES.

This treatment is applicable to cases of abscess of the lung, gangrene of the lung, hydatid cyst and to tubercular or bronchiectatic cavities. Of course, in most cases of bronchiectasis, the cavities are so numerous that surgical treatment cannot be employed, but when there is one cavity much larger than the rest, and the secretion is quite abundant, it is proper to look for a good result from surgical interference, if the cavity is sufficiently accessible. Tubercular cavities are usually still more favorable, as they are ordinarily more superficial. The following case was cited as an illustration of the type considered by the author most favorable for surgical treatment: The patient was a man, twenty-nine years of age, having a decided phthisical family history. He had a constant dry cough, a slight fever and severe pain in the right side of the thorax. The cavity having been located, it was exposed by incision and resection of three inches of the eighth and ninth ribs in the axillary line. The cavity was very superficial and its walls were rough, as is commonly seen in phthisical cavities. About half a pint of sanguineous fluid was removed, the cavity washed out with sterilized boric-acid solution and a drainage-tube inserted. This patient improved steadily and rapidly after this operation. An operation of this kind is not infrequently undertaken under the supposition that the case is one of localized empyema. The operation when performed in properly selected cases is easy and comparatively free from danger.

In gangrene, abscess and hydatids of the lung, modern opinion favors incision and drainage of the cavities, when these can be accurately located and easily reached. The cavities should be packed with iodoform gauze after incision.

It goes without saying that the danger of the operation is greatly augmented by the absence of protecting adhesions between the pleura and thoracic wall. A large aspirating needle is used in locating the cavity, and it then serves as a guide for the knife. It should be remembered that the quantity of material expectorated bears no constant relation to the size of the cavity.

DISCUSSION ON LESIONS OF THE PLEURA.

This was one of the "prepared" discussions already alluded to. It was opened by DR. JOHN SHRADY, of New York County, who propounded the following questions:

Question 1. — What are the factors of pleurisy? Its forms and contributive conditions? What are the pathological changes in a case of progressive pleurisy ending in recovery?

Question 2. — What are the points of differential diagnosis in pleurisy and other affections of the chest?

Question 3. — What is the treatment of empyema, with relative value of aspiration, rib-resection and free opening with tube drainage?

Dr. Shrady looked upon cold and traumatism as the chief etiological factors, and he said that the fact that a given case was due to traumatism would be generally revealed by the withdrawal with the aspirator of bloody fluid. The key to the diagnosis of pleurisy with effusion is the shifting line of dulness obtained by percussion over the upper part of the thorax, the patient's position being changed from time to time during the examination. Tubercular pleurisy is commonly revealed by the presence of peritoneal or pericardial complications.

Adopting Osler's recommendations, the treatment of pleurisy with serous effusion may be said to be the adoption of measures calculated to limit the exudation at the beginning, allay pain, relax the bowels and reduce the fever; in the later stages, the treatment must be directed to promoting the absorption of the effusion. Aspiration should be resorted to, when there is sufficient fluid to cause intermittent orthopnœa, when it half fills the pleural cavity, when it shows no sign of being absorbed after a month and always when it becomes purulent. Aspiration is best performed, when circumstances permit of selection, in the sixth intercostal space, in the axillary line and close to the upper border of the seventh rib.

Empyema may be secondary to such diseases as pyæmia and puerperal septicæmia; in adults, however, it is most commonly associated with pulmonary tuberculosis. The fact that symptoms of suppuration are not evident until some of the pus has been absorbed, should lead one to be particularly alert to detect this change in the character of the pleuritic effusion. If a simple incision does not admit of free drainage, it is advisable to resect a portion of the lower rib, but it should be remembered that this does not necessarily mean that the entire width should be excised. A rubber drainage-tube, preferably without lateral openings, should be inserted and sutured to the skin. In conclusion, the writer said: "Bowditch, of Boston, after all did not leave us much to learn; he was first rational, then bold, then lucky."

DR. WILLIAM MCCOLLOM, of Kings County, read a paper in reply to the first question propounded. He is a firm believer in the theory that the streptococcus, staphyloccus and pneumococcus have an important etiological relation to pleurisy, and he explains the various discrepancies which have arisen in the various researches on this point, by supposing that the investigators have made their examinations for these organisms at different stages of the disease. Again, the pneumococcus is a short-lived micro-organism and hence it does not follow because it was not found in the exudate, that it had not been present at an earlier stage than at which the examination was made.

DR. J. BLAKE WHITE, of New York County, replied to the second question. He said that localized pain cannot be considered as characteristic of pleurisy, although many times its peculiar character may aid us in the diagnosis. The pain may be misleading by being referred by the patient to another part, as the abdomen. Nor can dyspnœa by itself be relied on as a characteristic of pleurisy. Where the pleurisy is of tubercular origin, there is usually, first, cough, then pain in the side, and lastly, dyspnœa, whereas in other pleurisies, there is usually first pain in the side, secondly, dyspnœa and then cough. The tendency to clear the throat frequently when there is no lesion in the throat is strongly indicative of pleuritic adhesions. A short cough points to these adhesions being high up in the chest, and a more prolonged cough, to adhesions lower down. The speaker asserted that no investigation yet made had proved conclusively that pleuritis is due to microbes. The presence of such microbes in pleuritic exudations by no means establishes their causal relation. Tuberculosis affords the strongest argument in favor of the microbic theory, and yet he is a poor diagnostician who waits for the microscope to make the disgnosis in these cases.

DR. J. G. TRUAX, of New York County, also discussed the second question. He said that the pleuritic friction râle is quite localized, frequently changes its position, is often heard within a few hours after the onset of the disease, and may be felt as well as heard. It may be mistaken by the tyro for bronchial crepitation.

DR. CHARLES A. LEALE, of New York County, answered the third question. As an illustration of what may be accomplished in cases of empyema, without resort to operation, if circumstances are favorable, he related the history of a boy, who, after treatment for two years, was practically well, and at the end of five years from the occurrence of the empyema, the lung and pleura were found in normal condition. He said that whenever he heard free incision into the chest advocated, he was reminded of an army officer who came under his observation with a large wound in the thorax. This man begged most piteously to have the opening closed that he might be relieved of his intense and constant suffering.

Incidentally, also the speaker referred to a case in which a robust farmer contracted tuberculosis from his wife, and developed an empyema. Fortunately his health was completely restored by a long residence in Egypt, and the patient was not then willing to believe that he had ever had pulmonary tuberculosis, yet the post-mortem examination showed only too plainly the evidence of his former consumption. Nature had been kind to this man, yet he thought if her beneficent process of repair had been interfered with by an operation on the empyema, it is hardly probable that there would have been the thick, protecting exudation which was found at the post-mortem and which had offered an effectual barrier to the progress of his consumption.

DR. THOMAS H. MANLEY, of New York County, dropped a bomb into the camp of those who defend aspiration in serous pleurisy by boldly asserting that not one of his cases treated by aspiration had lived more than three years, and his experience with this treatment had been to fully confirm what had been stated by a distinguished French authority regarding the dangers of thoracentesis.

Dr. Cronyn expressed his regret at hearing this declaration from Dr. Manley, for he had long made early and free use of the aspirator in serous pleurisy, and, he was convinced, with the best results. He was not in favor of treating empyema by resecting the ribs, because this practice is totally unnecessary.

He said he had noticed that sometimes certain diseases appeared to be cured by metastasis, and in support of this view he cited a case — one of several similar ones — in which a patient under his care, with pulmonary tuberculosis, was suddenly cured of his tuberculosis by an attack of acute mania.

Dr. Donald McLean, of Detroit, said he had discarded the aspirator except in occasional instances as an aid to diagnosis. His objection to it was, that it was incapable of completely evacuating a cavity. Resection of the ribs is done in obedience to one of the most important and widely-recognized principles of surgery, namely, the establishment and maintenance of free drainage.

Dr. Dandridge also favored resection of the ribs. With regard to aspiration, he said it possessed one decided advantage over an opening into the chest, and that was it maintained a negative pressure in the pleural cavity, which was exceedingly useful in aiding the expansion of the lung. It is a useful method of treatment, therefore, even though it may be necessary subsequently, as it will probably, to resort to incision.

EVENING SESSION.

Dr. Austin Flint, of New York County, read a paper on

FERMENTATIVE DYSPEPSIA.

He said he had yet to see a case that had been benefited by the ordinary preparations and combinations of pepsin and so-called pancreatin, although he did not wish to include in this condemnation, the use of partially digested or peptonized foods. Digestion is one of the most complex of the physiological processes, and even now is but very imperfectly understood. It is well known that the combined, as well as the successive action of the digestive fluids is essential for normal digestion. The distress after eating, experienced by many dyspeptics, is not necessarily due to a deficiency of pepsin; it is rather brought on by the accumulation of gases in the stomach, as a result of the fermentation of the food. This fermentation he believed was due to the action of micro-organisms. For proper intestinal digestion, the so-called pancreatin, which is really a combination of several substances secreted by the pancreas, requires the assistance of the bile and of the intestinal juices which are of unknown composition. Fermentation usually begins in the stomach, and is continued in the intestine. When it originates in the intestine, there is usually a deficiency of bile, and there is apt to be more or less diarrhœa present. When the digestive discomfort begins two or three hours after taking food, and diarrhœa and flatus are present, it is probable that the fermentation is purely intestinal. It is very important to relax the bowels, or at least, to regulate them, and for this purpose he had found Villacabras water very useful. The dose must be carefully adjusted to the individual, and enough given to produce a free movement. It will then be found that the bowels will usually continue to move daily for several days, after which the dose may be repeated. After it has been used in this way for a time, it will often be found that the dose can be diminished rather than increased as is the case with many similar remedies.

The author said that in the treatment of fermentative dyspepsia, he had found his father's well-known practice of giving salicin in ten-grain doses before meals very useful, but in about twenty-five per cent. of the cases it failed. During the past ten months he had been prescribing the subgallate of bismuth in five-grain doses, either before or after meals, and he had only noted two cases during this time in which it had failed. Both of these were very chronic, and had previously resisted a great variety of remedies. He was led to employ the subgallate of bismuth from its reputed success as an intestinal antiseptic in the diarrhœa of children. The medicine is best given in capsules or in tablet form.

Dr. Cronyn thought that in the same class of cases in which Dr. Flint would give the subgallate of bismuth, equally good results would follow the administration of dilute hydrochloric acid, for he believed the condition was primarily due to a deficiency of this acid in the stomach. He called attention to the fact that dyspepsia is often kept up for a long time by a too prolonged adherence to some special diet.

Dr. Henry F. Risch, of King's County, said that it was essential to the successful treatment of fermentative dyspepsia to determine whether the fermentation was due to the hydrocarbons or the nitrogenized substances. If due to the decomposition of hydrocarbons, the product of the fermentation will be carbonic acid gas, but if to the latter, it may be detected by the foul odor imparted to the patient's breath. Having ascertained which class of food-stuffs is the offender, this must be excluded from the dietary. Until this is done, there is but little use in resorting to medicines in a haphazard way.

Dr. C. A. Leale said that lavage of the stomach and bowels had been extensively practiced on the infants brought during the last summer to St. John's Guild Hospital, suffering with diarrhœa. Having cleaned the alimentary canal in this way, the infants were given only sterilized milk, and, as might be expected, all the symptoms promptly improved. The tris-nitrate of bismuth and Fowler's solution had also been found useful in restoring the digestive tract to its normal state.

Dr. John A. Wyeth, of New York County, read a paper entitled

BLOODLESS AMPUTATION AT THE HIP-JOINT: REPORT OF CASES OPERATED ON BY THE AUTHOR'S METHOD.

This method was introduced by him to the profession in 1890. He presented brief histories of thirty-nine cases in which this method of amputation at the hip had been adopted, and the fact that this series included a great many operators of widely different degrees of experience and skill only served to enhance the value of these statistics. Sixteen of the amputations were done for sarcoma, with two deaths, or 12.5

per cent. mortality; eighteen were for inflammatory disease of bone, with three deaths, or 16.6 per cent. mortality; four cases were for severe injuries, with four deaths, or 100 per cent. mortality; and one case was for a nerve lesion; recovery. In other words, thirty-five cases were for disease, and of these, five died, or 14 per cent.; the four cases of injury all died.

(*To be continued.*)

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MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPER, M.D., SECRETARY.

Regular Meeting, October 4, 1893, the Vice-President, **Dr. S. W. Abbott**, in the chair, and twenty members present.

Prof. William T. Councilman read a paper on

THE PATHOLOGICAL CONDITIONS OF THE HEART WHICH RESULT IN SUDDEN DEATH.[1]

The reading of the paper was followed by a demonstration of anatomical specimens illustrating thrombosis, hypertrophy with dilatation, cardiac rupture and aneurism in the wall of the left ventricle.

Dr. Hartwell, of Ayer, said he desired to express his thanks to the writer of the paper for setting forth so clearly various points relative to cardiac emergencies which had been obscure. Physicians at a distance from populous centres had comparatively rare opportunities to study these cases and still rarer opportunities to observe the anatomical appearances. It was, therefore, very helpful to hear such a clear and instructive paper on a subject which was especially interesting to medical examiners. He mentioned two cases of rupture of the heart, both in old people and both involving the left ventricle.

Dr. Swan, of Cambridge, reported the case of a man, forty years old, who fell dead at his work-bench. The autopsy found the cause of death to be hæmorrhage into the pericardium through a rent in the wall of an aneurism of the aorta, just above the valves.

Dr. Hough, of New Bedford, had seen a case of rupture of an aortic aneurism with death in less than a minute.

Dr. Seymour, of Northampton, presented a communication relative to a case of sudden death in which his right to make an inspection of the body which had been found dead in bed was disputed by a physician called in to the case, the reason for the objection being that he, the latter, was of the opinion that the death was caused, probably, by heart disease and not by violence. The county commissioners had supported this view of the case and had disallowed Dr. Seymour's account for his medical examiner service in investigating the circumstances of the death according to the requirements of the statutes. Dr. Seymour argued that it was only by "personal inquiry," and sometimes by "further examination," when personal inquiry failed to solve the doubt, that the element of violence could be excluded in such instances and insisted that the medical examiner was the proper one to make the investigation.

The **Chairman** spoke of the importance of the subject as a practical question and said that it was obvious that in a death under such circumstances the element of violence, or its absence, could not be determined accurately except by such methods as the law required in the statute relating to inquests.

The matter was farther discussed by Drs. Hough, Dolan, Bronson and Presbrey, the prevailing sentiment favoring the view that the cases of persons "found dead" were proper cases for a medical examiner's investigation, although at the time of the finding a suspicion of violence was not yet entertained and had not been expressed.

Dr. Dolan, of Fall River, read a paper on the

RIGHTS AND DUTIES OF MEDICAL EXAMINERS IN THE INVESTIGATION OF CERTAIN CASES OF HOMICIDE.

He defined the methods which he believed should be taken to secure evidence, the medical examiner's control of premises where a homicide has occurred, the notes which he should take concerning the temperature of the dead body, its position, color and surroundings; its internal condition as shown by autopsy with especial attention to the contents of the stomach. The value of photography in delineating the attitude and external appearance of the body was mentioned. The reader justified the decapitation of the body and the preservation of the injured parts of the skull, if the case were important and the head were the part attacked in the killing. The correct demeanor of the medical examiner on the witness stand was outlined.

Dr. Presbrey, of Taunton, said he thought the use of the ordinary clinical thermometer for determining the temperature of dead bodies was of limited value, since these instruments register down to 94° only and are not available for temperatures below that.

Dr. Dolan replied that where two homicides, nearly coincident, are to be studied, accurate determination of the body-heat in the two cases is important in deciding the question of the priority of death.

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SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

REPORT OF THE COMMITTEE APPOINTED TO SECURE FROM THE LEGISLATURE "IMPROVED SANITARY LEGISLATION."

At a meeting of the Clinical Section held October 18th, Dr. Cheever, as chairman of the committee, made his report. This committee was appointed November 16, 1892, by Dr. F. C. Shattuck, chairman of the Section, in accordance with the recommendation of a previous committee to present Propositions 3 and and 4 of their report[1] in proper form to the Legislature. These propositions refer to sanitary legislation in the State of Massachusetts.

Boston, June, 1893.

The Committee appointed by the Section on Clinical Medicine of the Suffolk District Medical Society, "to secure from the Legislature improved Sanitary legislation," respectfully report, that they have failed to obtain the sanction of the General Court to two of the measures proposed, and ask to be discharged.

Your Committee, after numerous meetings, to which members of the State and City Boards of Health were invited, formulated three bills (here appended) which were kindly prepared by Mr. Ernst, as counsel.

No. 401,[2] provides for advisory medical inspection, throughout the State.

No. 402, provides for the registration of vital statistics under supervision of the State Board of Health.

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[1] See page 457 of the Journal.

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[1] See Boston Medical and Surgical Journal, December 22, 1892, p. 610.

[2] Boston Medical and Surgical Journal, vol. cxxviii, page 528.

No. [illegible] makes obligatory a return of all contagious cases to the State Board of Health, by local boards of health.

[illegible] passed.

Your Committee received the support of the State and City Health Boards, and of the Mayor of Boston, also of Mr. Parkman in the Senate and Mr. George von L. Meyer in the House.

Your Committee had a hearing before the Joint Committee on Public Health of the Legislature. At this hearing, your Chairman made an extended argument for the bills, and was supported by the following gentlemen, who attended and spoke at length, in favor of the bills, at his invitation: Rev. Lyman Clark, Andover, N. H.; Gen. Francis H. Walker; President Dr. James C. White; Dr. C. F. Folsom; Dr. Harvey, of Westborough; Prof. D. R. Dewey, Institute of Technology; Rev. S. W. Dike, of Newton; Prof. W. T. Sedgwick, Institute of Technology.

The Joint Committee of the Legislature on Public Health reported favorably Bill No. 403, and allowed the rest to lapse by default. The subject being again called up in the Legislature by Senator Parkman and Representative Meyer, was recommitted to the Joint Committee on Health, to give another hearing. At this hearing, Drs. Walcott and Cheever addressed the Committee.

This Committee then reported *favorably*, and the Bill 401 was referred to the Committee on Finance. This Committee (Mr. Rideout, of Cambridge, Chairman) reported that the bill ought not to pass. The Bill (401) "for the appointment of advisory medical inspectors throughout the State," was rejected in the House, 85 to 36.

Thus was a final quietus given to a measure of the highest sanitary importance.

Respectfully,
David W. Cheever,
James C. White,
Charles F. Folsom, } *Committee.*
Harold C. Ernst,
Henry J. Barnes,

Dr. Cheever's report was unanimously accepted.

On motion of Dr. Knight, a vote of thanks was passed to the members of the committee for their arduous and painstaking labor. Also to Mr. Geo. A. O. Ernst for his valuable and gratuitous services in drawing up the bills and to the various gentlemen who appeared before the Committee of the Legislature on Public Health to speak in favor of the bill.

Recent Literature.

A Contribution to the Pathology of the Vermiform Appendix. By T. N. Kelynack, M.D., Pathologist to the Manchester Royal Infirmary, etc. London: H. K. Lewis.

This book is an extensive monograph on the appendix. The first chapter contains the early literature on the anatomy and the diseases of the appendix. This is followed by a description of the various differences in length, position and lumen, with an account of the various fossæ which are to be found in its vicinity. He distinguishes three fossæ in the vicinity of the appendix which are almost constant. (1) The ileo-colic fossa, a peritoneal pouch formed at the angle produced by the junction of the ileum and colon. (2) The ileo-cæcal fossa, situated behind the angle of junction of the ileum and cæcum, extending for a variable distance upward behind the ileo-colic junction and parallel to the ascending colon. This fossa may be divided into two parts by the meso-appendix. (3) The subcæcal fossa, situated immediately beneath the cæcum.

A description of the various pathological conditions, with their diagnosis and treatment, follows the anatomical description. In this the literature has been gone over very thoroughly, and a large number of statistics collected. The book is essentially a clinical study, and the pathological description of the conditions met with is poorly done. The description of the normal histology of the appendix is incomplete, and there is no description whatever of the histological characters of the lesions. No mention is made of the blood-vessels or lymphatics of the organ, their relative number, their course and distribution; and we might suppose that these were absent altogether.

The work contains nothing new; and the statistics he has collected add little to those in the exhaustive monograph of Fitz. What we want now is a more careful anatomical study of the lesions of the appendix, the character of the pathological processes, their course and their causes. None of these questions have been considered.

Leçons de Thérapeutique. Par Georges Hayem, Professeur de Thérapeutique et de Matière Médicale à la Faculté de Médecine de Paris, etc. Les Médications. Quatrième et dernière série. Paris: G. Masson. 1893.

The greater part of this volume is devoted to the treatment of the various forms of disease which the author includes under the term dyspepsia; special stress is laid upon the careful methods of diagnosis which Professor Hayem and M. Winter have elaborated. These methods are in advance of those in general use in making a diagnosis of certain conditions of the stomach, and some of them demand a greater familiarity with chemistry than one finds in most practitioners; but the author is, of course, quite correct in considering an accurate diagnosis the first step in the proper treatment of the disease. The treatment of dyspepsia is fully and carefully considered. Diet, the influence of repose and exercise, the care of the skin, the use of purgatives and other medicines are discussed. In short, the diagnosis and treatment in their narrowest and widest sense are well given.

In the latter part of the volume the author considers the treatment of dyspnœa, cough, albuminuria, uræmia, etc., but brings forward nothing especially new. The style of the writer is easy but diffuse; the interest of the book lies chiefly in the field to which he has given much attention, namely, certain diseases of digestion.

A Manual for Boards of Health and Health Officers. By Lewis Balch, M.D., Ph.D., Secretary of State Board of Health of New York. Albany, N. Y.: Banks & Brothers. 1893.

Dr. Balch has performed a useful service in presenting in this Manual a digest of the various laws and duties which pertain to local boards of health. In the words of the author the book is "a practical manual for practical men, who desire to do their duty when serving their fellow townsmen as members of boards of health."

While the book has been specially prepared with reference to the duties of public officials acting under the provisions of the Health Code of the State of New York, it also contains much information relative to nuisances, the management of contagious diseases, vital statistics and other sanitary matters, which give it a more than local interest, and will make it generally useful as a hand-book for local health officials.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 9, 1893.

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THE WATER-SUPPLY OF LONDON.

IN last week's issue of the JOURNAL a brief notice of the water-supply of London was presented; but the increasing needs of this rapidly growing metropolis are now so prominent, and in some measure so closely resemble those of our own cities and of all other large centres of population with thickly settled surroundings, that we are induced to comment more fully upon the report of the Commissioners, now in our hands.

The Royal Commission appointed in March, 1892, to determine the adequacy of the present sources of water-supply of London, has made its report, dated September 8, 1893.

This Commission was required to ascertain "whether, taking into consideration the growth of the population of the metropolis, and the districts within the limits of the metropolitan water companies, and also the needs of the localities not supplied by any metropolitan company, but within the water-sheds of the Thames and the Lea, the present sources of supply of these companies are adequate in quantity and quality, and, if inadequate, whether such supply as may be required can be obtained within the water-sheds referred to, having due regard to the claims of the districts outside the metropolis, but within these water-sheds, as will have to be obtained outside the water-sheds of the Thames and the Lea."

The report gives a brief historical sketch of each of the eight water companies supplying London, with estimates of the population of the metropolis for fifty years to come, the probable quantity required for such population, and proposed methods of improving the present supply.

Different estimates of the future population of London are presented, according to the method of making the estimates — the highest estimate for 1931 being about twelve millions and the lowest eight and one-half millions. The present consumption of water amounts to 31.19 gallons per capita daily, of which quantity about twenty per cent. is used for trade and public purposes, leaving about twenty-five gallons per head as the domestic consumption, which is much less than the average in cities of the United States.

The water-supplies of these eight companies are at present filtered through large areas of sand and gravel, covering about one hundred and nine acres of surface. The average depth of the sand in these filter beds is about two and one-fourth feet, and the rate of filtration is about two gallons per square foot per hour.

The filter-beds of the Berlin water-works, which are more carefully and thoroughly prepared, are nearly five feet in depth, and the new filter now in successful operation for purifying the Lawrence water-supply, is also about five feet in depth.

In commenting upon the sanitary phase of the question, the Commission speaks as follows, p. 68:

"Doubtless, these bacteriological questions are not matters concerning which it would become us to make positive and dogmatic assertion, seeing that at present experts in the science of bacteriology are themselves avowedly holding their judgment in suspense. This much, however, we can state without hesitation, that, as regards the diseases in question, which are the only ones known to be disseminated by water, there is no evidence that the water supplied to the consumers in London by the companies is not perfectly wholesome. In coming to this conclusion, we are glad to find ourselves in full accord with the opinion expressed, with equal conviction, by the water commission presided over by the Duke of Richmond, in 1869.

"Before leaving this subject, however, it will be well for us to apply the test of experience to the suggestion mentioned in an earlier paragraph, that a few typhoid bacilli, or even a single one, might possibly pass through the filter-beds and, getting access to a domestic cistern, might there multiply to such an extent as to cause an outbreak of disease, limited to the household using that cistern.

"We shall, we believe, be well within the mark in estimating the number of household cisterns in such use in London to have averaged at least half a million during the past twenty years. Day by day, water for drinking purposes has been drawn from each of these cisterns, and a fresh supply admitted from the mains, so that it is no exaggeration to say, that there have been in the last twenty years thousands of millions of opportunities offered for the suggested catastrophe; and yet not a single instance can be adduced in which it has actually occurred. It may, of course, be said that such a thing may have happened without detection, and it is impossible to prove that such may not have been the case; but, seeing what innumerable opportunities there have been for the occurrence, the absence of a single demonstrated case forms so strong a presumption against its practical possibility that it may, in our opinion, be dismissed from consideration."

In order to preserve the wholesomeness of the water delivered to consumers, and to meet the natural sentiments against drinking water which, although rendered wholesome by purification, has been at some time polluted, the Commission recommends the greatest possible vigilance over the water-sheds of the Thames and the Lea, to insure thorough treatment of all sewage, before its effluent is admitted to the rivers, by the most efficacious methods that science and experience may dictate, and to enforce the adequate storage and filtration of such water as is abstracted at the in-takes.

The Commission made a careful investigation of all sources of pollution upon the tributaries of the Thames, and found such sources very numerous, and that the Rivers Pollution Prevention Act of 1876 had been a dead letter, so far as its practical enforcement was concerned.

The following are the conclusions of the Commission with reference to the quantity and quality of the water-supply of London:

"We are strongly of opinion that the water, as supplied to the consumer in London, is of a very high standard of excellence and of purity, and that it is suitable in quality for all household purposes. We are well aware that a certain prejudice exists against the use of drinking water derived from the Thames and the Lea, because these rivers are liable to pollution, however perfect the subsequent purification either by natural or artificial means may be; but having regard to the experience of London during the last thirty years, and to the evidence given to us on the subject, we do not believe that any danger exists of the spread of disease by the use of this water, provided that there is adequate storage, and that the water is efficiently filtered before delivery to the consumers.

"With respect to the quantity of water which can be obtained within the water-sheds of the Thames and the Lea, we are of opinion that, if the proposals we have recommended are adopted, a sufficient supply to meet the wants of the metropolis for a long time to come may be found without any prejudice to the claims, or material injury to the interests, of any districts outside the area of Greater London.

"We are of opinion that an average daily supply of forty millions of gallons can be obtained from wells and springs in the chalk of the Lea Valley without affecting any material interests; but that, if that quantity is exceeded, it is probable that the springs and wells in the parts of the valley immediately adjacent to the wells, and all the districts further down the valley may be injuriously affected.

"From wells in the chalk area on the south side of the Thames, in the district of the Kent Company, we are of opinion that a daily average supply of twenty-seven and one-half millions of gallons may be obtained.

"We think it of very great importance that distinct obligations should be laid upon any Company or local authority which is allowed to pump water from the chalk for purposes of public supply, to keep accurate observation of the effect of their operations on the level of the water in the wells from which they pump, and return the results to the water examiner under such regulations as may be framed. The great difficulty which we have had to encounter has been in getting accurate and reliable information as to the actual effect of the operations now carried on. The importance of procuring this will increase each year as the limit of what can be taken from any district with safety is gradually being reached.

"From the River Lea we are of opinion that, with adequate additions to the present system of storage, fifty-two and one-half millions of gallons may be taken daily

"We are of opinion that by the construction of storage reservoirs in the Thames Valley, at no great distance above the intakes of the companies, it will be possible to obtain an average daily supply of three hundred millions of gallons without taking in any objectionable part of the flood-water.

"To our minds one great advantage of such a scheme of storage reservoirs is that it can be carried out progressively to meet the increasing demands for water, and, should the [illegible] right to contemplate, the extensions may be from time to time deferred as successive decennial enumerations reveal that the ratio of increase is remaining stationary, or even falling.

"From the sources and by the means we have mentioned a daily supply of four hundred and twenty millions of gallons can, in our opinion, be obtained. This is a sufficient quantity to supply thirty-five gallons a head to a population of 12,000,000 persons, which is about three-quarters of a million in excess of what the total population of Greater London together with the outlying parts of Water London will have become in 1931, even if the ratio of increase in the decennial period from 1881 to 1891 is fully maintained.

"We are further of opinion that a large supply of water might be obtained from the chalk area east of the Kent Company's district, in the basin of the Medway, and in the district further east without any risk whatever of damage to that area."

Recent investigations by the State Board of Health of Massachusetts would seem to indicate that the multiplication of typhoid bacilli in household water-cisterns is even less probable than the language of the Parliamentary Commission would appear to imply.

The following experiment[1] conducted by Mr. Mills, at Lawrence, is applicable, at least, so far as concerns cold-weather conditions.

"To prove whether typhoid-fever germs would survive in the Merrimack River water, when at the low temperature of the month of November, long enough to pass from the Lowell sewers to the service-pipes in Lawrence, a series of experiments was made by the Board by inoculating water from the service-pipes with typhoid-fever germs, and keeping the water in a bottle surrounded by ice, at as near freezing as practicable for a month, and each day taking out one cubic centimetre and determining the number of typhoid germs. The number continually decreased, but some survived twenty-four days.

On the first day there were . . .	[illegible]	germs.
On the third day there were . . .	[illegible]	"
On the tenth day there were	400	"
On the fifteenth day there were . . .	100	"
On the twentieth day there were . . .	[illegible]	"
On the twenty-fifth day there were . .	0	"

This experiment indicates that typhoid-fever germs from the sewers of Lowell may live in winter to enter the Lawrence reservoir in large numbers; that the numbers will decrease in the reservoir; but still a considerable fraction will live to enter the service-pipes, and that this fraction will decrease as the water proceeds in the pipes across the city."

With the results of modern investigation in view as to the natural filtration of water through sand or gravel, and with the fact also in view that two of the largest cities in the world (London and Berlin) have, in consequence of the adoption of such methods of filtration, the lowest death-rate from typhoid fever enjoyed by any of the large cities of the world, it is difficult to see how a sanitary journal issued in London can publish such statements as the following, in commenting upon the merits of a patent filter:

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[1] [illegible] Annual Report of the State Board of Health of Massachusetts, [illegible] Typhoid Fever in Relation to Water-Supplies.

"It is now established that water flowing through clean sand passes out precisely as it passes in — with the exception of visible substances — totally unaltered in every respect, sand, in itself, possessing no filtering property whatever."

The same paper, in proclaiming the virtues of a water-softening process, says: "The hardness of water being caused by the lime suspended in it, it is susceptible of softening by a *kind of vaccination* with lime. This is now extensively known; but there is a tendency to overdo the lime, just as some ill-advised medical practitioners overdo human vaccination, with the result in either case that more harm is effected than good."

Such metaphorical mixtures of chemistry and pathology are, undoubtedly, within the province of the advertizer, but are out of place in the pages of reputable journals.

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BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.

DR. HERMAN M. BIGGS has just made an interesting report to the Board of Health of the City of New York in regard to thirty-six cases reported as membranous croup in which he has made bacteriological investigations during the past four months. In all the cases examined, the pseudo-membranous deposit was confined almost exclusively to the larynx. In thirty cases the Klebs-Loeffler bacillus was abundantly present. These, therefore, were undoubtedly cases of laryngeal diphtheria. In the remaining six cases no diphtheritic bacilli could be detected, and these he regarded as cases of catarrhal pseudo-membranous inflammation analagous to similar non-diphtheritic inflammations in the pharynx. In five of the laryngeal cases in which the Klebs-Loeffler bacillus was found, cases of pharyngeal diphtheria both preceded and followed within a week in the immediate vicinity of the patient. In three other instances the cases were preceded, and in some instances followed, by cases of true diphtheria. In the remaining fifteen cases in which the diphtheritic bacillus was found pharyngeal diphtheria, so far as known, neither preceded nor followed in the immediate vicinity. None of the six cases in which no Klebs-Loeffler bacillus was met with was followed or preceded by cases of diphtheria. Dr. Biggs concludes his report by stating that during the last four months nearly 84 per cent. of all the cases of so-called membranous croup referred to the Health Department for bacteriological examination, have proved to be true diphtheria.

MEDICAL NOTES.

ILLNESS OF DR. ROSWELL PARK. — Dr. Roswell Park, of Buffalo, is ill at the Buffalo General Hospital, with diphtheria, which he contracted while in attendance upon a patient upon whom he was obliged to operate for diphtheria. It is one more example added to the many cases of physicians who daily expose their lives for the sake of their patients.

YELLOW FEVER. — The number of new cases of yellow fever each day at Brunswick, Ga., is slowly diminishing, and the people are beginning to return, although the Marine-Hospital Service authorities consider it a great mistake for them to do so yet while there is a chance of more warm weather. A few cases have occurred at Jesup, and one at the detention camp near Waynesville.

CHOLERA. — The cholera epidemic abroad has been steadily declining for some time. In Arabia, no cases have been reported from Jeddah for over a month. The quarantine station at El Tor received over 30,000 pilgrims, among whom there were but 132 cases of cholera and 99 deaths. In Russia, cases are still reported in St. Petersburg, Moscow, Tiflis and Baku, and through the provinces, with a slight increase during the last week. In Germany, there has been a small outbreak at Stettin, owing to a contamination of the water-supply at the filtering beds. In Galicia and the various Turkish provinces cases are still rather numerous. Palermo and Leghorn are still infected, and in France, Brest and Nantes are the most seriously affected cities. In Spain, the disease is thoroughly scattered throughout the country, a few cases only occurring in each place.

CONSUMPTION OFFICIALLY DECLARED A COMMUNICABLE DISEASE IN MICHIGAN. — At its meeting of September 30th, the Michigan State Board of Health unanimously decided that consumption is a dangerous, communicable disease, and must be reported by physicians and householders to the several health boards.

A LARGE ANATOMICAL MODEL. — Dr. Nardi, of San Francisco, who was General Grant's physician during his travels abroad, has recently finished one of the largest anatomical models ever made. It is a model of the human heart thirty-five times the actual size.

RECOVERY OF DAMAGES FOR MISCARRIAGE. — The Superior Court of New York City has ruled that when a married woman is so injured through the negligence of another person as to miscarry, her husband can recover damages for the loss of the child. In the case on trial the damage was assessed by the jury at $2,250.

ATTRACTIVE CIGARETTE MATERIAL. — The *Medical Press* says that it has been discovered that all the used cotton-wool and lint of the Lariboisière Hospital in Paris has for years been systematically sold by the servants, as their perquisite, to the makers of cigarette-papers. The practice has been put a stop to.

BOSTON AND NEW ENGLAND.

A Medal Awarded the Boston City Hospital. — A medal has been awarded to the Boston City Hospital for the completeness and excellence of its exhibit at the World's Fair.

Massachusetts Cremation Society.— The retort building of the Massachusetts Cremation Society is approaching its completion and will be ready for use the first of next January. The Society is in a flourishing condition and has recently voted an increase of the capital stock to $50,000 by the addition of 25,000 shares of $10 each.

Children in Factories. — During the last year an effort has been made by the State Police to lessen the number of children employed in factories, with the result that there are now but 253 children under fourteen years of age at work in factories in the whole State, as against 1,656 a year ago.

Tetanus from Frozen Feet. — From December, 1888, to March, 1893, the hospital records of the State Almshouse at Tewksbury, show three cases of tetanus. The disease has in each case been concurrent with frozen feet. Among the nine thousand patients treated in the hospital during this time, no other cases of tetanus have occurred from any cause whatsoever. In two of the cases referred to, the frost-bite was superficial and called for no active surgical interference. The tetanic spasm was treated in one case with chloral; in the other with chloral and hyoscyamus. Both cases proved fatal. In the third, amputation of the foot had been decided upon when the tetanus intervened. The amputation was, however, performed, but without apparent effect on the course or progress of the disease.

NEW YORK.

Mortality. — During the week ending October 28th, the number of deaths reported in the city was 646; which is 56 less than in the preceding week and 58 less than the average of the corresponding weeks for the past five years. This represents an annual death-rate of only 17.62 per thousand of the estimated population, and the number of births reported during the week exceeded the deaths by 355. On October 28th only the following cases of contagious diseases were under treatment at the Riverside Hospital on North Brother Island: — Small-pox, 21; scarlet-fever, 26; diphtheria, 21; measles, 3.

Typhoid Fever at Tarrytown. — An outbreak of typhoid fever having recently occurred at Tarrytown on the Hudson, the village authorities applied to President Wilson of the Board of Health to assist them in detecting its source. Accordingly, he instructed Dr. Biggs, Chief of the Bureau of Bacteriology, to make an expert examination of the water supply, and Dr. Biggs, in connection with the local Water Commissioners, made a thorough survey of the different sources of the water. The supply comes from three wells sunk in a marsh northeast of the village, and several small brooks empty into the marsh from the surrounding hills. On one of these brooks, something less than a quarter of a mile from the pumping station, it was found that a house was located in which one or more cases of typhoid occurred in the latter part of September. The privy was situated directly over the stream, and this afforded an ample explanation of the outbreak in the village. Samples of the water from both the brook and the supply wells gave evidences of contamination.

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Miscellany.

LARGE DOSES OF STRYCHNINE IN PULMONARY AND CARDIAC DISEASES.

In a recent address before the Philadelphia County Medical Society, Dr. Thomas J. Mays advocated most strongly a more frequent use of strychnine in the treatment of pulmonary and cardiac disease. In his experience he has found better results from the use of this drug than from any other single remedy. In addition to the powerful stimulating influence over the nervous system, and its special influence on the nerve supply of the lungs and heart, it has been recently shown that strychnine also has the faculty of multiplying the corpuscular elements of the blood, and is therefore, like iron, a blood-builder. A combination of such valuable properties in a single agent makes it apparent on theoretic grounds alone why strychnine should possess such a beneficial therapeutic effect in the diseases here considered, since anæmia is one of their most common complications. It is his belief that many affections of the lungs and heart are fundamentally dependent on disorder of the nerves which supply these organs, and that the curative effects of an agent in these diseases rests largely on the power which it has of correcting this primary aberation.

He considers that the best effects have not, as a rule, been obtained heretofore owing to the administration of too small doses. The sixtieth or fiftieth of a grain he thinks comparatively worthless, and for some time he has been in the habit of beginning with at least a thirty-second of a grain. This dose he gradually increases to the limit of toleration. Contrary to the general belief, he has not found strychnine to have any especial cumulative effect, but that the long-continued use brings a degree of tolerance, so that the poison line recedes. It has been his custom "to incorporate one grain of strychnine with quinine, or some other remedy, and divide the whole into thirty-two capsules, and give one capsule four times a day. This lasts eight days, and then one-eighth of a grain more of strychnine is added to the whole quantity, which is thereafter increased one-quarter of a grain every eighth day until the limit of toleration is approached." This may be as high as one-tenth, one-seventh, or even one-sixth of a grain four times a day, for several months continuously, permanently or again increased after a time. The only untoward effect he has noticed has been, at times, a slight tendency to cause diarrhœa.

The modes of administration has some influence upon the effect produced.

In asthma, Dr. Mays obtains the best effect by "introducing about a twentieth of a grain under the skin, and administering about a thirtieth or a twenty-fifth of a grain by the mouth four times a day, and gradually increasing this in the way above indicated. Hypodermically, it is given once a day or every other day, and, if possible, in the evening, until there is an approach to the production of the toxic effects of the drug. Suitable doses of phenacetin, quinine, capsicum and ammonium muriate will enhance its action."

In bronchitis, both acute and chronic, strychnine checks the cough, diminishes the expectoration, improves the appetite, and puts to one side the whole constitutional relaxation and feebleness frequently present, especially in the chronic form of this disease, but it must be given in ascendant doses.

In acute pneumonia, he gives a twentieth of a grain morning and night subcutaneously, with an additional twentieth of a grain by the mouth every three or four hours.

In cardiac disease, he has found in strychnine a most valuable adjuvant to digitalis. Each fulfils its own indications which are distinct: strychnine, in cases of disease from want of nutrition and proper innervation, as shown by irregular intermittent pulsation of a weak heart; while digitalis is preferable in cases where there is a want of compensatory power in the heart muscle, as in valvular incompetency.

"Bearing in mind this difference, strychnine should be prescribed when the nerve-supply of the heart is enfeebled through auto-intoxication such as is found in the post-paralysis of infectious diseases, and in poisoning from alcohol, lead, mercury, etc.

"Irregularity and intermittency of the heart's action are frequently benefited by the administration of large doses of strychnine, and more often than not do we find that digitalis is utterly useless in such cases. Sometimes the irregularity will remain even under the influence of strychnine, but the symptoms which are dependent on, or are a part of this condition — such as pain in the precordium, orthopnœa, oppression of the chest — will improve or disappear, especially if suitable evacuant remedies are used at the same time.

"Even in purely valvular disease there comes a time when digitalis fails to maintain relief. It has aided in restoring muscular power and nutrition, but when the nervous energy begins to flag, and the heart walls begin to relax, digitalis no longer possesses the requisite spurring properties.

"The pulmonary circulation becomes impaired, œdema and congestion of the lungs follow, and death is threatened by way of the pulmonary organs. It is at such a time, when digitalis fails to counteract these many incidental complications, that strychnine has its superior value as a tonic to the waning nerve energy of the heart and lungs."

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TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE.

The annual session of the Tri-State Medical Society was held at Chattanooga on October 17th, 18th and 19th. There was a large attendance and a very general discussion upon the various papers which were read.

The following officers were elected: President, J. B. S. Holmes, Atlanta, Ga. Vice Presidents, James A. Goggans, Alexander City, Ala.; Dan. H. Howell, Atlanta, Ga.; T. Hilliard Wood, Nashville, Tenn. Councillors, W. E. B. Davis, Ala.: G. W. Mills, Ga.; J. B. Murfree, Tenn. Secretary, Frank Trester Smith, Chattanooga, Tenn. Treasurer, W. C. Townes, Chattanooga, Tenn. Recorder, W. L. Gahagan, Chattanooga, Tenn.

The following resolutions were adopted:

"For five years annually the Tri-State Medical Society has enjoyed the hospitality of the medical fraternity of Chattanooga, a hospitality that is only bounded by their opportunity to share the liberality and magnificent hospitality which particularly characterizes the Chattanooga doctor. There must be something in the atmosphere or water, or more likely in the fact of this city being surrounded by these grand mountains which has the effect to draw out and develop the better qualities and higher instincts that belong normally to every man's heart, and these magnificent surroundings have succeeded in developing a body of medical men that are not only an honor to the profession, but have and are now giving to this beautiful city a reputation that has become national.

"The Tri-State Medical Society feels to-day as we have unloosed the cable and from this day forward we are afloat and will have our annual home in Georgia, and then Alabama, and that we fully appreciate the sensation of a child leaving its paternal home and going out into the world to try his fortune. We fully appreciate the importance of this step, and as we leave the home nest and wander in other lands our thoughts, our affectionate rememberances and our prayers will centre here, and our thanks and gratitude and heart-wishes for the medical fraternity of Chattanooga will ever grow brighter and brighter as the years go by. Be assured that in the heart of every member of the Tri-State Medical Society the memory of many kindnesses and splendid hospitality will ever remain a green spot, the memory a thing of beauty and a joy forever."

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CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

New York, November 1, 1893.

A meeting of the Executive Committee of the Congress of American Physicians and Surgeons was recently held at the house of the Chairman, Dr. Landon Carter Gray, there being present Dr. A. L. Loomis, President of the Congress; Dr. H. P. Bowditch, representing the Physiological Association; Dr. F. H. Bosworth, representing the Laryngological Association; Dr. D. B. St. John Roosa, of the Ophthalmological Association; Dr. Abraham Jacobi, of the Pediatric Association; Dr. P. A. Morrow, of the Dermatological Association; Dr. James B. Walker, of the Climatological Association; Dr. R. W. Taylor, of the Genito-Urinary Association; Dr. W. T. Lusk, of the Gynecological Association; Dr. F. J. Shepherd, of the Association of American Anatomists; Dr. L. McLane Tiffany, of the American Surgical Association; Dr. Wm. H. Welch, of the Association of American Physicians; and Dr. Landon Carter Gray, of the American Neurological Association.

A Local Committee of Arrangements in Washington was appointed as follows:

Dr. S. S. Adams (Chairman), representing the Pediatric Association; Dr. John S. Billings, the Surgical Association; Dr. H. C. Beyer, the Physiological Association; Dr. S. O. Ritchie, the Otological Association; Dr. S. C. Busey, the Gynecological Association; Dr. W. W. Johnson, the Climatological Association; Dr. I. Atkinson (Baltimore), the Dermatological

Association; Dr. W. H. Welch (Baltimore), the Association of American Physicians; Dr. I. C. Rosse, the Neurological Association: Dr. Samuel Theobald, the Ophthalmological Association; Dr. T. Morris Murray, the Laryngological Association; Dr. D. W. Prentiss, the Genito-Urinary Association; Dr. Frank Baker, the Anatomical Association.

It was arranged that the following subjects should be discussed by the Congress at its next meeting in Washington, in the latter part of May, 1894:

The Climatological Association: "Sewer Gas."

Genito-Urinary Association: "The Surgical Kidney in its Clinical Aspects."

Dermatological Association: "Leprosy in the United States."

Laryngological Association: "Intra-Nasal Surgery."

Gynecological Association: "Conservative Treatment of the Female Pelvic Organs."

Neurological Association: "The Effects of Infectious Processes on the Nervous System."

One Association is yet to select a subject for discussion.

Dr. W. H. Carmalt, of New Haven, Conn., resigned from the sub-committee deputed to take charge of the organization of the Congress, and Dr. Wm. H. Welch, of Baltimore, was appointed in his place, so that the committee now consists of Dr. A. L. Loomis, President of the Congress; Dr. Landon Carter Gray, Chairman of the Executive Committee; Dr. Newton M. Schaffer, Secretary of the Executive Committee; and Dr. Wm. H. Welch.

Landon Carter Gray, M.D., *Chairman of Exec. Com.*,
No. 6 East 49th Street.
Newton M. Schaffer, M.D., *Secretary of Exec. Com.*,
No. 28 East 38th Street.

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Correspondence.

AN INTESTINAL ANOMALY.

Harvard Medical School,
Boston, Oct. 30, 1893.

Mr. Editor: The following intestinal anomaly, in a male subject, was found in the dissecting-room, and seems to me to be of considerable interest in connection with abdominal surgery.

The sigmoid flexure was found in the right iliac fossa, with its mesentery attached to the right iliac artery, and the lower part of the mesentery of the ilium adherent to the sigmoid flexure.

The cæcum, vermiform appendix, ascending and transverse colon were in their normal positions.

Below the splenic flexure, the mesentery of the descending colon was partially adherent to the posterior abdominal wall, but the intestine itself was quite free and moveable.

On approaching the sigmoid flexure the mesentery of the descending colon shortened, but was not attached to the abdominal wall, except, of course, in the median line.

On the third lumbar vertebra it was not over an inch in length, and here the intestine crossed the aorta, to the right side of the body. Its mesentery then increased in length, was freely moveable, and seemed to be attached to the right iliac artery. A freely movable sigmoid flexure with a long mesentery was found in the right iliac fossa. The mesentery of the small intestine was normal in its attachment, but the lower six inches were adherent to the anterior surface of the sigmoid flexure.

Coils of small intestine were alone found in the left iliac fossa.

Truly yours,
Franklin Dexter, M.D., *Demonstrator.*

METEOROLOGICAL RECORD.

For the week ending October 28, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	Weather.* 8.00 A. M.	Weather.* 8.00 P. M.	Rainfall in inches.
S..22	30.37	[illegible]	[illegible]	[illegible]	[illegible]	94	[illegible]	N.W.	N.E.	4		O.	O.	
M..23	30.30	[illegible]	[illegible]	[illegible]	[illegible]	97	[illegible]	N.E.	E.	10	[illegible]	R.	R.	[illegible]
T..24	[illegible]	[illegible]	[illegible]	[illegible]	97	87	92	S.	S.W.	12		[illegible]	C.	1.40
W..25	29.96	60	68	[illegible]	[illegible]	[illegible]	72	W.	N.W.	12	12	C.	C.	
T..26	30.26	46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.	E.	[illegible]	[illegible]	C.	C.	
F..27	30.10	54	[illegible]	[illegible]	[illegible]	[illegible]	83	S.E.	S.E.	[illegible]	9	O.	O.	
S..28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	77	S.W.	W.	4	10	R.	F.	[illegible]
[illegible]	30.09		[illegible]	[illegible]			80							2.13

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 28, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,891,306	646	[illegible]	[illegible]	[illegible]	3.90	3.00	8.10
Chicago . . .	1,438,000	—						
Philadelphia .	1,115,562	[illegible]	119	12.42	[illegible]	3.51	.54	[illegible]
Brooklyn . .	[illegible]	318	130	18.56	14.40	4.16	[illegible]	8.32
St. Louis . . .	[illegible]			—				
Boston . . .	[illegible]	[illegible]	[illegible]	[illegible]	9.45	2.25	...	10.35
Baltimore . .	[illegible]	—	—					
Washington .	308,431	100	27	[illegible]	11.00	6.00	[illegible]	3.00
Cincinnati . .	[illegible]	107	29	8.37	9.30	1.86	[illegible]	[illegible]
Cleveland . .	290,000	[illegible]	[illegible]	[illegible]	11.00	5.50	[illegible]	[illegible]
Pittsburg . .	[illegible]		—	—				—
Milwaukee . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.68	[illegible]	7.68
Nashville . .	87,754	31	9	6.46	22.61		—	[illegible]
Charleston . .	[illegible]	[illegible]	[illegible]	[illegible]	17.25	6.90	—	
Portland . . .	40,000	17	4	—	[illegible]			—
Worcester . .	96,217	23	10	[illegible]	[illegible]			—
Fall River . .	87,411	[illegible]	[illegible]	[illegible]	[illegible]	27.60	–	[illegible]
Lowell . . .	87,191	[illegible]	[illegible]	[illegible]	9.10	22.75	–	[illegible]
Cambridge . .	77,100	24	[illegible]	[illegible]	16.64	—	—	12.48
Lynn	62,656	20	[illegible]	[illegible]	5.00	–	—	—
Springfield . .	[illegible]		[illegible]	[illegible]	16.00	12.00		—
Lawrence . .	[illegible]						—	—
New Bedford .	45,886	19	[illegible]	[illegible]		15.78	10.52	5.26
Holyoke . . .	41,278	16		[illegible]	12.50	12.50		[illegible]
Salem	32,233	9	[illegible]	[illegible]			11.11	—
Brockton . .	32,140	7	1	[illegible]		—	—	14.28
Haverhill . .	[illegible]	[illegible]	[illegible]	[illegible]	11.11	11.11	11.11	—
Chelsea . . .	30,264	10	[illegible]	[illegible]		10.00	—	10.00
Malden . . .	[illegible]	[illegible]	1		[illegible]	—	—	—
Newton . . .	27,556	—	—	—	—	—	—	—
Fitchburg . .	27,146	[illegible]	—	[illegible]	—	12.50		—
Taunton . . .	[illegible]	7	0	14.28	—	14.28	—	
Gloucester . .	[illegible]	[illegible]	—	—	—	—		
Waltham . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.28		
Quincy . . .	19,642	[illegible]	[illegible]	[illegible]	—	20.00	[illegible]	—
Pittsfield . .	[illegible]	[illegible]	[illegible]	[illegible]	—	20.00	—	—
Everett . . .	[illegible]		—	—	—	—	—	
Northampton .	[illegible]		—	—	—	—	—	
Newburyport .	14,073	[illegible]	—	—	[illegible]	—	—	[illegible]
Amesbury . .	10,920	[illegible]	1	—		—	—	

Deaths reported 2,2[illegible]; under five years of age [illegible]; principal infectious diseases [illegible] 10, erysipelas 5, measles 4, small-pox 2.

From scarlet fever Philadelphia 9, New York 4, Brooklyn 3, Boston 2, Milwaukee, Lowell, Cambridge, Salem and Newburyport 1 each. From [illegible] New York 4, Worcester 3, Washington 2, Brooklyn, Boston, Cleveland, Lynn, [illegible], New Bedford [illegible] 1 each. From [illegible] fever Brooklyn 5, New York [illegible] 1. From whooping-cough Brooklyn 4, New York and Philadelphia 2 each, Boston and Haverhill 1 each. From erysipelas

New York, Brooklyn, Lynn, Somerville and Pittsfield 1 each. From measles New York 2, Springfield and New Bedford 1 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending October 21st, the death-rate was 18.4 Deaths reported 3,652: acute diseases of the respiratory organs (London) 277, diarrhœa 135, diphtheria 103, fever 82, scarlet fever 79, whooping-cough 65, measles 37, small-pox (Bradford 4, West Ham, Birmingham and Leeds 1 each) 7.

The death-rates ranged from 11.8 in Derby to 26.9 in Blackburn; Birmingham 17.8, Bolton 16.9, Bradford 14.8, Burnley 15.1, Croydon 12.9, Hull 20.5, Leeds 16.6, Leicester 17.0, Liverpool 24.7, London 18.8, Manchester 19.1, Newcastle-on-Tyne 18.3, Nottingham 14.2, Oldham 17.2, Portsmouth 14.6, Sheffield 15.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM OCTOBER 27, 1893, TO NOVEMBER 3, 1893.

Leave of absence for one month with permission to apply for an extension of two months, is hereby granted to **Major Curtis E. Munn**, surgeon, U. S. A.

Captain Marlborough C. Wyeth, assistant surgeon, is relieved from duty at Fort Supply, Indian Territory, and ordered to Army and Navy General Hospital, Hot Springs, Ark., for duty.

Captain Robert B. Benham, assistant surgeon, having relinquished unexpired portion of sick leave, is ordered to Madison Barracks, New York, for duty.

First-Lieut. Harry M. Hallock, assistant surgeon, is relieved from duty at Fort McPherson, Georgia, and ordered to Fort Bayard, New Mexico, for duty, relieving **First-Lieut. Philip G. Wales**, assistant surgeon.

First-Lieut. Wales, on being relieved by **First-Lieut. Hallock**, is ordered to Fort McPherson, Georgia, for duty.

The leave of absence granted **Captain H. P. Birmingham**, assistant surgeon, is extended twenty-three days.

First-Lieut. Charles Lynch, assistant surgeon, is relieved from duty at Fort Omaha, Nebraska, and ordered to Fort Robinson, Nebraska, for duty at that station, relieving **Captain Edward Everts**, assistant surgeon.

Captain Everts, on being relieved by **First-Lieut. Lynch**, is ordered to Whipple Barracks, Ariz., for duty, relieving **Major Benjamin F. Pope**, surgeon.

Major Pope, on being relieved by **Captain Everts**, is ordered to Angel Island, Cal., for duty, relieving **Captain William R. Hall**, assistant surgeon.

Captain Hall, on being relieved by **Major Pope**, will report for duty as attending surgeon, Hdqrs Department of California, and examiner of recruits at San Francisco, Cal.

Lieut.-Col. Henry R. Tilton, deputy surgeon-general, is relieved from duty at Fort Wayne, Michigan, and ordered to Fort Omaha, Nebraska, for duty at that post.

Major Louis M. Maus, surgeon, is relieved from duty at Whipple Barracks, Ariz., and ordered to Fort Sam Houston, Texas, for duty, relieving **Major Calvin DeWitt**, surgeon.

Major DeWitt, on being relieved by **Major Maus**, ordered to Fort Leavenworth, Kansas, relieving **Major John Brooke**, surgeon.

Major Brooke, on being relieved by **Major DeWitt**, ordered to Philadelphia, Penn., to await orders.

The leave of absence granted **Lieut.-Col. Johnson V. D. Middleton**, deputy surgeon-general, U. S. A., is extended fifteen days.

Major John O. Skinner, surgeon, U. S. A., having been found incapacitated for active service on account of disability incident to the service, is, by direction of the President, retired from active service this date October 26, 1893, under the provisions of Section 1251, Revised Statutes.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, November 13, 1893, at 8 o'clock, P. M.

Dr. G. W. Gay: "Some Cases of Strangulated Hernia." Discussion opened by Drs. D. W. Cheever (by invitation), J. Homans, C. B. Porter.

Dr. Abner Post: "A Case of Œsophagotomy." Discussion opened by Drs. M. H. Richardson and S. J. Mixter.

Dr. J. Homans will present before the Society a specimen showing "The Remarkable Effects of Divulsion of the Urethra."

Members are kindly requested to show interesting cases and pathological specimens.

John T. Bowen, M.D., *Secretary.*

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, November 15th, at 8 P. M.

Paper: "The Prevention of Tuberculosis," Dr. H. F. Vickery. Drs. F. I. Knight, V. T. Bowditch, S. H. Durgin and others will take part in the discussion.

F. C. Shattuck, M.D., *Chairman.*
Henry Jackson, M.D., *Secretary.*

APPOINTMENT.

Charles P. Putnam, M.D., of Boston, has been appointed by the Mayor, a member of the newly-constituted Board of Visitors to the Public Institutions of the city.

RECENT DEATHS.

Sir Andrew Clark, Bart., M.D., F.R.S., LL.D., died in London, November 6th, aged sixty-seven years. He was born in Scotland and was educated at Aberdeen and Edinburgh. In the medical school he distinguished himself in all his work, gaining the first medals in anatomy, pathology, chemistry, botany, materia medica, surgery, pathology and practice of physics. For two years he assisted Dr. Hughes Bennett in the pathological department of the Royal Infirmary and was demonstrator of anatomy to Dr. Robert Knox. For four years Dr. Clark had charge of the pathological department of the Royal Hospital at Haslar. In 1854 after taking his degree of M.D. at the University of Aberdeen, he came to London and became a member of the Royal College of Physicians of London and was elected on the staff of the London Hospital. In 1858, Dr. Clark was made a Fellow of the Royal College of Physicians, in which he held the offices of lecturer, councillor, examiner in medicine and censor. He has been also Lettsomian lecturer and president of the Medical Society of London. He was consulting physician and lecturer on clinical medicine to the London Hospital; a F.R.S. and LL.D. of Cambridge, Edinburgh, Aberdeen (honoris causa), an honorary Fellow of the King and Queen's College of Physicians in Ireland, and consulting physician to the East London Hospital for Diseases of Children. He has held the offices of president of the metropolitan counties branch of the British Medical Association and president of the Clinical Society. In 1888 he was elected president of the Royal College of Physicians, succeeding Sir William Jenner, and was re-elected in 1889 and 1890. In 1883 he was created a baronet. The following are some of his writings: "On the Anatomy of the Lungs," "On Tubercular Sputum," "Evidences of the Arrestment of Phthisis," "Fibroid Phthisis," "The Work of Fibrinous Pleurisies in the Evolution of Phthisis," "Renal Inadequacy," "The Theory of Asthma," "Neurasthenia," and "Anemia."

Chauncy Munsell Hulbert, M.D., M.M.S.S., died at South Dennis, November 6th, aged seventy-five years. He graduated from the Vermont Medical College and has been for some years treasurer and librarian of the Barnstable District Medical Society.

Stephen Crosby Martin, M.D., M.M.S.S., died in Brookline, November 5th, aged forty-three years.

BOOKS AND PAMPHLETS RECEIVED.

The Medical Students' Manual of Chemistry. By R. A. Witthaus, A.M., M.D., Professor of Chemistry and Physics in the University of the City of New York; Professor of Chemistry and Toxicology in the University of Vermont, etc. Fourth edition. New York: William Wood & Co. 1893.

A Practical Treatise on Diseases of the Skin; for the use of Students and Practitioners. By J. Nevins Hyde, A.M., M.D., Professor of Dermatology and Venereal Diseases in Rush Medical College, Chicago. New third edition. In octavo volume of 802 pages, with nine plates of which three are colored and 108 engravings. Philadelphia: Lea Brothers & Co. 1893.

The Blot upon the Brain; Studies in History and Psychology. By William W. Ireland, M.D., Edin., formerly of H. M. Indian Army; Corresponding Member of the Psychiatric Society of St. Petersburg, and of the New York Medico-Legal Society, Member of the Medico-Psychological Society. Second edition. New York: G. P. Putnam's Sons. Edinburgh: Bell and Bradfute. 1893.

Asiastic Cholera: Its Genesis, Etiological Factors, Clinical History, Pathology and Treatment. By John A. Benson, Professor of Physiology and Associate Chief of the Department of Clinical Medicine, College of Physicians and Surgeons of Chicago, Ill.; Member of American Anthropometric Society, of American Medico-Psychological Society, of the Chicago Pathological Society. Chicago: The J. Harrison White Co. 1893.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XIX.

SURGICAL DISEASES OF THE BLOOD-VESSELS.

THE simplest form, of which we will speak first, is the ordinary

NÆVUS OR BIRTH-MARK,

that is, an enlargement of the capillary blood vessels due to some unknown cause before birth, and generally developing and growing larger after birth. The face is the favorite seat for it; though occasionally it is found in the hairy scalp, or the back; it is usually about the eyelids, nose and lips. It usually appears on the infant as a small, flat, slightly-raised red patch, perhaps as large as the finger-nail; does not pulsate, but is spongy and erectile. If you compress it firmly with the thumb, the blood will be pressed out, and slowly return. When it happens to be near the mucous membrane, as of the eyelid, or nose, or lip, it increases because the tissue is loose, and it has a chance to grow and distend. In other locations, as the cartilage of the nose or forehead, it increases very slowly. This is the simplest form of enlarged vessels, being confined to the capillary circulation, which, of course, is dilated far beyond its normal size; but the disease apparently originates in it.

It is painless and innocent, except for the deformity which it causes. The ordinary nævus sometimes goes away of itself. If it is small, and in a place where it does not grow easily, after the excitement of the first dentition is over, it frequently sinks away and disappears. If, on the other hand, it is where it has a chance to distend, or if it is a great deformity, an operation can be done to relieve it.

Very small ones can be cured by the application of simple caustics, which leave only a small puckered scar. Caustics like nitric acid may be used. A small one can be burnt out by the electric wire, with which it can be touched. This must be distinguished, in your minds, from the treatment of any varicose, or enlarged vessels, or aneurisms, by throwing a current of electricity through them, electrolysis. That acts by coagulating the blood and does not destroy the tissues of the sac. The electric cautery, or galvanic cautery, merely burns off the whole affair, and shrivels it up and makes an ordinary scar, just as nitric acid does. In places where the nævus is not conspicuous, as on the back or arm, it can be very well cured by vaccination. That sometimes may be worth thinking of in simple cases, where the nævus is small. In larger cases there are several ways of operating to get rid of them. The ligature may be used. This makes a bad scar always; can hardly fail to do so. The nævus may be surrounded by a thread and strangled in one or two directions, and allowed to slough out; and the wound heals by granulation. A neater way is to cut them out. If the tissues are loose so that you can cut around them in sound skin, you can make a very neat result. The whole thing can be dissected out and the skin brought together as you do in taking out a small, fatty tumor, or wen.

Injecting the nævus with styptics like perchloride of iron is frequently successful, but not free from danger, inasmuch as the thrombi which are formed in the vessels are sometimes taken up and carried on in the circulation; and instances have occurred in which the injection of nævi upon the scalp of young infants has been fatal in a few moments. Of course that is a very distressing event, and we have to reflect, after such an affair as that, that we could have done it by a safer way. The larger the vessels, the more chance of absorption of clot, and some destructive consequence.

Small ones can be burnt out; larger ones can be strangled or excised. Some will go away of themselves.

The next form, which is more serious, is the venous form of

VARIX,

which is erectile tissue, composed of large veins; does not pulsate; and comes preferably about the mucous membranes. A common site is inside the mouth; inside the buccinator muscle, about or over the lips, in which case it frequently produces a great deformity. The lip enlarges and everts; and this large spongy mass of bluish color, not pulsating, hangs out upon the face. Inside the cheek they grow rapidly, and are rather difficult to extirpate. They somewhat resemble the venous condition we find in hæmorrhoids. They form occasionally in the vulva, and about the nymphæ. This form is distinguished by the fact that the tissue is frequently cavernous or erectile; and is composed of large blood cavities, and does not pulsate; but the blood can be pressed out of it like a sponge; and then it slowly fills again so as to be as large as before.

This can be cured best by the ligature. It would be especially dangerous to use the electric current. A very neat result can be got by passing curved needles on a handle, with threads, through and under, and about them, in various directions; securing the whole mass, and allowing it to slough out.

The other form, which is more intractable, though not more dangerous, I think, is that composed of enlarged arteries, and now called

ARTERIAL VARIX.

This is made up of large, tortuous, intercommunicating arteries, originally formed by the small arteries, before they reach the veins. These dilate and form other anastomosing branches, until finally you have a considerable mass forming a tumor, which is pulsating to the touch, and which possesses some of the destructive power of an aneurism. If in the temporal region, it may absorb the temporal fascia, the muscle and the temporal bone, and finally lead to fatal meningitis. This form of varix is fed by numerous arteries around its margin, of considerable size; and the final supply of the whole current comes through the nearest main artery, which feeds the parts with blood. In the temporal region the supply is from the external carotid.

Such growths as that, if they are let alone, sometimes do not become dangerous. If they are not extending they may be let alone. If, however, they are extending, and obviously absorbing the neighboring tissues, or if they cause pain, then it is better to try to cure them; and to cure them is difficult by operation because they possess a great vitality, due to the numerous arteries involved. In large cases, the best way, if it can be done, is to secure the main trunk first; for an aneurism of the temporal region, to tie the external carotid. If this is tied with an antiseptic ligature and closed up, it will obstruct the vessel and check the flow through the carotid, without cutting through the trunk of the vessel, and without the danger of secondary hæmorrhage. Frequently this can be neatly done, so that the wound closes promptly; after a week, or so, the carotid is entirely cut off.

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[1] These are unwritten lectures printed from the [illegible] reports. Verbal corrections [illegible] changes. They were delivered to the third [illegible] part of the regular course.

The result of this upon the arterial varix above will be to starve it to a very considerable degree, but not cure it. It will begin to take its supply from anastomoses of the neighboring system, which supplies the head. But after the patient has passed through the first operation, then while the arterial varix is very much reduced in size and has not had an opportunity to fill up again to any great degree, it may be safely attacked by tying the vessels round about, which feed it in other directions; and finally tying the mass; strangling it completely; and forcing it to slough out. In this way they are cured without danger.

On the whole, simple vascular growths may be destroyed with safety by the cautery; larger ones more safely with the ligature. Resulting scar is inevitable, except in the case where we can cut it out and bring the parts together.

The next enlargement of vessels that I will speak of, because it comes next in order, is

VARICOSITY OF THE VEINS.

Varicosity of the Veins of the Left Spermatic Region. — Varicocele, occurring almost always on the left side, is frequently a great mental trouble to the patient, and sometimes it is the seat of pain. When the varicocele becomes large and heavy, the veins dilate the deep layer round the spermatic cord; subsequently the superficial veins dilate, so that finally the two sets dilate; the deeper ones around the vas deferens and artery, and the superficial ones scattered on the scrotum going back on the perineum, and going up on the groin. The result of this heavy load of blood is to dilate the walls of the scrotum, and distend it very much, so that the whole of that side of the scrotum becomes larger than the right side, and eventually produces pain, by dragging on the spermatic nerve; in this case the pain is of a dull, aching character, and extends up the cord, until it extends to the back and loins, along the course of the ureter, up to the kidney. This pain is annoying to the patient if he is working hard; and is always more troublesome in summer than in winter owing to relaxation.

Palliation may be afforded by a suspensory bandage. This has a tendency to prevent the disease from extending and increasing, and holds it in check. The unfortunate complication sometimes arises in which the patient is the victim of hernia on the same side with the varicocele. In that case the pressure of the truss on the external abdominal ring is liable to press on the recurrent veins, and lead to aggravation of the varicocele. The blood is pumped in by the arteries, the veins are already dilated, and are further obstructed by the pad of the truss. In such a case as this it may be necessary to operate to relieve the patient of the veins on account of the pressure of the truss on the site of the hernia. The truss devised by Mr. John Wood is very useful in this class of cases. It is made in the form of a horse-shoe. The two arms rest on the pillars of the ring; the flat part of the pad presses over the internal abdominal ring. The result is that the exit of the vessels is left without compression; and it is very comfortable to wear in this class of cases; a little point worth remembering in treating a case of hernia and varicocele together.

Patients with varicocele are much more anxious to be operated on usually than the surgeon is to undertake it. The results of the operation are not always brilliant. Although it may relieve the veins which are tied, it is liable to have some effect on the nutrition of the testicle; but whether that effect is more than the effect of leaving a large varicocele alone and allowing the testicle to be distended with venous blood, I am considerably in doubt. It is fair to say that when a large varicocele is tied the testicle almost always shrinks, and in that way probably loses some of its function. All this should be explained to the patient; and if he wishes to take the chances, and is sure the varicocele is painful enough to warrant it, the operation may be done.

Morning and night showering of the part thoroughly with cold salt and water; taking of cold baths; great care to relieve any tendency to constipation; avoidance of wearing any tight bandages about the waist to compress the recurrent circulation are useful. If the operation is done, it is usually done by ligaturing the veins, either by the open method of cutting down upon them and dressing the wound antiseptically, or the old method of operating subcutaneously.

This operation is followed by pain, swelling of the testicle and scrotum; requires the patient to be confined to bed some little time; leaves him afterwards for several months with a lump on that side of the cord, so that he is quite sure he is not cured; although you may feel that the larger that lump is the more certain is the cure.

There is a little danger in this operation. Phlebitis occasionally extends up to the abdominal cavity; and sometimes has been fatal. This should be taken into account before you undertake the operation. The danger is not great. It is something, however.

Varicose Veins. — The ordinary place for these is about the calf of the leg and around the tibia. The cause is usually largely hereditary; persons of a certain type who have a large venous system, large veins at any rate; and also position, standing and walking, constantly on the feet. The first thing which takes place is that the column of blood not being thrown back promptly through these veins, they dilate. After they have dilated to a certain degree the muscular coat of the vein loses its tonicity, and thinning of the vein takes place. Then the dilatation presently causes a forcing open of the valves, one after another, so that, finally, in a bad case, if it is laid open, you may find all the valves, for quite a distance, laid back against the wall, and incapable of closing. The result of this is a struggle of nature to carry the blood back through other veins; hence, dilatation of other veins; rapid enlargement of all the anastomosing veins occurs, and eventually the diseased condition extends up to the groin, and involves sometimes the long saphenous vein in its entire length. In the short saphenous vein it extends up to the popliteal pouch. A pouch at the saphenous opening, and another marked venous pouch at the popliteal orifice, is very characteristic of the varicose vein. In addition to that, coagula form, numerous ones; and little hard lumps form throughout the vein at different points, chiefly near the valves, which form a partial obstruction to the current. Occasionally, also, calcareous salts, and deposits of what are called stones in the veins, phlebolites, are also found, of various sizes. That is the condition and that the history. Once begun, it is sure to progress, unless means are used for its relief. Moving about in walking compresses the veins where they penetrate the muscles, and adds to the obstruction in long-standing cases; also the giving out of more and more valves, and thus a greater weight of the column of blood. Soon after this has taken place œdema of the feet and ankles begins, and serum is forced out from these dilated vessels into the surrounding tissues. Finally, as a last stage, the venous dilatation extends even to the capillary system; and we find in such patients the feet mottled with innumerable small blood-vessels, scattered about in groups where the capillaries have been distended. The feet and ankles in this condition are always swollen. The capillary veins are so dilated, and so many of them have been plugged by little coagula, that they do not go down and get relieved when the patients lie down at night; and a condition of chronic œdema of the feet results.

The best treatment is compression; and it is the most satisfactory. It may be done by a flannel bandage, if carefully applied; or by the elastic stocking; or in more marked and severe instances by the use of an India-rubber bandage, which will compress the veins very perfectly. The flannel bandage, in the mild cases, is the most comfortable that can be used. It must be put on every day and taken off every night. It does a good deal of good to bathe the legs frequently in cold water, and lie down and rest as often as the patient can. If the patient happens to be in easy circumstances he can get along perfectly well with a flannel bandage and cold baths and the rest he can take; and thereby prevent the disease from increasing very much. Not so with the patient who is forced to labor. In that class of patients the elastic stocking is invaluable; and frequently suffices without anything further being done.

In former times, surgeons seeing the varicose vein lying upon the skin with its dilated pouches, the thrombi and the useless valves, and its tortuous course, concluded that that was the whole disease, and that if that vein should be obliterated and destroyed, the disease could be cured; hence the older method of treatment was to destroy the vein by one of two methods. A favorite method was by caustic. This was done by a caustic of moderate strength, called the Vienna paste, made of caustic potash and some other ingredients, fastened over the vein, tied on and forced to slowly burn its way. It was painful, but it was a very effectual cure. As it went on in this destructive process it set up periphlebitis, caused coagulation, destroyed skin, cellular tissue, and even made a deep scar, shrinking everything up, so that no vein could ever exist in that spot again. It was customary, where there was a long varicose vein like the long saphenous, to put half a dozen of these pledgets of Vienna paste up and down the limb; and allow this process to be done a number of times, until the vein was obliterated. This was quite safe. Thrombosis and diffused phlebitis rarely occurred, for the simple reason, I suppose, that it was gradual. Anything to which the body is subjected, if it is a gradual influence, nature accommodates itself to; so that it was a safe operation, although painful; and it accomplished what it set out to accomplish; but it did not cure, by any means, the disease. The other method which was used was the ligature, and this was more dangerous because its application was instantaneous. The current was cut off at once. Adhesive phlebitis and thrombosis was excited in the course of a few minutes or hours, and the travelling of clots and production of embolism was not a very rare consequence in this mode of operating. In addition to this, in old times, suppuration occasionally took place; and a diffused erysipelatous inflammation of the leg, already the seat of poor circulation, was apt to occur. However, in a very bad case, where they may be expected to do any good, either of these methods are justifiable; but as curative agents they are failures; and the reason is that although you destroy the vein, you have no control over the condition of the anastomosing veins which penetrate the muscles, and connect the superficial with the deep veins; so that you merely convert a superficial varicosity into a deep one, if you destroy the superficial veins.

Philosophically speaking, the only treatment of varicose veins is compression and care. An operation may be done for a case where an ulcer is overlaid by a vein so that it will not heal until that vessel is destroyed, or something of that kind; but an attempt to cure a varicosity of a limb by these operative procedures is not successful, and is a matter of some risk.

PHLEBITIS,

or inflammation of the veins, is sometimes idiopathic; and sometimes the result of injury. It may come on of itself. If it comes on of itself it may be acute, or chronic.

It is supposed to be rather an inflammation around the vein than in the vein itself. The cellular tissue around the wall of the vein inflames, and the process continues through the vein; results in coagulation of the blood; plugging up of the current and continued building up of clots; so that sometimes an obstruction which begins down in the calf, may extend up in the pelvis before the disease has run its entire course.

Certain diseases, apparently, bring on this condition, especially diseases of the erysipelatous type, and different forms of diffused cellulitis.

The appearance of phlebitis, when it occurs in the acute stage, is very marked. In the first place, pain comes on. Then it will be noticed that the limb becomes marbled with dark lines, which are the veins becoming obstructed. If these are pressed upon, it will be found that the current is flowing in them, but it returns with great slowness, and does not flow promptly, as in the healthy vein. The current is slow; the vein becomes conspicuous and swollen and darker colored, so that it shows plainly under the skin. It is painful. The neighboring tissues are swollen. The cellular tissue is infiltrated and the limb becomes big and hard. Very soon it will be found that one of these veins is completely obliterated, and that there is no current in it, and that it can be distinguished very distinctly under the skin as a hard cord pursuing its course up the leg. It is impervious; filled with coagula; and these coagula are going to extend upward. Whether or not they will do any harm depends upon the cause of the disease. If the cause of the disease happens to be septic, the coagula appear to be imperfectly formed; soften readily; become themselves occasionally the seat of septic decay, and the factors, so to speak, in producing the different stages of pyæmia, and absorption of pus, as it used to be called, from the vessels, in distant parts of the system. But if the phlebitis happens to be caused by a blow or wound, which is doing well in a healthy individual, or comes on in a person of feeble circulation, who is old and feeble, and who has a slight coagulum form in the vein from the slowing of the current, then, in either of these cases, the course of the disease is not rapid: is not very acute, and it is not very dangerous. It is very annoying, very tedious, but does not usually result in septic infection, or the travelling of large embolic clots. Phlebitis as an accessory, as a condition of a septic state already existing, is one of the most dangerous signs that we can see; and we may almost despair of arresting its progress and its tendency to produce pyæmia, if we see it occurring in connection with a foul wound, or a bad state of the limb in which it happens to be; on the other hand, phlebitis of a more moderate and subacute kind is not essentially dangerous.

Treatment. — The treatment of the milder and chronic kind is the more successful, of course. The first requisite is entire rest in the horizontal position; and the next requisite is that, as regards any manipulation, the vein must be left entirely alone. Hot applications are frequently very grateful, and some of them of a good deal of influence in quieting down a moderate state of subacute periphlebitis. The limb should be in an easy and relaxed position; the patient confined to bed; and the parts heavily covered in large poultices. To these frequently may be added with benefit, laudanum, and outside of it India-rubber cloth, or oiled silk, so that the leg may be steadily steamed and fomented in the poultice. This gives comfort, and seems to assist in resolving the trouble. Patients who have had one of these troubles instantly recognize what is taking place. They are seized with a stabbing pain, and find a little knot developing, which is hard and painful. Then a minute red line, marking the course of the vein, may be seen. Patients who have this tendency, and are subject to many attacks, if they know how to treat it at once, frequently can, by a week's confinement at first, prevent months of confinement afterwards.

In the septic variety, accompanied as it always is by suppuration and cellulitis, deep and free incisions; removal of all causes of irritation; antiseptic irrigations and washes; sustaining the strength of the patient with strong tonics and alcoholic stimulants, etc., may do something to assist in arresting the diseased process.

VENOUS HÆMORRHAGES.

When a vein is wounded it bleeds largely, but only in expiration. When the patient draws the breath in, the blood is drawn in towards the heart, and when the patient expires, blood flows with a great gush from the vein. This is the case in veins of ordinary size.

The most common cause of venous hæmorrhage, except from wounds, is the rupture of a varicose vein. This frequently occurs, and they bleed to a large extent; sometimes fatally, but not often. A venous hæmorrhage can be easily checked by pressure; and, if that is not sufficient, the vein can be exposed and tied exactly as an artery is tied. The old prejudice which used to exist against tying veins no longer exists; and whatever danger there may be in tying veins — the danger of setting up periphlebitis — is infinitely diminished by the fact that we use antiseptic ligatures, and dress them in an antiseptic way.

AIR EMBOLISM.

One of the most distressing and rapidly fatal accidents that can occur in the venous wound is the entrance of air. It must be a large vein to do it. It is sucked in in inspiration. That is the case in the larger veins about the neck which do not have valves; and is especially the case when the mouth of the vein happens to be held open, after it is cut, by its being attached to a fascia, as about the neck, in the popliteal space, in the groin, etc.; but especially the neck. When, for example, the surgeon is engaged dissecting out a tumor in the subclavian triangle, everything is done easier if the parts are on the stretch. The tumor is lifted to dissect it out; the parts beneath are on the stretch. They are out of sight, very likely displaced by the growth of the tumor. The vessels may be enlarged as well as displaced by the long-continued pressure of the tumor. It is then easy to understand how it frequently happens that the surgeon, in dissecting out the tumor, cuts through the fascia and the wall of the vein; the patient, making an inspiration, draws air into the vein, and the immediate consequence is what is sometimes called air embolism; that is, the air rushes down into the right cavity of the heart; appears in some way to obstruct immediately the action of the valves, either by displacing the blood and causing a froth, or by churning up of the blood; at any rate, the immediate effect on the heart is terrible and disastrous. The patient gasps; paleness and lividity come on; and death takes place in a very short space of time.

The best treatment, of course, is the preventive treatment; and there are two ways that must be used: either an assistant must be ready to thumb any vein that may be opened, and keep his thumb right about the subclavian region while the operation is going on; or another expedient may be used, which is to keep the bottom of the wound which is being dissected thoroughly wet in a puddle of some antiseptic fluid. Either of these measures are safe ones.

When the accident occurs it is generally fatal. One or two bubbles of air occasionally go in and do not make enough trouble to destroy life, although there is temporarily faintness and palpitation. The sound of the entering air is usually quite distinct. It is sucked in with a distinct gurgle; the surgeon at once becomes conscious of the fact; compresses the vein; injects ammonia or brandy; promotes artificial respiration; and, in the slight case, succeeds in saving life, but not in the severe ones.

ATHEROMA.

The next subject we will speak of is that condition of the arteries which leads to the formation of aneurisms. It is called atheroma. It is a fatty degeneration of the inner coat of the vessel followed by ulcerations and the deposition of calcareous salts, brittleness and stretching of the wall of the vessels and the formation of a sac.

An aneurism means a sac, or bag, which contains blood. It is usually what is called true or false. If it is a true aneurism, it is a dilatation of all the walls of the artery. If it is a false aneurism, it is a dilatation only of a portion of these walls.

The mode of its formation is always consequent upon this atheromatous change in the arteries themselves. The arteries are very smooth elastic tubes. They twist and yield with every pulsation of the heart. They shrink and open. They are governed by a set of nerves which control the muscular movements of the walls. They enlarge or diminish in consequence of the needs of the part to be supplied with blood. When the part or limb is in violent exercise and the person running rapidly, an additional blood-supply is sent. The arteries enlarge; they beat more rapidly and expand also; therefore it is essential to the life of a part that the artery should be compressible, elastic, distensible. When the condition, or change, which is called atheroma takes place, the artery becomes diminished as to its calibre and stiffened as to its walls; loses its elasticity; cannot carry any more blood at one time than at another time. The consequence is, in elderly people, when the atheromatous condition is well pronounced, that the blood-supply to the feet and distant parts is not only insufficient, but is incapable of being increased. Let such a part be exposed to cold and the blood cannot come. The result is, frequently, in the elderly, the gradual occurrence of senile mortification of the foot in consequence of a slight bruise, or a little lameness, or ingrowing nail; exposure for a few hours in riding; anything of that kind will gradually bring on stoppage of the circulation; starvation of the part and mortification; senile gangrene of the limb. That is one of the consequences of atheroma.

Another is that it not only stiffens the walls of the vessels, but leads to ulcerations, deposits of calcareous salts and thinning of their walls and formation of aneurisms. Without going into detail we can make plain in a few words how this takes place. Given a very smooth elastic tube which has got to carry a certain amount of blood, and is constantly in motion by the pumping of the blood through it, the first thing that takes place usually is the loss of brilliancy and smoothness of the innermost coat. Now the innermost coat of the artery is nourished mainly by imbibition of the blood which runs through. One stage of the degeneration which results when the coat is not perfectly nourished is the formation of fat. Fat cells form. It loses its smoothness, becomes slightly roughened and softened. What takes place when in ordinary cases a current of blood that is being pumped through a smooth tube meets with an obstruction? What takes place when we cut an artery, or vein, and allow the blood to flow upon some surface? Immediate deposition of fibrin, and the blood separates into its clot and serum and fibrin. The result of this slight roughness inside of the vessels is that slow deposition of fibrin takes place; more obstruction ensues; the current of blood beats with irregularity upon the wall of the vessel, and the inner coat, being deprived more and more of its nutrition, finally gives way. The result is a slight ulceration. The result of the ulceration is a pocket of greater or less size in the wall of the vessel. In this pocket gradually become deposited the lime salts in the form of plates.

Given a point in the vessel where there happens to be a meeting and crossing of two or three currents, where the circulation is not so perfect, having to cross, as it would in a single tube, here let an atheromatous change take place with a little ulceration and you can see how readily that pocket will deepen, that ulceration will increase, and the coat of the artery will be stretched more and more, and finally we have a sac or pouch formed in which the blood must go round and round, and be delayed in its progress. This is the way the ordinary true aneurism is formed.

The moment the sac is formed, blood delayed in it and the circulation impeded, nature goes on to another process, which tends to cure it; and that is by the formation of large coagula in the sac, which shall resist the impulse of the blood; be buffers as it were against the danger, and lead almost to a state of repair. The layers of fibrin which are deposited from the coagula on the inside of the sac become pressed down thinner and thinner, and those which lie next to the wall of the sac become very white, thin and firm; the next less so, and the next less so; so that you can see, in cutting into a fresh aneurism, a long series of concentric layers like the layers of the bark of a tree; those nearest the sac white and hard, next a little darker, and the central ones more and more soft. Nature makes an aneurism by ulceration of the inner coat. She tries to cure this aneurism by the coagulation of the blood inside the sac itself. As these coagula form more and more, the current of blood must go more and more slowly and imperfectly through the sac. Finally the blood, instead of being forced through, trickles through, and the aneurism may be almost cured. This is nature's process. Now it seems to me that this process indicates precisely the course we should endeavor to pursue in curing an aneurism; that is, to imitate nature as nearly as we can; to slow the current, and encourage the deposition of coagula by gradual compression and by rest.

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Original Articles.

AN INVESTIGATION OF AN EPIDEMIC OF TYPHOID FEVER IN THE CITY OF SPRINGFIELD, MASSACHUSETTS, DUE TO INFECTED MILK.[1]

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About the first of August, 1892, it was noticed that typhoid fever was unusually abundant in a particular district of the city of Springfield. This city (of about 17,000 inhabitants) covers a large area extending north and south along the Connecticut River, and upon somewhat higher land to the eastward. Its soil is chiefly sandy or gravelly, and the situation is regarded as salubrious. The particular district in which typhoid fever began to appear in such abundance as to excite comment, and at length alarm, is known as the "McKnight district," and lies upon a gravelly plateau of wide extent, such as often characterizes the terraces of the Connecticut valley. It is included between State Street and St. James Avenue. The district has been comparatively recently "developed" by enterprising real-estate activity, and may fairly be described as having a refined and attractive suburban character; the houses, mostly of wood, standing somewhat back from the street, are provided with grassy yards or lawns and sometimes with gardens. The sanitary arrangements are in keeping with the exteriors; in brief, the district forms an inviting, wholesome and excellent suburban community. There are other parts of the city, similarly situated, some as good, some better, than this; but most of the city is far less favorably situated, less inviting, less clean, and in parts, especially along the river, crowded with tenement-houses; still other portions consist chiefly of shops or stores or offices, amongst which dwellers of a lower grade are crowded. But in none of these except the McKnight district did typhoid fever make its appearance in July, 1892.

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[1] From the [illegible] Report of the State Board of Health of Massachusetts, for 1892.

The perplexity of the people, therefore, was great, and, as is usual in such cases, various theories were advanced to account for the epidemic. Some of these were manifestly untenable; others, although resting only upon vague conjecture, were soberly propounded and seriously discussed among the citizens and in the newspapers. Even physicians and the local sanitary authorities were deeply perplexed. Attention was first drawn to well-water as a possible cause of the disease, some of the people in the McKnight district having resorted largely to well-water in preference to the city water during the hot months. But it was naturally urged as a sufficient objection to this hypothesis that many, indeed most, of the victims had used only the public water-supply for drinking purposes. A similar hypothesis was advanced in respect to certain spring-waters widely sold in the district, but the same objection was effectively raised in this case. Some turned to the drainage and some to the sewerage of the district as the probable source of the trouble. But it was immediately pointed out that the houses affected were mostly new and the plumbing was generally in good condition. With respect to the sewers, a stench from the man-holes in the neighborhood of Yale Street was said to be noticeable at times, and we found that this was a fact; but the superintendent of sewers showed that this was an incident of the hot season; that the smell was no worse this year than in previous years when there had been no fevers; that the fall of the sewers was usually good, and the system of flushing them excellent. Moreover, many of the houses nearest to the man-holes had no typhoid fever cases; so that the sewer-gas theory, also, proved to be inadequate to account for the outbreak.

The officers of the local Board of Health began work upon the impure-water theory, and in conjunction with a local chemist proceeded to examine, chemically, the numerous wells of the district. They found several wells containing large amounts of chlorine, and many which gave evidence of more or less remote sewage contamination. But in spite of their results it remained an insuperable objection to the theory of well-water contamination as the cause of the trouble that some of the cases had had no access to well-water.

Still new cases of fever continued to appear, and the local perplexity increased. It was observed by some of the citizens and made known, that many of the families affected were served with milk by the same milkman. The city physician, therefore, communicated with the latter, and on August 8th, by which time there were known to be twenty or more cases of fever in the district, visited, under the guidance of the milkman himself, the several farms from which he derived the milk furnished to his patrons in different portions of the city. All of the farms were thus visited by the city physician except one, which, he was informed, had already been visited by a well-known and competent physician of Springfield, and found to be in good condition. He was further informed by the milkman that all of the milk distributed to the McKnight district, had come invariably from two farms in Agawam, a town adjoining Springfield, and these he found to be excellent farms in good condition, with no history of any typhoid fever upon either of them. It was learned, also, that the milkman's cans were washed and steamed only at the Springfield Coöperative Milk Association's headquarters, and that there was no reason to suspect that the origin of the fever was in any way connected with the water thus used; for the same water, under the same system, at the same place, was used for many other dairymen's cans, and no typhoid fever had appeared upon their routes. The conclusions drawn from the results of investigation of the milk-supply was, therefore, as stated in a local newspaper on August 9th, that the milk-infection theory was "entirely set aside."

In the mean time it had been suggested that the comparative proximity of a neighboring cemetery might be the hidden cause of the epidemic, and a cemetery theory was fully discussed in all its bearings. This received a severe blow when it was found that a well in the cemetery itself contained less ammonia than the wells in the McKnight district, but it continued for some time to hold a place among the favorite theories, in spite of the fact that there was not a particle of evidence in its favor, and every reason to reject it. It was hard pressed by the sewer-gas theory, especially on those streets with odoriferous man-holes; but both soon after lost some adherents, who went over to the infected-vegetable theory, namely, the theory that green foods, such as lettuce, tomatoes, celery, having been splashed by liquid manure previously infected, had been eaten uncooked, possibly in salads, and had thus produced the disease. This theory, however, like most of the theories advanced, failed to explain why the people in this district only were affected, or why, among all the families in this district, the particular families affected had been smitten. Last in the series, the theory of ice infection was brought forward as the probable cause of the outbreak; but inasmuch as the ice-supply of this district was in no respect different from that of the rest of the city, and the affected families had been served by the same carts as many families totally unaffected, this hypothesis also seemed to be untenable.

It is interesting to bring together, as more or less typical of the vague and often wholly unsupported speculations as to the cause of particular epidemics of typhoid fever, those which were propounded in the present case and were deemed worthy of mention in the public prints. They were as follows: (1) impure well-water; (2) impure "city" water; (3) defective drainage or plumbing; (4) defective sewerage, or sewer-gas; (5) infected milk; (6) influence of a cemetery, probably upon the well-water supply; (7) infected vegetables; (8) impure ice. These were not all of the theories advanced, but they suffice to show the usual condition of public opinion in the presence of an outbreak of typhoid fever.

All of these theories, if such they may be called, were propounded and discussed at much length, both in private and in the public prints, within the first week after attention had been drawn to the epidemic. During the second week the local debate was actively continued, but no new theories were advanced, the State Board of Health was not notified, no thorough investigation was made, and no just conclusion was reached. The anxiety and alarm of the citizens remained undiminished. Finally, in the third week of the debate, the State Board of Health was appealed to, and one of us (W. T. S.) was sent to the aid of the local Board of Health, arriving in Springfield on August 14th.

On August 15th, the authors began a joint investigation of the cases affected, using for the purpose the blank already described in connection with the epidemic in Lowell. After nineteen houses in the infected district had been visited and forty-six cases, examined, it became clear that all theories hitherto advanced were untenable except the milk theory. No other common bond of connection whatsoever could be found, but *all of these families except one had been taking milk from the same milkman*, as had already been alleged but not proved. This milkman (F. D. K.) was by no means the only milkman who sold milk in the McKnight district, but we soon discovered that he was the only one upon whose service there was any typhoid fever. In the exceptional case mentioned above, we afterwards found that the family got milk regularly from another dealer (upon whose route there was no other case of typhoid fever), but that almost as regularly this family bought milk from a grocery supplied by F. D. K. We therefore concluded provisionally that the epidemic was probably due to infected milk; but inasmuch as it seemed to be plain that one of us (W. H. C.) had hitherto been misled, we did not immediately announce our conclusions, although we straightway acted upon them, and proceeded to interview and cross-examine more closely F. D. K., the milkman who had served the infected houses with milk.

By him we were informed that all of the milk which had been supplied to the infected houses had come from the two farms in Agawam already referred to above. Upon this point he was positive and explicit. On the next day, therefore, we visited Agawam, in the hope of finding the source of the infection. As has been said above, these farms had already been visited by one of us (W. H. C.) on August 8th, in company with F. D. K. himself, and found to be in good condition; but to our surprise we now discovered on one of them, on the 16th, a well-marked case of typhoid fever, which had apparently developed since the visit on the 8th just referred to. The most careful cross-examination of the family (which was that of a well-to-do farmer) gave no indication of any previous case of typhoid fever on the farm, and this one appeared to have contracted the disease in Springfield, thus sharing, rather than explaining as a cause, the outbreak there. It was possible, however, that the local well which, as is usual in such cases, was not far from the privy, had somehow got infected, had conveyed the disease to the milk, through washing of the pails or otherwise, and had thus infected in turn not only those in the McKnight district served with the milk, but also the farmer's son, who might have got the disease either in this way or directly from drinking the water of the well, his parents, who were beyond the most susceptible age, having escaped. Much perplexed, we therefore took samples from the farmer's well for chemical and bacteriological examination in the laboratories of the State Board of Health in Boston. Bacteriologically the water proved to be unobjectionable, and chemically showed an excellent purification.

The inquiry was interrupted by the enforced absence of one of us, but was resumed on August 19th.

The samples from the farmer's well in Agawam having shown no evidence whatever of infection, the problem seemed as puzzling as ever, when we were suddenly put upon what proved to be the right track by information showing that we had been grossly deceived by the milkman, and that in truth the Agawam milk was not the milk regularly served to the infected houses in the McKnight district.

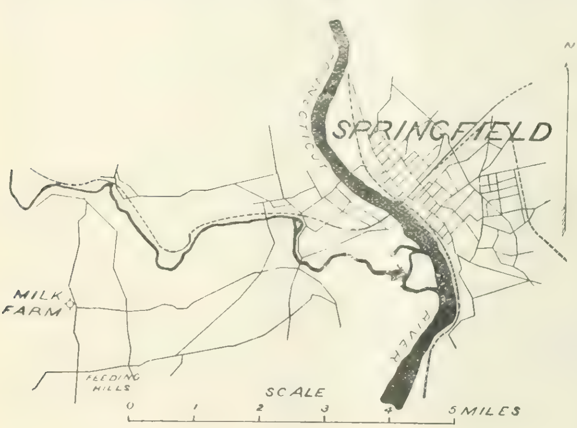
It has been stated above that the milkman took one of us (W. H. C.) to all of the farms from which the milk that he sold "on the hill" came, *except one*. We have since discovered that the milkman, probably in pursuit of a well-formed plan, took pains to drive the city physician first to the farms remotest from the one really to blame, and then to others in succession, until the latter grew weary of the apparently fruitless visitation of excellent farms. At last the milkman remarked to him that there was still one farm lying far to the westward and much out of the way homewards, from which he got some milk; but that "Dr. H. had been out there, and everything was all right." In the belief that this was true, the milk theory, which up to that time had had no better basis than any other, was abandoned by W. H. C.

We now learned, however, that the latter had been deceived, and that the milkman, before the public had become very seriously alarmed, had told Dr. H., who was his family physician, that the milk which he was serving to the infected houses in the McKnight district was coming from the one farm to which he did not take the city physician on his round of inspection; and thus we had positive proof both of his duplicity and of the true source of the infected milk. We therefore immediately proceeded to the farm in question, which was located in Feeding Hills, and were rewarded by the discovery that upon this farm there had been one, and probably more than one, case of typhoid fever several weeks earlier. The location of this farm, which we have every reason to believe was the source of the disease in Springfield, is shown upon the accompanying figure (see next page).

The farm was owned by a well-to-do farmer, who raised, among other things, tobacco, and kept a dairy. By inquiry we found that the farmer's daughter had had in the spring a case of "bilious typhoid fever." There was also a history of others upon the place "obliged to go to bed with slow fever," and it only remained to trace some possible connection between these cases and the infected milk. This we did not succeed in doing to our entire satisfaction, but we did find two possible avenues of contamination.

Most producers of milk for sale in cities cool the milk by allowing the cans freshly filled to stand in "coolers," surrounded by ice or iced water. In the present case the farmer had no ice, and therefore was in the habit of lowering the cans by means of ropes into a well adjoining the cow-yard. But unlike some of his neighbors, who hung cans in their wells just above the water level, this farmer *submerged* his cans, and allowed them to rest upon the bottom of the well, so that they were covered by from two to four feet of water. Here the morning's milk stood all day and into the evening, the evening's milk remaining if at all only a very short time before all was "collected" and carted off to arrive in Springfield, some six miles away, about midnight or a little later, being distributed at drawn, by the milkman referred to above (F. D. K.), to the consumers in the McKnight district.

At the time of our first visit to the farm we discovered the cans of morning's milk quietly reposing entirely out of sight on the bottom of the well. This was in most respects an ordinary dug well, but of unusually large diameter. It was covered with a platform of old and badly worn planks loosely laid on, and with rounded edges bordering on wide cracks. To allow the cans to be sunk and lifted, the planks were loose and separate. The cans were lifted by worn ropes, each of which ran through a hole in a plank and ended above in a large knot. On one side of the well was a chain pump, the spout of which overhung the platform, so that careless pumping easily washed matters on the planks near by through the wide cracks into the well. On the planks lay lumps of manure evidently left there by the dirty boots of the men. A little pumping proved that these were easily washed into the well; and, indeed, ordinary stepping about upon the planks to handle the milk cans or to pump must have cleaned the boots of the men at the expense of the water in the well.



On lifting the cans, on one of our visits, we found, by drawing them up and inverting them, that out of nine four leaked milk around the wooden stoppers with which they seemed securely plugged. Moreover, not one of them was *completely* full. On shaking the cans, the splashing of the milk inside was plainly heard. It was clear that if milk would leak out when the cans were inverted in the air, water would leak in when the same cans were submerged under water. Thus by submersion the milk was not only cooled in temperature but to some extent augmented in volume. The well water was plainly dirty, and bacterial analysis showed it to contain *B. coli communis* in abundance, a form which testifies to the presence of fæcal contamination, at least of animal origin. There was no question in this case of pails or cans washed in infected water, for the former were washed in the house in mountain tap water, and the latter were steamed in Springfield.

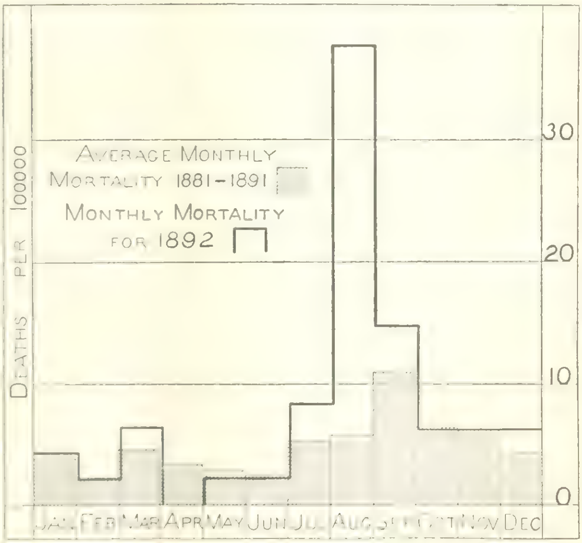
This well, however, was at some distance from the house, and not used there for drinking. It was easy to see how, if the well were contaminated, the milk sunk in it might have become so. But how could the well have been connected with the cases in the house? A plausible hypothesis was the following: the excreta of the patients went into the privy, and there is reason to believe that they were not disinfected. The contents of the privy, shortly before the infection reached Springfield, were spread upon the tobacco field. From this field the workmen frequently passed to the well to get water and to work about the milk. It is not difficult to believe that in doing so they may have carried upon their boots masses of fæces, originally from the privy, from the field to the well into which pieces fell through the cracks while the men trod upon the irregular planking. Whether or not this theory is true we shall probably never learn. An alternative hypothesis, moreover, remains. Upon most farms of this sort the "help" is constantly changing. Hired men only a few grades better than tramps come and go. There was a history of much of this kind in the present case, and it may easily have been that some such person acting for the time being as milkman was suffering from incipient or "walking" typhoid fever. In such a case a self-infection of the fingers, such as can only too easily happen, may have led to a heavy infection of the warm milk, such as must have existed in the milk which was served by F. D. K. to the McKnight district in Springfield.

The milkman (F. D. K) for a time maintained with bold assurance that the milk from this particular farm had never gone to the infected houses; and therefore, in order to have independent evidence, we undertook a minute and systematic study of the somewhat intricate system of milk-supply in Springfield. The problem was complicated by the fact that this particular milkman delivered from two separate wagons, and loaded these with milk from several dairies at two distinct points. But after many vexatious researches, including a visit by one of us (W. H. C.) to all of the dairies selling him milk, for the sake of obtaining documentary and statistical evidence of the dates and amounts of milk supplied by the several farms, delivered by the carriers and loaded upon each of his wagons, with the time of starting and the route of each, as well as the actual purchases of his wholesale customers, to whom he now affirmed that all of the Feeding Hills milk had always gone (thus contradicting flatly his original statement to Dr. H.); after interviewing his assistant, or "striker," who had delivered the milk; after having had the aid, also, of the able inspector of the Board, Mr. McCaffrey, — we at last obtained positive evidence from wholly independent data that the milk which went to the infected houses must have come, beyond a peradventure, from the farm in Feeding Hills. In all of this we were very greatly aided by the officers of the Springfield Co-operative Milk Association, who courteously gave us access to their books, and in many ways afforded us invaluable assistance.

It now remains to describe somewhat more fully the epidemic itself. It must not be forgotten that many other milkmen besides the one concerned served other houses in this district, which is thickly settled, but in none of these was there any fever. The correspondence of the cases of typhoid fever with their milk-supply is plain, although, as would be expected, some houses served by this milkman had no fever. There is good reason to believe that the infected milk was not the only kind that he carried, and that a different milk was sometimes delivered, for example, in the Ingersoll Grove district.

It will be observed that there were a few cases of typhoid fever in other parts of the city. A very few of these were imported. Of the others, those on Tenth and Essex Streets deserve special comment. After the milkman became alarmed, he is known to have refused, for a time, to take milk from the dairy in question. We have positive evidence that milk from this dairy afterwards went to Essex Street; and that here, also, the fever appeared, is one of the strongest links in our chain of intrinsic evidence. Similarly, seven cases of typhoid fever suddenly appeared about August 20th, in an hotel in the heart of the city; and while no positive evidence was found that milk from the infected dairy went to this hotel, we did discover that, at the time when this milk was under a cloud and was held by the Association, one can of reserved milk (ten quarts) was sold by them to that hotel, that this was an unusual occurrence, and at the very time required to have conveyed the disease to the hotel. As for the rest of the city, it was throughout the epidemic period almost wholly free from typhoid fever. The annual autumnal wave had not yet begun to rise.

The whole number of cases discovered and investigated was one hundred and fifty, and the whole number of deaths belonging to the epidemic was twenty-five. The intensity of the epidemic may be seen upon the accompanying diagram of monthly mortality from typhoid fever, which shows well also the limits of the epidemic period. A study of the death-rate from typhoid fever in Springfield, by months for the twelve years, 1881–92, shows a marked improvement since 1883, and an enormous excess in August, 1892, at the height of the epidemic. The death-rate from typhoid fever during this month was by far the highest during any month of the entire twelve-year period.



Out of the whole number of cases, one hundred and fifty, one hundred and one had milk sold by the same milkman (F. D. K.), while one hundred and thirty-five may have had access to the same milk.

For aid in the preparation of the map and diagram, we are indebted to Mr. R. D. Chase.

A London surgeon, recently completing a laparotomy, gave his needle a flourish that took out the lens from the eye of an unfortunate assistant.

AN INVESTIGATION OF AN EPIDEMIC OF TYPHOID FEVER IN SOMERVILLE, MASSACHUSETTS, DUE TO INFECTED MILK.[1]

BY WILLIAM T. SEDGWICK, PH.D.,
Biologist to the State Board of Health of Massachusetts.

Towards the end of August, 1892, the attention of the Somerville Board of Health was drawn to a sudden and nearly simultaneous appearance of a number of cases of typhoid fever. The physicians reported the cases with commendable promptness, ten having been reported on August 23d alone, and an inquiry set on foot by the local Board of Health immediately revealed the fact that most, if not all, of the cases were served by one and the same milkman. Thereupon the Somerville Board reported the outbreak to the State Board of Health, and I was instructed to make an investigation. In view of recent experience in the Springfield epidemic, described in a previous paper, which I was still studying, I was able to work rapidly, and began by verifying the data already in hand. It afterwards appeared that during the three weeks, August 20th to September 10th there were in the entire city of Somerville thirty-five (35) cases of typhoid fever. Of these one was imported, one was plainly a secondary case, a third was a very old case tardily reported. Thirty-two (32) cases were apparently primary and indigenous and remained to be accounted for. Thirty (30) of these had been served with, or had had access to, milk supplied by one and the same milkman. Of the other two cases, one was an old case of which the diagnosis was uncertain, though there was also a possibility that it was itself secondary to an earlier one; the other was synchronous with the epidemic period, and was that of a young woman who was in the habit of buying milk at a certain bakery. A bakery next door to the one from which she was in the habit of buying milk was supplied with milk by this particular milkman, and the keeper of this bakery and her daughter were among the persons who suffered from typhoid fever. I could not get the young woman or her mother to admit that they had ever been in the nearer bakery which had the suspected milk; but as they had to pass it to get to their regular bakery, I cannot keep feeling that on some unusual occasion some member of the family had perhaps stepped into the nearer bakery and got some milk. This case coincided in time with the rest; but in view of the evidence I have considered it an unexplained case.

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[1] From the forthcoming Report of the State Board of Health of Massachusetts, for 1892.

The usual theories of water infection, sewer emanations, etc., were advanced by some to account for the outbreak, but were all easily disproved. The city of Somerville uses the "Mystic" water-supply of the city of Boston, and this supply is not altogether unobjectionable but, inasmuch as the same supply served the whole city as well as the neighboring cities of Charlestown and Chelsea, while the present outbreak was confined to a limited area, the theory of wholesale water infection was easily disposed of. The region most affected was a fine portion of the city with the houses in excellent sanitary condition. There was no reason to suppose that the air, water, ice or sewers were worse here than anywhere else. The only common bond of connection between the infected families which was not also shared by thousands of others who were uninfected was the milk-supply; and even this was shared by a large number of families in one portion of the city in which no fever appeared. It became necessary, therefore, before adopting the theory of infection by contaminated milk to show not only (1) how the milk might have become contaminated, but also (2) how it happened that only one portion of the milkman's route was affected with typhoid fever, while another and important portion was not so affected.

I addressed myself first to the problem of the infection of the milk, and after having interviewed the milkman at great length for the sake of mastering the details of his business, visited the farms (in Littleton) from which the milk was said to have come. All of these proved to be free from typhoid fever, and to be examples of unusually decent dairies. From Littleton the milk was sent once a day to Somerville, arriving by train early in the forenoon at the Union Square station. I was further informed that from this point it was carried in a wagon, still in the cans used for shipment, holding eight and one-half quarts each, to a kind of barn called the "milk house" near the residence of the milkman. I was also told that in the milk house the milk was "mixed" by being poured from the large cans into the mixer, a capacious upright metal tank provided at the bottom with a faucet. After mixing (to produce an even grade) the milk was drawn off into the small cans supplied to consumers, these being next stoppered with wooden plugs and finally set away in the ice box, where they were "iced" and stored until early the next morning. At daybreak or earlier these small cans were delivered to the consumers by means of two wagons, each having a special route and a special series of customers. Inquiry showed that in proportion to the number of takers the cases were about equally distributed upon the two routes, which indicated that the infection must have existed in the mixer or in the cans, or possibly in both. The milkman-in-chief had two sons, one of whom was lying dead of typhoid fever when I first arrived on the spot. The date of the report of his case, however, agreed closely with that of the other sufferers from the disease, and he was also said to have been a great drinker of milk, so that he appeared to be simply a sharer in the common calamity. This son (W. B.), I was told, drove one of the wagons and worked in the milk house, but never handled the milk. It was his duty merely to wash the cans, while his brother, who drove the other wagon, "handled" the milk. This brother was not attacked by the disease.

Thus far it appeared that the milk had unquestionably arrived in the city uninfected, and had been carried in the unopened cans directly to the milk house, still uninfected; but when it left the milk house in other cans, some of it, at least, must have been infected. There was but one logical conclusion, namely, that it had somehow got infected in the milk house. I therefore investigated more closely the case of the son (W. B.) who had just died of typhoid fever, and was rewarded by the discovery that, although his case had indeed been promptly reported by his attending physician, and thus apparently belonged with the rest, it was in reality much older than the others, and dated from a time early enough to allow him to have contaminated the milk, and thus to have been the unfortunate cause of the whole trouble. This young man had first consulted another physician, who had failed to inform him of the true character of his disease, and, instead of putting him to bed, had allowed him to keep on with his work until finally the fever affected him so seriously that he could hardly keep his seat on his wagon, and at last, in desperation, consulted a competent physician. Then, and not before, his case was recognized and reported, and he was sent to bed; but so far was the disease advanced that the next day he had one intestinal hæmorrhage, followed before long by others of great severity; and very soon after he died.

It is plain that this young man worked in the milk house about, if not at and over, the milk, until he was in an advanced stage of the disease. It was denied by his father and brother that he ever "handled," or, as the phrase is, "set up," the milk, that is, transferred it from the large cans to the "mixer" and then to the little (consumer's) cans. It was alleged that his office in the milk house was simply to wash the cans, never to set up the milk. This point was urged upon me with eagerness and persistence, as fatal to my theory; but without discrediting the honesty of the affirmation, I cannot readily believe from what I have seen and learned of the milk trade, milkmen, milk houses, etc., that a division of labor really existed in this case so complete as would be required to exclude all possibility of infection of the milk by a sick man working within a few feet of the "setting-up" process, and doubtless ready and willing to lend a hand. I do not believe that, when two men are working day after day over milk in one room, one man always and without exception washes cans, while the other always and without exception puts milk into cans.

As to the precise way in which such a person might contaminate the milk there is no difficulty, even if he were only a washer of the cans. If such a person, in the early stages of the disease, affected with diarrhœa, should merely fail to wash his hands on returning from the privy and should then proceed to wash cans or to help in emptying the cans into the "mixer," particles from his fingers might drop or be brushed or washed off into the milk. That many people do habitually omit to wash their hands under similar circumstances is a fact.

In spite of these important discoveries, there still remained for some time a very serious objection to the theory that the milk had really been contaminated at the milk house. In the vicinity of Union Square and also to the east and west of this region the same set of milkmen delivered a considerable quantity of milk and served a large number of customers. Here, however, there had been no typhoid fever. I was myself much puzzled by these facts from the start and the milkman-in-chief lost no opportunity of urging them upon my attention as an insuperable objection to the milk-infection theory. At last, however, in the over-eagerness of his affirmations, he himself afforded the clew which enabled me to solve the whole difficulty. In reiterating the importance of the absence of cases upon that portion of the route near Union Square, and saying that more of the milk went thereabouts than on the hill (where the cases had occurred), he added that he knew this because he "always waited around after the train came and gave the boys several cans off the wagon" which they sold directly to the uninfected districts. Immediately everything became plain. These districts had evidently not been infected, *because they had not usually had milk from the milk house*, but had been served with fresh milk just in from Littleton. Probably only enough was taken from the train each day to serve these customers and those upon the hill who would not wait for the train to arrive next day. No more would be carried over than was necessary, because if the supply ran low more could be got in time for use, next day; and milk in August does not keep well. This milkman's route extended over the line into Cambridge, in which city he served three families. I was interested to find in one of these, a case of typhoid fever synchronous with those in Somerville. There was no other case in Cambridge anywhere near this point at that time.

One of the most interesting features of the epidemic was the indication which it afforded that in the very early, and possibly even in the early prodromal, period of typhoid fever the patient must have been discharging the germs of the disease. His case was believed by two thoroughly competent physicians who saw him, to have been well on "in the third week," on August 28th. His first hæmorrhage, so far as is known, was on the 29th, and he died September 6th. The cases first began to appear on the 16th, on which day physicians were called to five cases in Somerville; and seventeen out of the whole number of cases had their first visit from the physician on this day or one of the four following. Previous to this there had been only one case in Somerville since August 5th. It would appear from a consideration of the epidemic itself, that the milk must have been most heavily infected between the 1st and the 10th of August; and we have every reason to believe that at this time one of the milkmen was in the early stages of the disease. This is the more interesting because the great epidemics in Lowell and Lawrence in 1890–91 were apparently due to excreta thrown off in the early stage of the disease, before the patients took to their beds. The same thing was true of the epidemic in 1892 in Chicopee Falls, and also of the important epidemic in Red Hill and Caterham (Eng.) in 1879. In the present case I was told by his father that the young man had not been able to do anything at the milk house "for a week or so" before he ceased to deliver milk and went to bed; that is, not after about August 20th. The last case had its first visit from the physician on September 3d, or exactly two weeks afterwards. In other words, after this young man no longer visited the milk house the epidemic ceased. Later in September there were one or two more cases of typhoid fever in Somerville, but they proved on investigation to have been imported, having obviously contracted the disease elsewhere.

My thanks are due to several of the physicians of Somerville for their valuable assistance, especially to Medical Examiner Dr. T. M. Durell and Dr. William A. Bell.

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Clinical Department.

SOME ABDOMINAL OPERATIONS

BY MAURICE H. RICHARDSON, M.D.

TUBERCULOUS STRICTURE OF THE INTESTINE.

I REMOVED a few days ago from a girl of twenty-two, at the New England Hospital for Women and Children, an unusual and interesting specimen of tuberculous stricture of the intestine. As one of the consulting surgeons, I was asked by Dr. Keller to see this patient, and, if thought advisable, to operate. The chief symptom was abdominal pain coming in violent paroxysms without apparent cause, accompanied by loud gurgling. There was great emaciation and weakness. Obstruction was not complete. Although I have seen cancer of the intestine at this early age, I eliminated malignant stricture in the differential diagnosis because of the strong tuberculous taint in the immediate family of the girl. I was prepared to resect the gut under favorable conditions, but expected to be limited to inguinal colostomy, postponing the more radical treatment until she could regain her strength. The local conditions were so favorable, however, that I performed immediate excision. The stricture was in the lower portion of the ileum, and was situated between the umbilicus and the anterior superior iliac spine. One or two enlarged mesenteric glands near the seat of disease were not removed.

Resection was rapidly performed. The joint by the interrupted Lembert silk stitch was unusually satisfactory. The line of suture was protected by gauze packing. The patient died in three days, without any evidence of peritonitis. Abundant evacuations followed almost immediately upon the operation.

I think it would have been better to relieve by colostomy the obstruction, and to wait till the increased strength of the patient should justify resection.

The specimen shows a great thickening of the intestinal walls, with dilatation, above the constriction; below, the bowel is collapsed and its walls are comparatively thin. The lumen at the point of constriction is hardly large enough to admit a probe. The bowel above was much distended by thin, yeasty fæces, which were being constantly churned up by the intestinal paroxysms. The only difficulty in suturing was caused by the great difference in the diameters of the cut ends.

Remarks made [illegible] [illegible] Boston [illegible] [illegible] Medical Improvement [illegible] [illegible] [illegible] Medical [illegible] [illegible]

This is a serious disadvantage in the immediate operation; nevertheless, with care, a very satisfactory joint can be made.

GANGRENOUS AND PERFORATED VERMIFORM APPENDIX.

At the last meeting of this Society I showed a gangrenous vermiform appendix nearly as large as the small intestine. The patient has made a good recovery. I have operated since that meeting in three other cases, with one death. In the fatal case, the abdomen was opened as a forlorn hope in a general peritonitis. Death took place in twelve hours. In this case, after the first attack, a year ago, the question of operation was considered. Almost before the patient's condition could be realized, in the second attack, a general septic peritonitis had developed, with vomiting and hiccough. Had I not seen at least one such case recover, I should have declined to operate. At such times operations offer so little hope that the question arises whether a surgeon does not owe something to his art and to his own reputation; and whether his duty requires him to interfere under conditions practically hopeless. After a long and varied experience in these frightful emergencies, I believe that the recoveries which occasionally result from operations undertaken in desperate cases justify the attempt in all where death is not absolutely certain; that interference is demanded in the strongest terms, and that the effect of the probable result upon the surgeon's reputation and upon the art of surgery is unworthy of serious consideration. The brilliant recoveries, though very rare, outweigh the harm, especially in a disease like appendicitis, which the lay mind looks upon as necessarily fatal if left to itself.

In another case a gangrenous and perforated vermiform appendix was situated behind the cæcum in a sac of healthy peritoneum, not shut off by old adhesions. The appendix was shelled out by passing the finger from the brim of the pelvis underneath the cæcum towards the kidney. The perforation was found at the tip, and under the gangrenous patch was the usual fæcal concretion. In this case pus could escape only by perforating the cæcum or by breaking into the peritoneal cavity. There was a possible route towards the right flank. Drainage in these cases seems to me always exceedingly dangerous — an opinion borne out by not infrequent fatal results, whether the case be treated surgically or left to itself.

I have taken the time of the Society to show this specimen and to comment upon the case because I do not agree with the views recently expressed by several writers, that the surgery of appendicitis is being carried too far. As one of those who see the most of this formidable disease, while not as yet accepting any fixed rules of procedure — certainly not that of always operating — I cannot but be sorry to see the let-alone treatment encouraged, especially as this method is the one most agreeable to general practitioners. An enormous amount of good has been done in the past eight years by the agitation of this subject. Any relaxation of our efforts in this direction, particularly that sanctioned by high authority, is in my opinion to be regretted.

EMERGENCY HOSPITAL AT WORLD'S FAIR.—There were treated at this hospital 18,500 cases, and there were 23 deaths at the institution.

FURTHER EXPERIENCE IN THE USE OF CHLORALOSE.

BY F. GORDON MORRILL, M.D.,
Visiting Physician, Boston Children's Hospital.

A CONSIDERABLE experience has convinced me that in "chloralose" we possess an hypnotic of great value. I have prescribed it in twenty cases of insomnia, with good results in almost every instance — exceptions to be noted a little further on. Properly used in cases *uncomplicated by hysteria or alcoholism* (I have had no experience with the drug in locomotor ataxia, sonambulism or pulmonary phthisis, the presence of either of which conditions is considered unfavorable to its action), it has appeared to me to justify the claims of its discoverers: that it is safe, produces no "habit," does not require a progressive increase of dose, and is reliable in its action, that is, produces refreshing sleep attended by no disagreeable after-effects. In simple insomnia it certainly acts "like a charm," and is destined, I think, to replace chloralamid, than which drug it is more reliable.

A case which particularly impressed me was that of an old man with organic heart-trouble, whose nights were rendered wretched by dyspnœa, palpitation and fear of sudden death. A fairly large dose gave complete relief every night during the six weeks which he survived after my first visit.

In the case of an elderly lady with whom other hypnotics had failed, and who, in her desperation, had formed the habit of obtaining sleep by taking a tumblerful of whiskey at bedtime, chloralose gave quiet and refreshing nights, and eventually enabled her to conquer a most obstinate insomnia of long standing. In this instance it was necessary to abandon the whiskey and pass several sleepless nights before taking the remedy, as alcohol is distinctly unfavorable to the action of chloralose.

A young married woman, whose inability to sleep was due to her anxiety concerning the health of her only child, took chloralose in a fairly large dose (six grains), and after a good night's sleep suffered from marked inco-ordination of motion for an hour after rising. The same effects followed a repetition of the dose, and the medicine was discontinued. A distinctly hysterical attack which occurred a day or two later furnished an explanation of the disagreeable after-symptoms.

In somewhat the same category may be placed the case of an old gentleman with an enormous prostate and a very irritable bladder, whose complaints of suffering always increased to a marked degree in the presence of a certain member of his family. Here six grains of the drug produced a very peculiar effect, for after three hours of quiet sleep he awoke delirious, and tried hard to get out of bed. Being restrained from this, he crawled about the bed for an hour, and then went quietly to sleep, expressing great satisfaction next morning for so quiet and restful a night — evidently having no recollection of the alarm he had caused his attendants. The chloralose was afterwards resumed in divided dose (the second cachet of three grains being given when the effects of the first had passed), and the result was far more satisfactory than that obtained by full doses of chloralamid, which had been given as a substitute in the interval.

A fuller appreciation of mental characteristics would have led, in the lady's case, to refraining altogether from exhibiting chloralose, and in the last mentioned instance the divided dose only should have been given.

A brief analysis of Goldenberg's thesis (Paris, 1893) shows sixty-four cases in which the drug was used. Of the fourteen failures, eleven were cases of women. Five of them were hysterical subjects; two were alcoholics; one suffered from severe gouty pains; one was a consumptive; and one had pulmonary emphysema and a secondary heart. The cause of failure in the eleventh case is not mentioned. Three were male cases, with locomotor ataxia, paralysis agitans and nocturnal syphilitic pains respectively.

The best method of administration appears to be to give a cachet containing three grains (those made here are more convenient to swallow than the imported) an hour before sleeping-time, and repeat promptly when the time is up if no effects are obtained. In case insufficient sleep follows the first dose, it is repeated when the patient awakes. The largest dose I have given in a single night was twelve grains. As a rule, it may be assumed that three grains (repeated as above in some cases) will insure from five to nine hours of refreshing sleep in any case of insomnia which cannot be readily classed among the exceptions which resist the action of the drug. The results which I have thus far obtained certainly encourage me to persevere in giving this new hypnotic a more thorough trial. It is as certain in its action as chloral, and far safer; as harmless as chloralamid, and far surer, so far as I have been able to observe.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Concluded from No. 19, page [illegible].)

SUTURE AFTER LAPAROTOMY.

Howitz,[13] of Copenhagen, at the recent Surgical Congress held at Gothenburg, discussed the comparative value of the methods and kinds of sutures which are used after laparotomy. According to him the abdominal hernia which occasionally occur after operation are dependent upon the manner in which the sutures are applied. Three factors determine the strength of the cicatrix: (1) The nature of the uniting surfaces; (2) the manner in which they are held together, and (3) the kind of suture used. As regards (1) the incision in the linea alba is not advantageous, since the conditions required for the formation of a sound scar are not present. In order to form a strong cicatrix the opposing surfaces of the incision must be fairly extensive and smooth, they should contain only a small amount of fat, and should be in apposition without much tension. In order to secure this condition of affairs the author advises that the incision should be made about two-thirds of an inch from the middle line, passing through the substance of the rectus muscle. As regards the method of suturing, he recommends the twisted suture, such as is used for harelip. In applying the suture a slightly curved needle is used, and only a small amount of peritoneum included in the suture. The sutures are made from silkworm gut. After the operation the patient is kept in bed for three or four weeks, so as to allow the scar to become firm.

THE INDICATIONS FOR LAPAROTOMY IN ACUTE INTESTINAL OBSTRUCTION.

Schlange[14] has successfully removed by primary resection 135 cm. of intestine. The laparotomy and resection was done to relieve intestinal obstruction. In discussing the indications for operation he divides these cases into three classes: (1) When there is abdominal distention and peristaltic motion exists (hence no general peritonitis since this paralyzes the intestine) with sudden onset, or symptoms quite persistent, the case is probably one due to local trouble and one should operate. (2) With marked tympanites and no peristalsis (paralysis, general peritonitis) operation only hastens death. The most one is justified in doing is to rapidly make an artificial anus. (3) When a limited portion of the intestine is affected while the rest is normal, this section becomes greatly distended, is paralyzed. The symptoms are always violent. The patient's strength decreases rapidly. There is not diffuse peritonitis. Here laparotomy performed early is the only chance for the patient's life.

FAT EMBOLISM FROM FORCIBLE CORRECTION OF JOINT DEFORMITIES.

Fritz Colley,[15] of Marburg, has reported a case where death followed fourteen hours after a forcible straightening of both knees, with symptoms of pulmonary œdema. The patient was twenty-six years of age. The clinical diagnosis was death from fat embolism. The autopsy confirmed this. The case differs from the usual cases of fat embolism in that without any bony lesion, the rupture of the cicatricial attachment to the femur of a fatty degenerated muscle allowed enough fat to enter the circulation to cause death. Also, that as a result of the filling of the heart capillaries with fat caused such an impediment to its proper nutrition that within fourteen hours acute fatty changes were produced. These conditions would suggest that *brisement forcé* is not free from danger as it has formerly been considered. That it becomes a serious operation when a muscle which has become atrophied and fatty degenerated from disease, is torn or a bone showing conditions of fatty osteoporosis is fractured.

DIAGNOSTIC AND THERAPEUTIC VALUE OF PUNCTURE OF THE SPINAL CANAL.

Pritchard[16] has published an interesting abstract of V. Ziemssen's article on this subject. The method of Quincke, of Kiel, which was first used for the purpose of decreasing the pressure in hydrocephalus, was used by Ziemssen in several cases of tuberculous cerebrospinal meningitis, brain tumors, etc. The spine is flexed to increase the interspace between the vertebral arches. The patient is anæsthetized. The fluid escapes with a rapidity proportionate to the pressure. The cerebral pressure was diminished by the operation. A case of tubercular meningitis was improved under this treatment. Quincke after operating twenty-two times found that the fluid reaccumulated rapidly. He found that hydrocephalic fluid contained less than 1% of albumen. Above 1% indicates that an inflammatory process is probable. Above 2% is sometimes found in tubercular exudations. He thinks puncture is indicated in acute exudations of tuberculous or serous nature. To prevent a reaccumulation of fluid he slits the dura so as to permit continual drainage into the surrounding tissues. Ewald, of Berlin, found puncture caused only temporary improvement.

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[13] Sem. Méd., [illegible] British Medical Journal, August [illegible], 1893, p. [illegible]

[14] Berlin. klin. Wochenschrift, [illegible]

[15] Deutsche Zeitschrift f. [illegible]

[16] Annals of Surgery, 1893, vol. xviii, [illegible]

THE CLINICAL COURSE, DIAGNOSIS AND STRUCTURE OF DUCT CANCERS OR VILLOUS CARCINOMAS OF THE BREAST.

Anthony Bowlby[17] has contributed a valuable paper upon this subject, and his conclusions are as follows:

"(1) In a considerable proportion of the cases there is at some time a discharge of fluid from the nipple, and this discharge may precede the development of any tumor perceptible to the patient for a period of even several years. The growths are, however, not associated with so-called eczema of the nipple, or Paget's disease.

"(2) The patients are mostly over middle-age.

"(3) The axillary glands are not usually affected.

"(4) The tumors are not of very rapid growth.

"(5) Neither the nipple nor the skin is usually retracted, but the growths are commonly situated near to the nipple.

"(6) The tumors are occasionally multiple in the same breast, and are firm and elastic, or else shotty and knotted to the touch rather than hard and nodular like a scirrhous carcinoma.

"(7) On section, the growths are seen to be encysted, and are generally darkly blood-stained, soft and friable. Sometimes they are of a lighter color, and grayish and granular on the surface. Some of the cysts are almost filled with solid growths, others contain little but blood-clot and serum. It can often be plainly seen with the naked eye that some of the cysts are formed by dilated ducts, and the solid growth can often be seen springing from the lining membrane of the latter. The cysts and the growth may be situated either in the gland or in the surrounding fat. Occasionally, the tumor may protrude through one of the dilated ducts on the summit of the nipple.

"(8) The tumors are liable to recur locally, but are not nearly so prone to affect the lymphatic glands or to disseminate as are the spheroidal-celled scirrhous carcinomas. If attention be paid to these points, I think no difficulty will be found in diagnosing these tumors from scirrhous carcinomas. Sometimes there is difficulty in separating them clinically from the cystic sarcomas.

"With regard to this the following points are worthy of attention: Duct cancers occur frequently in old women, in whom the growth of cystic sarcoma is relatively uncommon; they do not attain so large a size, nor do they grow so rapidly as do the cystic sarcomas; the cysts they form are usually much smaller than are the cysts in the latter class of growth; the discharge from the nipple is usually much more blood-stained."

THE PREVENTION OF SHORTENING AND OTHER FORMS OF MAL-UNION AFTER FRACTURE.

Keetley[18] has contributed an interesting paper upon this subject. He uses steel pins to secure the ends of the fragments of a divided bone, and the details of the method he has used are as follows:

"The instruments required are: (1) two L-shaped pins of hardened steel thickly plated with silver; (2) the patella instruments described by me in the *Lancet* for December 10, 1892, or at least the long-bladed brad-awl; (3) a pointed tenotomy knife; and (4) a flat sand-pillow. Each L-shaped pin consists of course of two arms, one cylindrical, the other flattened in a plane at right angle to the rounded arm. The cylindrical arm is seven millimetres in circumference, and has a rounded blunt point. The length is three and a half inches, that is, nearly nine centimetres. The flattened arm of one pin is three inches long, that of other being five inches. Both are one-fourth of an inch wide, about one-tenth of an inch thick, and there are notches at the edges at intervals of one-fourth of an inch. The patella brad-awl has, it may be mentioned, a blade three and one-half inches long, and both its blade and its handle are of one smooth piece of nickelled steel, the handle being made hollow for lightness.

"*Operation.* — Stringent antiseptic precautions must be used, and they are particularly easy in an operation like this, where the open wound is a puncture and nothing enters it except two or three straight and smooth pieces of plated steel. This easiness is no excuse for carelessness — it only makes neglect inexcusable. The following are the details of the operation:

"(1) Reduce the fracture under ether, breaking it down again if union has taken place recently in a bad position.

"(2) While two assistants make extension and counter-extension, adjust the fractured ends and try to ascertain the precise seat and place of fracture. Select a point in each fragment likely to be clear of the fracture, and in such a position that a straight line from it transversely perforating the bone would keep well clear of important vessels and nerves, synovial membranes, etc. In both my two cases I have been surprised to find how far it was necessary to go from the fracture in order to find a firm place in the lower fragment. The two points selected should lie as nearly as possible above one another, and not in a spiral line circling the limb.

"(3) Puncture the skin, push the brad-awl through the puncture down to the bone, use it very gently as a probe to define the position of the bone, and then bore steadily through. Take care not to break the long blade and not to perforate obliquely.

"(4) Slip the director along the awl. If the handle of the latter is in the way bend the former a little and have the skin pressed down on the bone.

"(5) Withdraw the awl, twisting and not jerking it out; keep the director carefully in position.

"(6) Pass in one of the pins through the bone and withdraw the director. Repeat 3, 4, 5 and 6 in the case of the upper fragment. Take care to bore both fragments in the same longitudinal plane.

"(7) The two pins being now in the bone, turn them into such a position that the flat arm of one lies upon, and touches the flat arm of the other. If the arms are to remain less than five inches apart the long-armed pin must lie over the other. The advantage of making the flat arms of different lengths will now be seen. The pins can be thereby fixed at any distance from two to six inches apart.

"(8) Full extension being made, and the limit demonstrated by measurement to be of proper length, lash the flat arms of the pins together with silver wire pulled taut and twisted home at the ends. See that there is full tension on the pins before fixingt hem, for they have a slight elasticity. If this point is not attended to a quarter of an inch or more may be lost.

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[17] Lancet, June 10, 1892, p. 1369.

[18] Lancet, June 10, 1893, p. 1377.

Dressings.—Iodoform gauze wrung out in sublimate solution (1 to 2000) should be placed beneath and above the external arms of the pins; the gauze should be flat and not lumpy. Over the gauze a well-rolled wood-wool pad should be placed, and all round the limb at and near the fracture there should be a sheet of absorbent wool. The whole should be bandaged firmly and evenly, firmly enough to prevent any internal extravasation. Lastly, external appliances suitable to the case should be put on. If, as in my first case, the superior fragments tend to ride forward, I use a double splint with transverse iron lips or brackets, and in all cases I should use extension."

He has used them in two cases. In one a boy of thirteen, the use of the pins prevented the slightest shortening. In the other case there was some rusting of the pins, which occasioned superficial suppuration. They were removed on the forty-third day following the operation, and the fifty-third day after the fracture. Firm union resulted without the slightest shortening.

A NEW METHOD OF DIRECT FIXATION OF THE FRAGMENTS IN COMPOUND AND UNUNITED FRACTURES.

After a careful review of all the methods which have been proposed for the direct fixation of fragments, Senn[19] brings forward a method he has devised, which consists of a bone ferrule which is applied in compound fractures. The method of preparation of the bone ferrules is as follows:

"The ferrules are made of different sizes from fresh bone obtained from the slaughter-house or butcher-shop. For the humerus and femur of the adult the femur of an ox should be selected; for children, the same bone of a smaller animal will answer the purpose. For the tibia, the corresponding bone of the animal is chosen. With a sharp saw the shaft of the bone is cut transversely, the length of the sections corresponding with the desired width of the ferrule, which will vary from a quarter of an inch to an inch. With a round file the medullar canal is enlarged until the thickness of the bone does not exceed one-sixth of an inch; in some instances a much thinner ring will furnish the necessary lateral support. If the ferrule is longer than an inch it should be perforated at a number of points in order to furnish so many avenues through which the products of tissue proliferation and the new blood-vessels can reach the tissues outside of the ferrule, and *vice versa*, and also with the intention of facilitating the absorption of bone after the fracture has become consolidated. Ferrules made of the tibia should retain the shape of the bone in order to adapt their lumen to the treatment of fractures of the tibia. Sterilization is effected by boiling for an hour or more, after which the rings are kept immersed in sublimate alcohol (1 to 1000) ready for use. Future experience may show that partial decalcification of the bone ferrule is an advantage. Should further clinical experience show that the bone is not sufficiently absorbable, such ferrule could be made of chromicized catgut."

The ferrules are applied in the following manner:

"In the treatment of compound fractures the observance of the strictest antiseptic precautions, and in the operative treatment of ununited fractures by this method, rigid aseptic measures must precede and accompany the direct treatment of the fracture. The seat of fracture must be exposed in such a way that both fragments are readily accessible. The ferrule must be large enough so that it can be slipped over the fragments without danger of breaking it. In the majority of cases the use of an anæsthetic is indispensable for the purpose of securing complete muscular relaxation and the necessary immobility of the limb not only until reduction is effected and the ferrule is in place, but until the whole dressing is applied and complete immobility at the seat of fracture has been assured. After the seat of fracture has been freely exposed, the most accessible fragment is isolated from the surrounding tissues with as little disturbance of the periosteum as possible, when the ferrule is slipped over the fragment and is pushed away from the line of fracture far enough to clear the other fragment. After reduction has been accomplished, the second fragment is engaged in the ring, which is then pushed back sufficiently far to grasp both fragments securely.

"A reliable assistant should hold the limb in proper position, as bending at the seat of fracture might break the ring. Hæmorrhage is to be carefully arrested, and if the wound is aseptic the different tissues are separately united by buried sutures. In case of infected fractures, and in fractures accompanied by troublesome oozing, free drainage must be established. Bending at the seat of fracture is prevented and absolute immobilization secured by a circular plaster-of-Paris splint, which can be fenestrated at a point opposite to the wound if the wound has been drained. Harmful pressure is avoided by interposing between the surface of the limb and splint a layer of antiseptic hygroscopic cotton at least an inch in thickness, and localized decubitus is prevented by protecting all bony subcutaneous prominences with special care.

"With a view of securing perfect immobility of the fragments as early as possible, small splints of wood or metal are incorporated in the plaster-of-Paris dressing in such a way as to form an unyielding bridge across the line of fracture, an important matter during the time required for the setting of the plaster. The limb, especially if it is in the lower extremity, should be kept suspended in an elevated position for a number of days, in order to prevent as far as possible the occurrence of œdema at and below the seat of fracture. If the wound has not been drained, and no indications for a change of dressing present themselves, the first dressing should not be disturbed until union between the fragments is sufficiently firm to prevent displacement during the second dressing. In wounds that require drainage, the dressing is changed after two to five days without interrupting the fixation splint. Should suppuration set in, the bone ferrule should not be removed until direct fixation has become unnecessary, when the sinus is enlarged, the ring cut on one side with bone forceps, and fractured on the opposite side by bending, when each half can be extracted separately. Loose fragments of bone are removed at the same time."

He draws the following conclusions:

"(1) Direct fixation of the fragments is indicated in all compound fractures in which perfect retention cannot be secured by simpler measures, and in the treatment of ununited fractures requiring operative interference.

"(2) This method is also justifiable in the treatment of certain forms of subcutaneous fractures, in which reduction and retention cannot be accomplished without it.

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[19] Annals of Surgery, August, 1893, p. 127.

"(3) Free exposure of the fragments in compound fractures secures the most favorable condition for thorough disinfection.

"(4) Perfect reduction and direct fixation of the fragments are the most reliable prophylactic measures against delayed non-union and deformity.

"(5) A compound fracture should be regarded in the same light as an injury of the soft tissues, and should be treated upon the same principles; namely, accurate coaptation of the different anatomical structures, and perfect retention by direct means of fixation, aided by an efficient external support.

"(6) Bone suture, metallic, bone and ivory nails do not furnish the necessary degree of support and immobilization in the direct treatment of fractures characterized by a strong tendency to displacement.

"(7) The solid intra-osseous splint of ivory or bone as advised by Heine, Langenbeck and Bihcher is objectionable because it interferes with the ideal production of the intermediate callus, and its spontaneous removal is beyond the absorptive capacity of the tissues.

"(8) The hollow, perforated ivory or bone cylinder devised by the author, answers the same mechanical purpose without the objections which have been charged against the solid cylinder.

"(9) The safest and most efficient means of direct fixation of oblique fractures is by a bone ferrule, which must be applied in such a manner that it surrounds both fragments.

"(10) Such a circular absorbable direct splint prevents to perfection lateral and longitudinal displacement.

"(11) Rotation of the limb below, and angularity at the seat of fracture, must be prevented by a carefully-applied circular plaster-of-Paris splint.

"(12) For fractures not requiring drainage the entire wound should be closed by buried and superficial sutures, as the bone ferrule is removed by absorption.

"(13) In suppurating wounds the bone ferrule should not be removed until direct fixation has become superfluous by the formation of a sufficiently firm union between the fragments.

"(14) The external splint should be applied in such a manner that it does not require a change throughout the entire treatment, permitting at the same time access to the wound should this become necessary.

"(15) Direct fixation of a fracture combined with perfect immobilization brings the different anatomical structures of the broken bone permanently into their former normal relations, preparing the way for the early initiation and speedy consummation of an ideal process of repair and the realization of a perfect functional result.

"(16) Should future experience demonstrate that bone is not sufficiently absorbable, the same kind of ferrules can be made of partially decalcified bone or chromicized catgut."

OLD DISLOCATION OF THE HUMERUS TREATED BY OPERATION.

Dr. A. M. Phelps[20] reports a satisfactory result, obtained by this method. The patient was an old man with a dislocation of the left humerus of several months' standing, with firm, bony adhesions. The head of the bone was exposed by an incision, removed and replaced in the glenoid cavity after this had been cleaned of the new-formed material. The patient recovered with fair motion. Dr. Phelps, in view of his experience in this case, considers that this method will give better results than the common practice of forcibly rupturing the adhesions by manipulation, followed by the attempt to reduce as in fresh dislocations.

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Viktor Wagner. Die Aseptic in der Kriegschirurgie. V. Volkmann's Samml. Klin. Vorträge, N. F., 1893, 65-66.

Maurice H. Richardson and J. G. Mumford. Dry aseptic operating. American Journal of the Medical Sciences, June, 1893, p. 654.

A MEDICAL STUDENTS' PARADE. — The medical and dental students of Philadelphia had a torchlight parade last week, in which some fifteen hundred men took part.

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[20] Patient shown at the meeting of the New York Academy of Medicine, Surgical Section, January 9, 1893. See New York Medical Record, 1893, vol. xliii, p. 89.

Reports of Societies.

NEW YORK STATE MEDICAL ASSOCIATION

TENTH ANNUAL MEETING, NEW YORK, OCTOBER 9, 10, 11 AND 12, 1893.

(Concluded from No. 19, page 47[illegible].)

SECOND DAY (WEDNESDAY). — MORNING SESSION.

Dr. William H. Robb, of Montgomery County, read a paper entitled,

TREATMENT OFTEN INDICATED AFTER TRACHELORRHAPHY.

The hygienic treatment he considered very important, and mercury and iodide of potassium he had found very useful in unloading the portal circulation and improving the nutrition of the uterus. Chronic endometritis is the most common affection met with, and it is best treated by dilatation, curettage and packing the uterus with iodoform gauze. Imperfect union of the torn surfaces after trachelorrhaphy sometimes results in a chronic enlargement of the uterus.

Dr. W. D. Granger, of Westchester County, sent a communication on

VOLUNTARY COMMITMENT OF THE INSANE TO ASYLUMS.

He said that the modern idea was to make asylums hospitals in which the treatment might be individualized as much as possible. The law of New York State now permits insane persons to voluntarily commit themselves to family asylums, provided that their mental condition is such that they appreciate what they are doing. They are at liberty to leave the asylum at any time.

Dr. Gustavus Eliot, of New Haven, Conn., read a paper on

THE TREATMENT OF ENTERIC FEVER.

He considered absolute rest of so much importance to the safety of the typhoid fever patient that he advised the physician to withhold his permission for a patient to leave his bed with any fever if there was the slightest doubt as to the diagnosis. The patient with enteric fever should be kept perfectly quiet, both in body and mind, not only during the whole course of the febrile stage, but for at least one week after the morning and evening temperature had reached 99°. The treatment he believed to be the most efficacious was at the beginning to administer seven to ten grains of calomel on alternate days for four doses, and then follow this by giving carbolic acid or iodine in very weak solution. This treatment improves all the symptoms and actually shortens the disease.

Dr. George Douglas, of Chenango, favored the calomel treatment at the outset, but would not give more than two or three doses. He did not approve of the free use of alcoholic stimulants in this disease.

Dr. William Finder, of Rensselaer County, said he had unbounded faith in sulpho-carbolate of zinc as an antiseptic and astringent.

Dr. John H. Martin, of Otsego County, employed very much the same treatment as that described in the paper. He fed his patients well, however, from the outset, and was entirely opposed to the administration of alcohol in typhoid fever.

Dr. E. R. Squibb explained that the probable benefit derived from the calomel lay in the fact that, when taken into the stomach, calomel is changed into an albuminate, and afterwards slowly converted into the bichloride, which is so well known as an antiseptic. On this account, the calomel should be given dry on the tongue, and on an empty stomach, for, if much diluted, it is not so promptly and thoroughly converted into the albuminate.

AFTERNOON SESSION.

Sir James A. Grant, of Ottawa, Canada, read a paper entitled

RARE FORMS OF GOUT AND RHEUMATISM,

in which he narrated the history of several cases, among others, one of a young girl who had all the usual symptoms of perityphlitis, until one day the joints of the upper extremities were attacked with acute articular rheumatism, when the abdominal symptoms rapidly subsided. This he was inclined to look upon as a case of rheumatism affecting the intestinal walls. Haig, of London, had reported such cases.

Dr. Donald McLean, of Detroit, in a paper entitled

SURGICAL AND PATHOLOGICAL MEMORANDA,

spoke, among other things, of ununited fractures, and said that an extensive experience with such cases had led him to believe that in a large proportion of cases the cause of the non-union was to be found in excessive violence at the time of the fracture. He showed the aortic compressor which he uses to control hæmorrhage when amputating at the hip-joint, and expressed himself as most decidedly in favor of this method, which he considered even superior to Wyeth's.

DISCUSSION ON THE TREATMENT OF APPENDICITIS.

Dr. Frederic S. Dennis, of New York County, opened the discussion, propounding the following questions:

Question 1. — What proportion of cases of appendicitis end in resolution?

Question 2. — What class of cases require immediate operation?

Question 3. — What class of cases do not require immediate operation?

Dr. Dennis said there were several different varieties of inflammation occurring in the region of the cæcum, and it is now generally accepted as a fact that about fifty per cent. of all such cases go on to resolution, and only about eleven per cent. show a tendency to relapse. He did not approve of operative interference in appendicitis except the symptoms are decidedly acute, and remain unabated for forty-eight hours. The operation should not be looked upon lightly; it is by no means easy; the length of the incision makes ventral hernia a very common sequela, and the fact that eminent practitioners frequently err in the diagnosis should make one slow to resort to operation without the best of reasons for so doing.

Dr. J. W. S. Gouley, of New York County, took the same position. He cited several illustrative cases taken from his own experience, to show that many cases presenting urgent symptoms, still recover without operation.

Dr. McLean spoke of the perplexing nature of the questions propounded, and the heavy responsibility which they carried with them. He also referred to a number of cases showing how frequently these inflammations terminate in resolution, and also one as a lesson to those who were inclined to look upon the operation as one of but little gravity.

Dr. Joseph D. Bryant, of New York County, said if the fever, tenderness and tympanites continued after three days, and especially if there was rigidity of the rectus muscle, he would advise operation. He considered the presence of this muscular rigidity a more reliable guide than the temperature. He stated that seventy per cent. of all males have a foreign body in the vermiform appendix, while this condition is present in only about forty per cent. of females. As this is about the proportion in which appendicitis affects the two sexes, it would seem that the presence of a foreign body had much to do with the occurrence of the appendicitis. When perforation occurs, the symptoms are usually quite acute, and indicate the need of immediate operation. The "McBurney point" cannot be considered as characteristic of appendicitis, for it has been found in other conditions, and, moreover, no such fixed point can represent approximately the position of the *caput coli*, which is now known to be situated not infrequently down in the pelvis, or high up behind the colon.

Dr. Wyeth, of New York County, was in favor of an early resort to an exploratory operation, for all the disasters he had seen in this department of surgery had been due to delay. Again, in the early operations, there is less danger of ventral hernia.

THIRD DAY (THURSDAY). — MORNING SESSION.

Dr. Douglas Ayres, of Montgomery, read a paper entitled,

THE MALE CATHETER, WITH SOME OBSERVATIONS UPON THE PROPER MODE OF INTRODUCTION INTO THE BLADDER.

The silver catheter is his main reliance, because its exact position in the urethra is so much more easily determined. The patient should be recumbent, with the thighs drawn up and well separated, and the shoulders raised. The introduction is sometimes greatly aided by pressing down the soft parts over the pubes, thus relaxing the suspensory ligament.

Dr. Gouley exhibited a bronze model of the catheter found in the ruins of Pompeii. It had the sigmoid form generally thought to have been invented at a much later period; it is distinctly conical, and had a single eye near the vesical end.

Dr. Gouley also exhibited a number of catheters of American make, which he claimed had a finer finish than those of foreign manufacture.

Dr. William Finder, of Rensselaer County, in a paper entitled

RESEARCHES ON THE EFFICIENCY OF VACCINIA AFTER TYPHOID FEVER,

said that from 1874 to 1880 small-pox was almost epidemic in Troy, and at this time he first noticed that persons that had recently been sick with typhoid fever could be vaccinated with the greatest ease, and comparing them with others who had also been previously protected in their childhood by vaccination, he found that typhoid fever seemed to possess the power of eliminating from the system the protection produced by vaccination. It is his practice now to vaccinate his patients after recovering from typhoid fever. He had hesitated to present this theory until he had made a great many observations, and could verify his position beyond a doubt; but opportunities of this kind are not very frequent, and finding that some observations made some years later were confirmatory of the first ones, he had decided to ask others in the profession to continue these observations, that the correctness of this theory might be determined.

Dr. H. Ernst Schmid then read an entertaining and very suggestive paper entitled

REFLECTIONS ON THE NEED OF CLOSE OBSERVATION OF DISEASE, AND UPON THE VALUE OF HYGIENIC THERAPEUTICS.

He showed that some of the seemingly miraculous diagnoses of quacks were easily explained by a habit of exceedingly minute and rapid observation.

Dr. Darwin Colvin, of Wayne County, reported a case of

PUERPERAL BLINDNESS,

with a view to showing the action of venesection, both prophylactic and curative.

Dr. T. J. McGillicuddy, of New York, said he had had five cases of such blindness occurring with puerperal eclampsia, yet all had completely recovered without resort to bleeding.

Dr. McGillicuddy then read a paper entitled,

A PLEA FOR THE NON-OPERATIVE METHOD OF TREATING DYSMENORRHŒA, PELVIC INFLAMMATION AND PELVIC ABSCESS.

He thought much good could be accomplished by the free use of hot water, both by mouth and by rectum, thus stimulating the portal circulation and promoting the absorption of exudates.

A number of other papers were contributed, but most of them were read by title.

The following communication was ordered sent to the American Medical Association, in answer to its circular letter inquiring as to the advisability of amending the Code of Ethics:

"In reply to the notice that the American Medical Association had requested the State medical organizations in affiliation with that body to express their wishes in reference to any changes in the Code of Ethics, the New York State Medical Association has to state that it has made that code one of its foundation stones, and that it is entirely opposed to any alteration therein. This is the result of a full reconsideration of the subject, and after an experience of ten years of organization under the code."

Dr. Thomas D. Strong, of Chautauqua County (fourth district), was elected President for the ensuing year; and Dr. Isaac de Zouche, of the first district, Dr. John C. Benham, of the second district, Dr. Homer O. Jewett, of the third district, and Dr. John D. Rushmore, of the fifth district, were elected Vice-Presidents.

"The Medical Profession" in England. — In the official census reports of the Registrar-General's office of England, the medical profession, which in legal language means only medical practitioners on the Register, is made to include dentists, dental-apparatus makers, medical students, assistants, midwives, nurses, and invalid attendants, "*as well as sundry other persons more or less directly connected with medicine.*"

THE BOSTON

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THE LATE SIR ANDREW CLARK.

Dr. Andrew Clark was one of the indefatigable workers of this age. His private practice was large, his *clientèle* influential. His contributions to medical journals, though somewhat desultory, would fill a large volume, and most of these writings contain new facts and possess a permanent value. He was always a favorite writer. He was a master of good style. Among his contributions we may specify, as containing much original observation and investigation, his Lumleian lectures on Dry Pleurisies; his exhaustive studies on Fibroid Phthisis; papers on Neuræsthenia, on the Hemoptysis of Aged Persons, on Tuberculous Sputa, on the Anæmia and Chlorosis of Girls, on Disease of the Valves of the Heart, etc. In 1891, he began a course of clinical lectures on Common and Functional Diseases, completed last year, which attracted wide attention and has been of service to the cause of medical education. These lectures were of great use in showing students his own methods of seeing patients, and his own way of eliciting the truth as to their case and wants.

Dr. Clark was an eminently practical man, and his almost intuitive faculty of getting at the basic facts of a case and analyzing them on common-sense principles, made him much sought after as a consultant. It was always his aim, if possible, to meet causal indications, but, failing in this, to bring to every case an adequate understanding of the physiological principles applicable to the removal of the conditions imperiling life. He insisted especially on attention to all the minutiæ of the hygiene of patients — food, drink, sleep, exercise, etc.

Dr. Clark was associated with the London Hospital from 1854, about which time he came to London for the sole purpose of studying pathological histology (and with no intention of engaging in the practice of medicine), and helped create the great medical school now attached to the hospital. For his services in connection with this medical school he was honored by an ovation and a presentation July 15, 1889.

Dr. Clark labored to bring up the medical societies of London, and especially the Clinical Society of which he was a favorite member, to the highest standard of efficiency, through diversity of inquiry, community of work, unity of purpose and severity of procedure. Not soon will be forgotten by those who were present the golden words of his presidential address delivered at the Clinical Society of London, January 26, 1883, a portion of which may be appropriately quoted here:

"In the work of the younger members of our profession I see, or at least I think that I see, greater care, patience and accuracy in observation, a more rigorous fidelity in the record of therapeutical experiments, wiser caution in speculation, graver deliberation in judgment, a growing frankness in the confession of oversights and errors, increasing severity in the siftings and testings of their own conclusions, a readier effacement of the personality in the work, less unseemly eagerness for mere priority of publication, a deepened sense of the responsibilities of premature speech and writing, a rapidly abating bitterness in the conflicts of opposing views, a more robust and manlier spirit of scientific life, and less reluctance in making admission that there is no unconditional truth in the results of our inquiries — no finality in our finished work, no creed in medicine. But the Society has done more than train good workers; it has repressed bad workers. For one competent and conscientious worker there are ten who are incompetent and unconscientious, and who in divers ways hinder our progress and spoil our present possessions. Intolerant of the patient and painful toil of the true worker, acute in power of superficial observation, gifted with a certain showy versatility, quick at catching hold of new ideas, ingenuous in guessing, crude in experiment, loose in therapeutic trials, hasty in speculation, strong in dogmatic assertions, accomplished in the transfiguration and use of other men's work, finding what they want wherever they seek it, unhindered by difficulties, facile in speech, ready in writing, thirsty for notice, such men, now, alas, not uncommon in medicine, beget papers so quickly that they can have no necessary relation to time, observation or thought, and flood our literature with their unworthy if not unveracious lucubrations. The favorite hunting-ground for such men is therapeutics, and their favorite sport is the catching of remedies, the putting of them to new uses, and the setting forth of their successful results. These men discern no difficulties and have no failures; they can illustrate their successes by scores of cases, and explain them by the most ingenious theories. There is scarcely any limit to the extent and variety of their achievements, and as they flaunt along in the fulness of self-satisfaction, they look down with pitying condescension upon those in the straight and narrow way who conscientiously toil with small success in seeking after truth, but who, nevertheless, missing the praise of men, find strength and solace in their favored search."

His introduction to the discussion on "Cases of Valvular Disease of the Heart, known to have Existed for over Five Years without Causing Serious Symptoms" — a discussion which took place in the Section of Medicine at the annual meeting of the British Medical Association in 1886 — will be recalled as an important and valuable contribution to practical medicine.

As President of the Royal College of Physicians, and thus the official representative of the profession in England, Sir Andrew was most kind and hospitable to medical men from other countries visiting London, and to none more so than to our countrymen. Any one who had the privilege of knowing him in his own home could not fail to be impressed by the amount of systematic work which he accomplished in the twenty-four hours.

At the funeral, which recently took place in Westminster Abbey, Mr. Gladstone was the chief pall-bearer. The occasion was an impressive one. The wise and eager physician borne to his last resting-place at the age of sixty-seven by the distinguished and eager statesman at the age of eighty-four, whom as friend and physician, he, the younger man, had so often and so long shielded from the consequences of his own restless impetuosity. It would have been a distinct gain for the profession had some one been able to do for the physician what he himself had done for so many other well-known men. For Sir Andrew, at the age of sixty-seven, was still, as years count in England, a young man.

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VERTICAL HANDWRITING.

The relation between one's penmanship and spine does not at first appear to be very close; but the direct and important hygienic effect of the position of the body required in one or another style of penmanship is well brought out by the statement and illustration of Mr. Witherbee in a recent paper. In his "Argument for Vertical Handwriting"[1] he adds to the plea for the more legible vertical style of writing, a forcible statement of the important effect upon the child's health and figure which a more rational handwriting entails.

The Vienna Commission to investigate the cause of the increase of spinal curvative and ocular trouble among school children reported that the chief factor was sloping handwriting and the faulty positions necessitated by it.

The vertical script is easier to read, easier and quicker to write, as it requires a shorter distance for the pen to travel in making each letter; for the mathematical reason that the perpendicular of a right angled triangle is shorter than the hypothenuse. There is less strain upon the eyes as the position of the body faced squarely to the desk brings both eyes at an equal distance from the paper. With the lateral position taught in most of our schools the pupil most either twist the head to one side, adding to the spinal bend, or strain the accommodation of the eyes to unequal foci.

The specimens of writing and photographs which are reproduced are most telling arguments for the justice of the plea, and aside from the arguments as to ease of teaching or reading or the elegance of appearance, the simple fact that vertical writing puts the pupil in a correct position as regards the spine and the eyes is sufficient grounds for its adoption in our school systems.

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MEDICAL NOTES.

Bequest for a New Hospital for New York. — The will of the late Mrs. Mary March, after giving $10,000 each to Bellevue Hospital and the Louise Home of Washington, leaves the remainder of the estate, which is valued at nearly a million dollars, to Grace Church, in New York, for the erection of a hospital, to be known as the John Payne March Memorial Hospital, for the relief of the sick, aged and indigent in Grace Church parish.

Death of Dr. Moncrieff. — The report of the probable death of Dr. David Scott Moncrieff, which was received during the summer, has been confirmed by the United States Minister to Japan, who reports that the body of Dr. Moncrieff has been found at a place called Vingov, on the Saghalian coast of Siberia, whence it was sent to Alexandrovski. He was sent to Siberia, to study anthropology, by the Peabody Museum of Harvard University, and was drowned when out sailing.

The Abolition of the Office of Coroner. — At a meeting of the Medico-Legal Society held on November 8th, Clark Bell, of New York, Judge Abram H. Dailey, of Brooklyn, Theodore H. Tyndal, of Boston, Wyatt Johnson, M.D., of Montreal, Judge S. G. Garrison, of Camden, N. J., H. W. Mitchell, M.D., of New York, Morris Ellinger, Esq., of New York, were appointed a committee of seven to prepare a memorial to be presented to the Legislature of the State and to the approaching Constitutional Convention, favoring: (1) The abolition of the office of coroner in the State of New York; (2) the adoption of appropriate legislation and changes in the Constitution of the State that would remedy the defects in the existing system; and (3) brief reference to the labors of this body during the past years for the attainment of this result, and the recent action of the New York *Herald* and other journals and the Grand Jury of New York County upon the subject.

Royal Obstetric Fees. — Dr. Playfair, who recently attended the Princess Marie, of Roumania, in confinement, was presented by the king with a gold snuff-box and the insignia of a Grand Officer of the Order of the Crown of Roumania, in addition to his fee, which is said to have been £2,000.

A Physician's Gift to San Francisco. — Dr. Levi C. Lane, of San Francisco, has presented to the city of San Francisco a large building with two wings, each two stories high, which he has had built for a fully equipped hospital, to be used as an annex to the Cooper Medical College of that city.

Philadelphia Maternity Statistics. — The figures given in the report of the Philadelphia Maternity Hospital add another proof of the value of lying-in hospitals and obstetrical cleanliness. During the last hospital year there were 132 cases treated, with two deaths, one from phthisis and one from chronic nephritis. Three children were still-born and of the 134 born only five died. In the last four years, with 565 deliveries, no patient has died from preventable causes.

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[1] Popular Science Monthly, November, 1893.

Medical Students in Germany. — The total number of matriculated students in the universities of the German Empire in the summer semester of 1893 was 28,053, of whom 8,838 were students of medicine. The number in the corresponding part of the foregoing academic year was 8,414, showing an increase of 424 or 4.8 per cent. The number of foreign medical students was 474.

Women Physicians in Russia. — According to Dr. Heizenstein, of St. Petersburg, there are about seven hundred women physicians in Russia. Their position is steadily becoming better and already many of them hold important public appointments to hospitals and almshouses. A large majority of them are native Russians, about twenty-five per cent. are Jewesses and the remainder of various Slavonic races.

BOSTON AND NEW ENGLAND.

Small-Pox in Boston. — During the last fortnight five cases of small-pox have occurred in Boston among recent immigrants due to infection during the voyage from Liverpool on the Cunard Steamer *Catalonia*. A case of small-pox occurred during the voyage but as all the passengers had been vaccinated they were allowed to land. A few days later two cases of small-pox were reported, both patients having been steerage passengers. Further inquiry has shown that one of these men, at least, washed his arm immediately after being vaccinated thereby making his protection useless. No new cases occurred until November 12th when three patients were reported from South Boston. It seems that a young girl of thirteen years who was a steerage passenger on the *Catalonia* went at once to live with her sister in South Boston. She was taken ill the next day but was not attended by a physician. Later, when she was convalescent, three others of the family were taken ill with what proves to be small-pox. All the patients have been taken to the hospital and the well members of the family are quarantined in their house.

Diphtheria in Lynn. — An outbreak of diphtheria has occurred at the Children's Home of the Lynn Poor Department. For some time the Home has been overcrowded and without sufficient means of isolating sick children. Of the twenty-five inmates, seven are already ill and one has died. An unoccupied house has been secured for the use of the children not yet ill, and the City Government has voted the money needed to finish the improvements at the Home.

Bequests for Medical Purposes in Memory of Dr. Hunt. — By the will of the late Mrs. Mary C. Hunt, of Hartford, Conn., widow of Dr. Ebenezer K. Hunt, $25,000 is left for the sole use of the Medical School of Yale University. Provision is also made for erecting a building in Hartford for the use of the Hartford City Medical Society as a memorial to Dr. Hunt.

Maine General Hospital. — At the annual meeting of the trustees of the Maine General Hospital held last week, the report of the resident physician and superintendent showed a total of 1,069 patients treated during the past year, 221 of them being free patients. The income the past year was $3,915.22 less than the expenses. The total amount expended for the treatment and care of free patients was $18,327.08 against 13,791.78 last year.

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Miscellany.

THE RESULTS OF TOO MANY MEDICAL SCHOOLS.

In his inaugural address at the opening of the four years' course of study in the Medical Department of the University of Pennsylvania, Dr. William Pepper reviewed the progress toward higher medical education in this country. He said:

"Much of the evil of a debased medical education standard in this country has come from the reckless distribution by State legislatures of charters and degrees conferring privileges to new and imperfectly equipped medical schools. . . . In 1877 there was an average of one medical school in the United States to every 477,392 inhabitants, while in Germany or Great Britain there was one to one and three-quarters of a million population. In the twelve years from 1878 to 1889 inclusive, there were sixty new medical schools established. Fortunately they are apt to be short lived. At present I have been able to demonstrate the existence of only 140 or one to 440,150. In every other country the ratio has increased in the opposite direction. It cannot be maintained that the sparsely settled state of our country justifies or explains this condition. In Brazil there is now but one medical school for every 7,001,167 inhabitants; and in Russia but one for every 14,403,317; while in New York State, with 6,000,000 population, there are fourteen medical schools, or one for every 428,418; in Missouri, with 2,679,184 population, there are thirteen, or one to every 206,091; and in that vigorous community of Ohio, numbering 3,672,316, there are, I believe, in actual existence, no less than nineteen medical schools, or one to every 193,279.

"The effect of these numerous small medical schools upon medical training and the medical profession at large can only be harmful. A more remote but no less important effect upon the community at large is very properly brought to notice. Medical education no longer does consist, and never should have consisted, in the reading by the professor of systematic courses of lectures to bodies of students which might number 2,000 as well as 200. A certain amount of such systematic instruction is retained, and we hold that it answers a useful purpose. But the broad basis of modern medical education is the careful training of the individual student at the bedside and in the laboratory.

"There are branches of study, like Greek or mathematics, which may be studied as well, granted a true teacher and the necessary books, in a small village as in a metropolis. But no excellence on the part of the teacher can atone to the student of medicine for the want of the extensive and varied experience with all forms of disease and injury only to be acquired in the hospitals and dispensaries of a great city. Nor is it without importance, for both the public and the profession, that side by side with this obvious evil of excessively numerous medical schools comes the inseparable but more insidious danger of pauperizing the community by a superabundance of free medical service. Each medical school inevitably desires the most liberal use of hospital and dispensary facilities as attractions to draw students, and as a basis for practical instruction; and when, as is so common among us, these schools are in excess of the needs of the community, or are in towns too small for the purpose, the eager desire for ample clinical material is gratified at the expense of the local profession, and of the self-respect of a considerable portion of the community."

MECHANICAL VIOLENCE IN THE TREATMENT OF DIPHTHERIA.

At this time of renewed and enthusiastic study as to the nature of the infection of diphtheria, when diagnosis is aided by cultures taken directly from the patient's throat, and when the treatment is so apt to be made too purely local, it is well to consider the effect of mechanical violence upon the throat.

Dr. J. R. Culkin,[1] of Rochester, calls attention to this subject in a recent article, in a spirit of fairness and common-sense. After speaking of the various types of the disease, and the course of systemic infection, he says:

"The majority of the profession believe that diphtheria is a germ disease, and that the Klebs-Löffler bacillus is probably the cause of it. The experiments carried on by various bacteriologists confirm this belief, but they are not as yet numerous enough to enable us to say that it is so beyond doubt.

"In considering the local effects of mechanical violence to the throat, we will do well to have in mind the following facts:

"(1) That we probably have in the throat pathogenic germs ready to invade every area laid bare of epithelium.

"(2) The poisonous ptomaines are more readily absorbed by a raw and bleeding surface than by one covered by epithelium.

"(3) That a portion of the involved tissue is already necrotic, another portion nearly so, and the area surrounding those portions is acutely inflamed.

"(4) That it is impossible to render by any means known to us a diphtheritic throat antiseptic.

"The numerous crannies and folds in the mucous membrane of a swollen and diseased throat defy the searching of a swab which, though saturated with antiseptic or caustic solution, soon becomes covered with mucus or bits of the necrotic membrane.

"The advantage gained in most cases is more than balanced by the fatigue to the child, the irritation and unavoidable mechanical violence to the throat which opens out a new bleeding point for fresh absorption of ptomaines, a new entrance of bacilli. The injuries resulting from compression of the tensely swollen glands about the jaw in severe cases, when the mouth is held forcibly open are not to be disregarded. Empty lymph channels absorb poison and convey it more rapidly than full ones — and vomiting makes empty channels.

"Important as are the cleansing and disinfecting of the throat, the rational side of the question is often overshadowed by the desire to destroy a bit of membrane and a few germs. It should be always remembered that the condition of the patient with diphtheria is one of acute septicæmia, in which the maintenance of strength, absolute quiet and nourishment is of prime importance. Our first object should be to save the child, not to kill the germs."

LONG SUSPENSION OF NORMAL RESPIRATION.

In the October number of the Virginia *Medical Monthly* Dr. R. K. Smith reports a most unusual case of prolonged artificial respiration.

The patient, a man of twenty-four, had been ill for three days with slight headache and febrile temperature. On the fourth day he complained of severe headache, and rapidly became unconscious, with loss of reflexes and slow stertorous respiration (five or eight times a minute). The respiration ceased one hour after the patient became unconscious. Artificial respiration was begun and stimulants given subcutaneously. The pulse (84) continued good, as did the capillary circulation, but there was no attempt at normal respiration.

The following day the patient was cold, the pulse very weak (76), the eyes sunken, with dilated pupils. The pulse gradually failed, but the artificial respiration was carried on till the heart ceased to beat, which was thirty-eight hours and a half after normal respiration ceased, during which time about 46,000 forced breathings were accomplished.

The autopsy showed a purulent lepto-meningitis, with effusion into the ventricles. "The special features of interest were the mild symptoms and noticeable absence of pain up to the time the patient became unconscious; the cessation of respiration while the cardiac functions remained comparatively unimpaired, and the length of time the heart continued to beat under artificial respiration. What started as a demonstration to a young medical student became an experiment and finally a duty."

Correspondence.

[From our Special Correspondent.]

PARIS LETTER.

PARIS, November 2, 1893.

MR. EDITOR: — *Vive la Russe!* Had I been born in St. Petersburg with many consonants to my name, I might now be an honorary member of any medical society in Paris; but as I was not given Gilbert's privilege of belonging to other nations, I can only send you an outsider's account of the present *entente cordiale,* as it affects the medical profession. Even science has felt the hot joy of affection the last two weeks. The medical press of Paris set on foot the banquet in honor of the five surgeons from the Russian squadron who were in Paris. But this was not enough; and the invitation was extended to all the Russian physicians and scientists of any standing in Paris. The banquet was given at the Grand Hotel, and over two hundred physicians were present. The hall was lavishly decorated; but everything paled before the glowing tributes of the after-dinner speakers. Professor Cornil presided, while round him were some of the best known medical men of Paris. The Minister of War furnished a band of music and toasts were drunk to everything Russia in the Russian manner. The greatest enthusiasm was reached when Dr. Botkin, a young Russian physician and ensign, rose at the close of the banquet to thank the guests for having applauded his father's name, and in a voice trembling with emotion said, "I drink to the health of France — to the glad union of two sister nations — a union which [illegible] it would be annihilated with the same ease with which I break this fragile crystal glass." Suiting his action to his word, he called forth such emotion from all present that he was lifted from his chair and carried about the room on the shoulders of his friends.

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[1] New York Medical Record, October 14th.

Dr. Aristoff of the Russian squadron being present at a meeting of the Anthropological Society, the members rose in a body and made him a member by acclamation! And so it goes.

The Paris Surgical Society celebrated its fiftieth anniversary on October 25. M. D. Mayolin, one of the founders of the Society and its oldest member was the recipient of the medal struck for the occasion. Among the invited guests present were Spencer Wells, Thiriar, Boeckel and Reverdin. Telegrams and letters of congratulation were received from Billroth, Albert, and various medical societies of Europe. An excellent address upon the history of the Society was given by the Secretary, Dr. Charles Monod, in the large ampitheatre of the Medical Faculty. In the evening a very pleasant banquet closed the ceremonies.

Naturally much interest has been felt in the appointment of successors to Charcot in the various chairs he held. M. Brissaud has been delegated to take charge of the service at the Salpêtrière for a year until a permanent successor is appointed to the chair of diseases of the nervous system. At the Academy, M. Potain has already been appointed to the vacancy.

One of the recent meetings of the Academy was devoted to an interesting discussion of the regulation requiring notice of all cases of contagious disease be sent to the official boards. Each disease was voted upon separately and the list finally approved as filling all the requirements is as follows: Cholera and choleraic diarrhœa, yellow fever, plague, variola, varioloid scarlatina, miliary fever, diphtheria including croup and membranous angina, typhoid fever, typhus, dysentery, puerperal infection, ophthalmia neonatorum. Measles was rejected from the list by a vote which lacked but three of being unanimous against considering it sufficiently contagious to be admitted.

The death of Professor Leon Le Fort is another loss to the medical profession of Paris. He is the tenth member of the Academy to die this year. He died suddenly and quite unexpectedly the day after presiding as Vice-President at the Academy. His career though short had been brilliant. Interne in the Hospital at the age of twenty-four, he had risen rapidly and soon became full professor. Had he lived he would have been President of the Academy the coming year. He served with credit in the Italian campaign and always retained an interest in military surgery and was commissioned by the Government to study the military hospital system of Germany, Austria and England for the benefit of the French army. His work as prosector in the medical school was unusually brilliant. He was personally a man of attractive cordial manner, of a quiet but determined character.

Bicyling is now all the fashion; and the roads in the Bois are lined by cyclists in all the varied costumes which Parisian taste can suggest. Silk tights with short flounces about the hips are favorite and attractive costumes among the women who very sensibly discard long skirts for riding.

The health of Paris remains very good. A small outbreak of choleraic disease in the north of the city has been found due to wells contaminated by sewage. S. E.

METEOROLOGICAL RECORD.

For the week ending N[illegible] 4, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps.

Date.	Barometer	Thermometer			Relative humidity			Direction of wind		Velocity of wind		Weather		Rainfall
	Daily mean.	Daily mean.	Maximum.	Minimum.	[illegible]	[illegible]	Daily mean.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
S. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62	49	[illegible]	[illegible]	W.	[illegible]	[illegible]	[illegible]	[illegible]	
M. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.				[illegible]	
T. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53	N.W.	N.W.	[illegible]		C.		
W. 1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	S.W.	[illegible]	15	[illegible]	[illegible]	
T. 2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	S.W.	[illegible]	[illegible]	[illegible]	[illegible]	
F. 3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W.	W.	[illegible]	[illegible]	F.	[illegible]	
S. 4	30.12	[illegible]	[illegible]	[illegible]	78	96	[illegible]	W.	N.	[illegible]	[illegible]	O.	[illegible]	[illegible]
[illegible]	30.52	[illegible]					[illegible]							[illegible]

* O., [illegible] C., [illegible] ening; N., snow. † In[illegible] ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 4, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	675	[illegible]	19.50	12.15	4.95	[illegible]	[illegible]
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	—	—	—	—	—	—	—
Brooklyn	[illegible]	[illegible]	[illegible]	15.50	13.33	[illegible]	1.55	8.06
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	487,397	[illegible]	[illegible]	15.90	20.14	3.71	2.12	7.95
Baltimore	[illegible]	—	—	—	—	—	—	—
Washington	308,431	91	24	[illegible]	[illegible]	[illegible]	9.81	[illegible]
Cincinnati	305,000	[illegible]	32	16.49	17.46	[illegible]	[illegible]	[illegible]
Cleveland	[illegible]	[illegible]	[illegible]	22.20	4.44	[illegible]	[illegible]	[illegible]
Pittsburg	[illegible]	81	[illegible]	14.76	12.30	[illegible]	[illegible]	[illegible]
Milwaukee	[illegible]	[illegible]	[illegible]	22.61	17.85	9.52	3.51	9.52
Nashville	87,754	25	—	[illegible]	[illegible]	[illegible]	—	—
Charleston	65,165	[illegible]	14	13.33	2.22	[illegible]	2.22	—
Portland	40,000	[illegible]	1	21.42	7.14	—	14.28	—
Worcester	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	5.72	11.44
Fall River	87,411	[illegible]	14	23.52	20.58	[illegible]	—	2.94
Lowell	87,191	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]
Cambridge	77,100	23	10	21.75	4.35	13.05	[illegible]	—
Lynn	[illegible]	[illegible]	[illegible]	7.40	3.70	—	—	[illegible]
Springfield	48,684	[illegible]	[illegible]	[illegible]	—	—	—	—
Lawrence	[illegible]	—	—	—	—	—	—	—
New Bedford	[illegible]	15	6	[illegible]	[illegible]	—	[illegible]	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	[illegible]	[illegible]	—	—	—	—	—
Brockton	32,140	[illegible]	—	—	—	—	—	—
Haverhill	31,396	9	—	—	—	11.11	11.11	—
Chelsea	30,264	[illegible]	1	—	—	—	—	—
Malden	29,394	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—
Newton	[illegible]	6	1	—	[illegible]	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	8	4	12.50	12.50	[illegible]	—	—
Gloucester	[illegible]	[illegible]	—	—	—	—	—	—
Waltham	[illegible]	[illegible]	2	—	—	—	—	—
Quincy	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Pittsfield	18,802	5	[illegible]	[illegible]	—	—	[illegible]	—
Everett	[illegible]	[illegible]	—	—	—	—	—	—
Northampton	16,331	2	0	—	—	—	—	—
Newburyport	[illegible]	[illegible]	—	75.00	—	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 1,992: under five years of age 704; principal [illegible] 148, diarrhœal diseases 87, typhoid fever 47, scarlet fever 21, cerebro-spinal meningitis 20, measles 10, whooping-cough 7, malarial fever 4, erysipelas 3, small-pox 3.

From scarlet fever Pittsburg 8, Brooklyn 4, New York and [illegible] 1 each. From measles New York 8, Cleveland and Pittsburg 1 each. From whooping-cough New York 3, Brooklyn 2, Boston and Pittsburg 1 each. From malarial fever Charleston 2, New York and Cleveland 1 each. From small-pox Brooklyn 2, New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending October 28th, the death-rate was 18.3. Deaths reported 3,622: acute diseases of the respiratory organs (London) 271, diphtheria 110, diarrhœa 94, fever 71, whooping-cough 64, scarlet fever 58, measles 35, small-pox (Bradford 10, London and Birmingham 2 each, Bristol 1) 15.

The death-rates ranged from 10.5 in Croydon to 27.9 in Liverpool; Birmingham 21.2, Bolton 19.1, Bristol 15.5, Derby 14.5, Hull 15.5, Leeds 19.4, Leicester 16.4, London 18.0, Manchester 17.7, Newcastle-on-Tyne 25.1, Nottingham 13.9, Oldham 19.1, Portsmouth 14.3, Sheffield 19.4, West Ham 16.5, Wolverhampton 22.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM NOVEMBER 4, 1893, TO NOVEMBER 10, 1893.

By direction of the Secretary of War, leave of absence for four months is granted **CAPTAIN WILLIAM STEPHENSON**, assistant surgeon, U. S. A.

The station of **MAJOR BLAIR D. TAYLOR**, surgeon, is changed from the old post of Fort Bliss, Texas, to the new post of that name and he will report in person to the commanding officer of the latter named post for duty.

CAPTAIN FRANCIS J. IVES, assistant surgeon, is relieved from temporary duty with the Medical Section of the War Department Exhibit, World's Columbian Exposition, Chicago, Ill., and will return to his proper station, Fort Sheridan, Illinois.

FIRST-LIEUT. JOHN S. KULP, assistant surgeon, now on duty at Columbus Barracks, Ohio, will proceed to Jackson Park, Chicago, Ill., and report in person to the commanding officer, Camp Lamont, for temporary duty with the battalion of troops stationed there.

PROMOTIONS.

CAPTAIN EDWARD T. COMEGYS, assistant surgeon, to be surgeon, with the rank of Major, October 26, 1893.

FIRST-LIEUT. JAMES D. GLENNAN, assistant surgeon, to be assistant surgeon, with the rank of Captain, October 29, 1893.

FIRST-LIEUT. ALFRED E. BRADLEY, assistant surgeon, to be assistant surgeon, with the rank of Captain, October 29, 1893.

APPOINTMENTS.

By direction of the Secretary of War the appointments of **WILLIAM W. QUINTON**, **THOMAS S. BRATTON**, **DEANE C. HOWARD**, **ALEXANDER S. PORTER** and **WILLIAM H. WILSON**, to be assistant surgeons, with the rank of First-Lieutenants, to rank from October 26, 1893, are announced. They will report in person without delay, to the president of the Army Medical School in this city, for the course of instruction prescribed in General Orders No. 78, A. G. O. September 28, 1893.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 11, 1893.

WM. MARTIN, surgeon, ordered before Retiring Board.

N. J. BLACKBURN, passed assistant surgeon, from Navy Yard, New York, and to Norfolk Hospital.

T. C. CRAIG, passed assistant surgeon, ordered to Navy Yard, New York.

E. P. STONE, passed assistant surgeon, from Naval Hospital, Chelsea, and to Marine Rendezvous, Boston, Mass.

G. B. WILSON, passed assistant surgeon, from Marine Rendezvous, Boston, and to Naval Hospital, Chelsea, Mass.

B. H. KIDDER, medical inspector, promoted to grade of medical director.

JAMES E. GARDNER, passed assistant surgeon, promoted to grade of surgeon.

MILLARD H. CRANFORD, passed assistant surgeon, promoted to grade of surgeon.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday, November 22d, at 8 o'clock, P. M., by Dr. M. H. Richardson. Subject, "The Anatomy and Surgery of the Gall-Bladder." Physicians are cordially invited.

APPOINTMENTS.

DR. THOS. H. MCCARTHY has been appointed Pension Examining Surgeon for the Brockton, Mass., District.

WILLIAM L. RICHARDSON, M.D., has been appointed Dean of the Harvard Medical School, *vice* H. P. Bowditch, M.D., resigned.

W. TOWNSEND PORTER, M.D., of St. Louis, has been appointed Assistant Professor of Physiology in the Harvard Medical School.

F. A. DAVIS, M.D., has been appointed Instructor in Physiology.

RECENT DEATHS.

HENRY COLMAN, M.D., M.M.S.S., died at Lynn, November 12th, aged fifty-three years. During the war he served in the engineering corps of the Department of the Gulf, but afterwards completed his medical education and received his degree of M.D. from Yale. He was a member of the American Association for the Advancement of Science and a visiting surgeon to the Lynn Hospital.

HERMANN AUGUST HAGEN, M.D., Professor of Entomology at Harvard College, died in Cambridge, November 10th, aged seventy-six years. He was born in Konigsberg, Prussia, and received his degree of M.D. from the University of Konigsberg, in 1840. He devoted much time to the study of entomology, but began the practice of medicine and was for three years first assistant at the surgical hospital of his native town. In 1867 he was invited by Prof. Louis Agassiz to become his assistant in entomology at the Museum of Comparative Anatomy in Cambridge and in 1870 he was made professor of entomology in Harvard University.

CHARLES FREDERICK CREHORE, M.D., M.M.S.S., died at Newton Lower Falls, November 8th, aged sixty-five years. He graduated from the Troy Polytechnique School and received his degree of M.D. from the Harvard Medical School in 1854. In August, 1862, he entered the army in the rank of surgeon and was assigned to the Twentieth Massachusetts Regiment. For a time he was assigned to the ship *Cambridge*. The next year he was promoted to the rank of surgeon, and was attached to the Thirty-seventh Massachusetts Regiment, operating with the Sixth Army Corps in the Army of the Potomac. After the close of the war Dr. Crehore resumed his medical practice in Newton Upper Falls for a short time, but soon gave up practice to attend to the large business interests left him by his father. He was a member of the Newton Water Board from 1880 to 1888.

BOOKS AND PAMPHLETS RECEIVED.

The "Perfected" Urethroscope. By William K. Otis, M.D. Reprint. 1892.

Tenth Annual Report of the Superintendent of Health of the City of Providence for the year ending December 31, 1892.

Thirty-eighth Annual Report upon the Births, Marriages and Deaths in the City of Providence for the year 1892. By Charles V. Chapin, M.D., City Registrar. 1893.

Transactions of the Fourth Annual Meeting of the Medical Society of the State of Washington, held at Tacoma, May 3, 4, 5, 1893. Spokane: Willcox Printing Co. 1893.

Polio-Myelitis. A Clinical Lecture on (1) Case of Polio-Myelitis; (2) Case of Chorea; (3) Case of Sacro-iliac Arthritis, etc. (probably rheumatic). By J. T. Eskridge, M.D., Denver, Col. Reprint. 1893.

A Practical Treatise on Materia Medica and Therapeutics. By Roberts Bartholow, M.A., M.D., LL.D., Professor of Materia Medica, General Therapeutics and Hygiene in the Jefferson Medical College of Philadelphia, etc. Eighth edition, revised and enlarged. New York: D. Appleton & Co. 1893.

The Principles and Practice of Surgery. By John Ashhurst, Jr., M.D., Barton Professor of Surgery and Clinical Surgery in the University of Pennsylvania; Surgeon to the Pennsylvania Hospital, Philadelphia. New sixth edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co. 1893.

The Cholera Epidemic of 1892 in the Russian Empire, with notes upon Treatment and Methods of Disinfection in Cholera, and a short account of the Conference on Cholera held in St. Petersburg in December, 1892. By Frank Clemon, M.D., Edin., Member of the Epidemiological Society of London. London: Longmans, Green & Co. 1893.

An Elementary Text-Book of Biology, Comprising Vegetable and Animal Morphology and Physiology. By J. R. Ainsworth Davis, B A., Trinity College, Cambridge; Professor of Biology and Geology in the University College of Wales, Aberystwyth. With numerous illustrations and glossary. Second edition, revised and enlarged. Two parts. London: Charles Griffin & Co. Limited. 1893.

A Text-Book of Physiological Chemistry. By Olaf Hammarsten, Professor of Medical and Physiological Chemistry in the University of Upsala. Authorized translation from the second Swedish edition and from the author's enlarged and revised German edition. By John A. Mandel, Assistant to the Chair of Chemistry, etc., in the Bellevue Hospital Medical College and in the College of the City of New York. First edition. New York: John Wiley & Sons. 1893.

Address.

THE GENERAL PRINCIPLES UNDERLYING ALL GOOD METHODS OF INFANT FEEDING.[1]

BY T. M. ROTCH, M.D.,
Professor of Diseases of Children, Harvard University.

Just as the highest aim of the medical art should be directed to the province of preventive medicine, so the highest and most noble branch of preventive medicine should consist in the study of the best means and the most practical methods for starting young human beings on their life race; for preserving them from the perils which surround the early hours of existence; for giving them strength and vigor to resist the attacks which, greater and more dangerous in inverse proportion to their age, must inevitably be made on their vitality. The preventive medicine of early life is pre-eminently the intelligent management of the nutriment which enables young human beings to breathe and grow and live. In fact, it is a proper or an improper nutriment which makes or mars the perfection of the coming race.

Infant feeding, then, is the subject of all others which should interest and incite to research all who are working in the preventive medicine of early life.

The subject is a great one, and is worthy of the attention of the greatest minds of the age, worthy of the discussion of the leaders in medical thought of our Western Continent.

The responsibility of introducing such a serious question before such an assemblage of advanced medical thought is a grave one. It should be taken up carefully; it must be dealt with broadly.

We must acknowledge for the present, and in fact it is true, that in the status of infant feeding as it has existed up to the last few years, the average human breast-fed infant is more likely to live, the other factors of the life problem being equal, than the infant which is fed by any other method. But we must remember that the latest scientific work on this subject shows very clearly that it is not breast-milk, as a whole, which is pre-eminently good, but that there are definite known reasons inherent in the different elements of the breast-milk which make it the best known food. It is our province as scientific workers in this most important branch of practical medicine, to year by year elucidate and make use of these elements, once covered by a somewhat mysterious veil, but now rapidly becoming laid bare by the search-light of patient and laborious investigation. A great advance has been made in our knowledge as to what we are to copy from human breast-milk and what we must acheive in preparing a substitute.

The very essence of this practical information which we have gradually acquired, lies in the discovery that there is no one perfect nutriment for young human beings as a whole, but that it is the changes in the various elements of the breast-milk which satisfy the demands of the individual, and thus in time suits the many to such a degree that this protean food has erroneously come to be looked upon as one especial unchanging nutriment.

To thoroughly understand and successfully solve the feeding problem of the early months of life, a knowledge of the changes which take place in the mammary gland from many causes must be clearly kept in view. Again, the methods of modifying the milk in the human mammary gland, however limited in their scope they may be, should be practically investigated and carefully adapted to the individual, according to its age and size and general physical condition. The mammary gland in its perfected state, uninfluenced by disease or nervous disturbance or by the improper living of its owner, is a beautifully adapted piece of mechanism constructed for the elaboration and secretion of an animal food. When in equilibrium it represents the highest type of a living machine adapted for a special purpose, both mechanically, chemically, physiologically and economically. When from any cause this sensitive machinery is thrown out of equilibrium its product is at once changed, sometimes but slightly, but again to such an extent that the most disastrous consequences may follow when it is imbibed by the consumer.

To state, then, concisely what I have already referred to, we should, in studying the form of nutriment which shall be suitable for the early months of life, manifestly be guided by what nature has taught us throughout many ages. The researches of science are indeed, especially in the subject of infant feeding, wisely directed to learning to read the truths which nature presents to us. Great progress has been made in reading these truths. What we are at present endeavoring to do is to copy them.

The constituents of the nutriment which nature has provided for the offspring of all mammals are essentially animal and never vegetable. Human beings, in the first twelve months of life, are carnivora. It is, therefore, evident that an animal food entirely and always free from any vegetable constituents has been proved to be the nutriment on which the greatest number of human beings live and the least number die.

Where good breast-milk, or rather, one that is fairly adapted to the individual infant, cannot be obtained, or, if obtained, cannot be regulated by modification, it is desirable to combine the elements which good breast-milks represent. For perfecting this (which may best be called substitute feeding), we must have a material which, while as closely as possible approaching the analysis of good breast-milks, is also easily accessible. There is no mammal whose milk-production corresponds sufficiently to human milk to render a direct substitution safe or wise.

If, therefore, milk is used, the problem demands for its solution a modified milk. The mammal whose product, representing a carniverous food, has been proved from the earliest ages to best satisfy this demand is the cow. Certain breeds of cows are better adapted than others to produce milks which can be used for copying human milks.

For the use of this continent, these breeds are the Durham, Ayrshire, Holstein-Friesien, American grades and common natives.

The infant at the breast receives for its nutriment a fluid which is fresh, sterile, neutral or faintly alkaline, has a temperature of 98° to 100° F., and is furnished in an amount proportionate to its age and size. It is this fluid which we should copy in every possible detail when we undertake to prepare a substitute food. We should also consider as foreign matter, to be rigidly avoided, any element which we know is not to be found in the fluid which we are copying. Thus, and thus only, can we finally arrive at the proper solution of this intricate feeding problem.

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[1] [illegible] Medical [illegible]

It would seem hardly necessary to suggest that the proper authority for establishing rules for substitute feeding should emanate from the medical profession, and not from non-medical capitalists. Yet when we study the history of substitute feeding as it is represented all over the world, the part which the family physician plays, in comparison with the numberless patent and proprietary foods administered by the nurses, is a humiliating one, and one which should no longer be tolerated.

I would plead in the name of common humanity, as well as in that of the intelligence and scientific reputation of our profession, that this representative body of American physicians should, in its endeavor to advance the general subject of infant feeding, record itself as opposed to the use of patent or proprietary food of every description. If we are abreast of the times, and if we will but recognize and do justice to the work which has lately emanated from our own profession, we surely will not hesitate to boldly relegate to oblivion the statements of the food proprietors which on box and can, on bottle and on printed circular, attempt to stem the slow but inevitably progressing wave of scientific investigation.

It may be well to bear in mind that the attempts which in the past have been made to manufacture cheap foods have been markedly failures. We must first, regardless of expense, learn to produce by modification a perfected substitute food before we should endanger the success of our undertaking by allowing the mercantile side of the question to cripple us in the use of costly methods, which, however, we know to be the best. We should, in fact, remember that the nutriment which we are endeavoring to copy, far from being a cheap product, is, on the contrary, a very expensive one.

It is the knowledge of how to determine the best combinations of certain elements and the best methods of accomplishing these combinations which has in the last year or two especially claimed our attention, and in which we have met with signal success.

There is no doubt but that one of the most important questions connected with the preparation of a substitute food is the proper control of the primal milk-supply. What that control shall be, and how it shall absolutely be kept in the hands of those who by education and unselfish interest are most fitted to use their power wisely, is a matter worthy of your deepest thought. The State control, as represented in Denmark, is indeed a brilliant example of what can be accomplished in this direction. Whether a similar method would prove to be the best for us to adopt has not as yet by any means been proven. The political clouds which continually obscure the highest scientific aspirations on this continent make it probable that for the present, at least, the primal milk-supply can best be perfected by individual enterprise and enthusiasm.

Finally, I would call your attention and consideration to the great capacity of different infantile digestions for assimilating a variety of proportions of the same nutritive elements, and hence, when introducing new methods for preparing a substitute food, the necessity for providing for many prescription possibilities.

The latest researches on human breast-milk show that the albumen of the milk is not merely an exudation from the lymph vessels supplying the mammary gland, but that it is actually modified in the breast. We thus see that the mammary gland, besides being an elaborator and a storehouse for infant nutriment, is also a modifier.

Following, therefore, nature again closely, we learn that the precise modification of an absolutely pure and fresh primal milk-supply is the vital principle which should at present underlie our efforts to perfect substitute feeding; and I trust that those who will to-day take part in the discussion of this very important subject will especially enlighten us on two matters of extreme interest:

(1) What is the best method of obtaining a stable and perfect primal milk-supply?

(2) When this supply is obtained, how shall it best be modified?

Original Articles.

APPENDICITIS.[1]

BY A. WORCESTER, A.M., M.D.

One of the great disappointments of this age is the failure of the medical profession to make practical use of the brilliant discoveries of the pathologists. In some directions the general practitioner is not in the least responsible for this failure. Thus, in the matter of tubercular diseases, we can only stand with the laity anxiously awaiting the discovery of some method of treatment that will not dash our high hopes. But in other directions the general practitioner is responsible for not giving to his patients the benefits that logically belong to the recent discoveries in the natural history of certain diseases.

Nowhere else is this fault of the profession more glaring than it is in the treatment of appendicitis. In this paper I purpose to expose this fault and to urge the adoption of treatment based upon facts and reason.

The appendix cæci vermiformis, as its name signifies, is a blind tag-end of the large intestine. So far as is known, it is as useless as the nipples on a male breast. Very probably its proneness to decay is due in part to its uselessness, in obedience to natural law; but this liability to decay is also largely due to its exposed situation as regards bacterial infection. The alimentary canal teems with potential germs of disease which, although geometrically inside, are yet in reality as outside the body as if held in the closed fist. Indeed, our health and even our life depends upon the integrity of the gut in preventing the admission into the body of these deadly bacteria.

There is, however, a still stronger reason for the frequent inflammations of the appendix to be found in the study of its anatomical structure, which like that of the tonsil is largely lymphatic and absorptive. Its poor mucous lining cannot even lubricate itself against the accumulation in its cavity of foul material. This fæcal matter becoming inspissated naturally causes irritation and ulceration. If sharp-angled seeds or other foreign bodies are also present, and if the opening of the appendix into the cæcum is blockaded with hard fæces, such conditions would, of course, favor the ulcerative destruction of the mucous membrane.

What form of inflammation follows will then depend upon the kind of disease germs thus admitted into the structure of the appendix. A frequent result is an absolute interference with the blood-supply of that portion of the organ beyond the original seat of inflammation. Whether this interference be mechanical, from pressure, or whether from closure of the vessels by septic thrombi, the result is equally disastrous. There is then no escape for the outer portion of the appendix. Gangrene and sloughing must ensue. Often, however, the inflammation of the walls of the appendix is not completely annular, but more strictly localized, in which case a perforating ulcer may result without complete gangrene of the distal portion of the organ.

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[1] Read by invitation before the Essex South District Medical Society, September 19, 1893.

There also occurs more or less frequently a catarrhal inflammation, as it is called, which does not necessarily involve the destruction of any portion of the appendix. It is this variety which so often recurs, and so often precedes the destructive attack. But even this mild form is not so harmless as many would have us believe, for it is apt to cause a neighboring adhesive peritonitis which renders the proper surgical treatment much more difficult when later that becomes imperative. It is also the probable cause of the various deformities of the appendix, which are considered by some to be responsible for the occasional attacks of pain. However that may be, at any rate it is certain that the normal appendix is perfectly flaccid and may comfortably lie in any bent and crooked position. Only when the walls are thickened and stiffened by previous inflammation can any bend of the organ obstruct its lumen and thus cause appendicular colic.

These different varieties or stages of appendicitis may be distinguished by the eye, aided perhaps by the microscope, but not by abdominal palpation nor even by the rectal touch.

Were the appendix within easier reach, its various inflammations could, of course, be more accurately tabulated. It might then, perhaps, be possible for two or more authorities to agree upon the number of distinct varieties; and there might then be some foundation for those who pretend even now to diagnosticate the "mild catarrhal" from the "possibly fulminant" variety. But on the other hand, were the useless little organ within easy reach, whenever inflamed it would probably be snipped off and sent to the nearest pathological laboratory for culture-test examination, whereby alone may be obtained a certain diagnosis as to the character of the inflammation. For there can no longer be any doubt that the different forms of purulent inflammation are due to the presence in affected tissues and in serous cavities of the different species of pyogenic micrococci. Thus if the inflammation be caused by the staphylococcus pyogenes albus, it may be expected to be of a mild character. And even if the inflammation involves the outer wall, thus allowing a migration of the micrococci into the peritoneal cavity, there may still be spontaneous recovery from the peritonitis. But if, on the other hand, it is the streptococcus pyogenes that has invaded the walls, then there is no escape from a gangrenous appendix, which unless immediately removed will surely cause a fatal peritonitis.

Again, although the local ulcer that causes the perforation may itself be due to a comparatively harmless micrococcus, the cæcum and the appendix may nevertheless contain the most virulent species, which after the perforation may thus freely enter the abdominal cavity.

It is, therefore, most unfortunate for those who believe in temporizing that even the normal appendix is not within the field of easy observation. Indeed, owing to its obscure position it has only lately received even obituary consideration. Moreover, after it is inflamed, owing to the speedy yet consequent inflammation of the neighboring peritoneal surfaces, the appendix becomes more and more removed from the examiner's hands. Thus the difficulties of diagnosis increase with the progress of the disease.

Fortunately, in the early stages of its inflammation, it is not very difficult to discover the simple fact that it is inflamed. But that is all.

The disease itself would be of comparatively little consequence were it not for its after-effects. Indeed, it is usually recognized only by its frightful sequelæ, which nowadays with disgraceful inaccuracy are generally described as varieties of appendicitis.

The principal harm resulting from the disease is due to the perforation of the organ and the consequent passageway for the contents of the bowel into the abdominal cavity. This condition would invariably be followed by septic peritonitis, were it not for the facility with which the peritoneum, by adhesive inflammation previous to the perforation, blockades the threatened pathway. The possibility of this blockade depends largely upon the varying anatomical situation of the appendix as regards the walls of the abdomen and the neighboring coils of intestines. Sometimes quite a defence can be thus extemporized and there then results, instead of a general peritonitis, a perityphlitic abscess.

Either result admits of ready diagnosis.

There is no need of pursuing the subject of general septic peritonitis. Its terrors are only too well known. The only rational treatment is its prevention. That failing, the source of infection having been removed, the abdominal cavity must be given the freest possible drainage.

A perityphlitic, or, better named, a periappendicular abscess, is a somewhat less frightful result of a perforated appendix. A fatal issue is not so probable, and at any rate, is not so immediate. The medical attendant has more time to collect his wits and to arrange for the proper treatment, which is, of course, surgical, as it is in every other kind of abscess. There is never any justification for delay in evacuating foul pus. And the audacity of physicians who make a specialty of not using the knife in medically treating such cases, where the stench of the pus if evacuated renders the patient's house almost uninhabitable, is equalled only by that of the mind-cure practitioners who are said to continue giving "absent treatment" to their patients, if not informed of their death.

It is not, however, my present purpose to discuss at any length the treatment of the sequelæ of appendicitis. I mention the sad subject only to emphasize the importance of preventing disasters, which are liable to follow any attack. Such prevention is entirely feasible. It depends upon cutting short the appendicitis. And this can easily be done by cutting off the appendix.

Before considering the question of the treatment, it is proper first to consider the diagnosis of the disease. This necessitates the closest clinical study.

Appendicitis is by no means an insidious disease. To begin with, there is generally the help of a history of previous similar, but milder attacks. The disease always causes pain. At first, this pain is only a general belly-ache, but more severe than, for instance, the pain caused by sharp cathartics. Nor is it apt to be so distinctly wave-like in character as that caused by over-active peristalsis. It has from the first a most discouraging come-to-stay feeling. This early pain is relieved somewhat by general pressure over the whole abdomen, just as the pain caused by an ulcerated tooth is relieved by pressure over the whole cheek; but, as is also the case with the toothache, it is increased by strictly localized pressure. A further most important characteristic of the pain is that it is made worse by removal of the pressure. The pain is also increased by motions involving the right psoas muscle, and by bending the trunk to the left.

Later, in the progress of the disease, the pain is increased and more localized in the right abdomen. From the frequent proximity of the appendix to the ureter, the pain caused by its inflammation is apt to shoot upwards and backwards into the loin, and still more often downwards and forwards into the penis and right testicle, or into the right labium. This often causes intense desire and yet ineffectual attempts to empty the bladder. An attack of renal colic is thus simulated.

Even if a laxative has not been taken by the patient before sending for the doctor, there is generally the story of some strainings for bowel evacuation in the hope of thus relieving the pain. But so far as the diagnosis is concerned no attention whatever need be paid to the condition of the bowels. Patients usually give a history of previous costiveness, whatever the nature of their complaint.

The pain of appendicitis, besides causing more or less futile attempts to empty the bowel and the bladder, is almost sure to cause nausea and vomiting. A severe attack of acute indigestion is thus simulated, and patients generally ascribe their trouble to some imprudence in diet. Prudence is an uncommon virtue. Often the pain is ascribed to some muscular strain or abdominal bruise, which, except for the coincident or sequent pain, would have passed unnoticed.

Finally, the pain usually becomes intolerable, which accounts for the customary deadly administration of opiates. Were it not for this terrible morphine-masking of the disease, more cases would be treated by timely surgery, and fewer physicians would be thus lulled into the lethal stupidity of inaction.

So much for the history and subjective symptoms, which indeed, even if taken alone, would strongly suggest appendicitis. The positive diagnosis can be made only upon the additional evidence that may be gained by physical examination.

The rate of the pulse and the height of the temperature at any one time are of absolutely no consequence; the variation between successive observations is, however, of exceeding importance. In the early stages of the disease, the pulse quickens and the temperature rises as the inflammation advances. The increase may be very slight, but it serves to eliminate all non-inflammatory affections. It is, however, to be remembered that the pulse and temperature are of absolutely no value as evidence after peritonitis subvenes.

By far the most important help in making the diagnosis, comes from palpation of the organ itself. If in normal condition, even through the thinnest and most conveniently lax abdominal walls, it is doubtful if the appendix can be felt. But if it is inflamed, it is larger and more rigid; it generally contains concretions; it is then exquisitely tender to pressure, and, as has already been mentioned, it aches more during the removal than during the application of pressure; and under these conditions it can generally be located by careful palpation, and the fact of its inflammation thus established.

There is usually noticeable some slight dulness on percussion immediately over the point of greatest tenderness; but, on account of the inflated intestine often adjoining, the absence of this sign counts for nothing.

Were the appendix to be found always in the same position, its certain palpation would be far more possible, and McBurney's famous point would be more deserving of its fame. But only the base of the appendix, at its origin from the cæcum, has any approach to a fixed location, which, by the way, is considerably lower than McBurney's line; and as the appendix may be from one inch to five inches long, and may lie in any direction from its base, and further, as only its tip may be inflamed and tender, it follows that the distinguishing resistance and tenderness pathognomonic of the disease may be many inches removed from the McBurney point. As a matter of fact this not seldom happens. If the appendix lies alongside the ascending colon, its tender tip may be found near the gall-bladder. If, on the other hand, it points downwards, its point of greatest inflammation, and consequently of greatest tenderness, may be attached to the ovary or to the rectum.

The only value in the McBurney point is in the attention that has been given by those who sought for it to the importance of a particular localization of tenderness and of resistance to pressure.

If it be remembered in how many different positions the appendix may lie, and that the point of tenderness may be in any part of its variable length, then it will be seen that thorough palpation of the whole right abdomen is necessary in order to exclude the presence of an inflamed appendix. Indeed, in one case which I saw in consultation this point of especial tenderness was low down and to the left of the median line. On abdominal section, the tip of the appendix was found attached to the rectum and directly under the point of especial tenderness.

But happily the usual position of the appendix is in the right iliac fossa where palpation is easiest. The smooth hollow of the false pelvis gives an even counter-pressure to the examining fingers, which should be laid almost flat on the belly wall and slowly pressed down until the even resistance of the ilium can be felt. Then by very slow and steady motion the fossa is to be explored by carrying the abdominal wall along backwards and forwards with the examining fingers. If no particular resistance or tenderness is encountered, then, after gradual release of the pressure, the fingers may be changed to another place on the surface, and so on over the whole right abdomen. If by such an examination no point of especial tenderness and of resistance is discovered, then there is no appendicitis. The converse, however, is by no means true. For when a definite resistance and an especial tenderness is localized even in the right iliac fossa, several other conditions must be considered and eliminated before making that diagnosis. Impacted fæces, movable kidney, malignant tumors, and in females enlargements of the uterine appendages also, must thus be considered. The two first named conditions, of impacted fæces and of movable kidney, ought not to escape definite diagnosis;

but only by abdominal section can a positive differential diagnosis be made as regards malignant tumors or enlargements of the uterine appendages. And, in fact, the combination of these last named diseases with appendicitis not seldom occurs.

Where there is good reason to suppose the existence of an inflamed appendix, and yet where, from unusual thickness or rigidity of the abdominal walls, its presence cannot be determined, some aid may be got from examining the belly under full anæsthesia. Still more help can be got by incising the muscular wall down to, but not through, the peritoneum. This procedure is commended to those who, not daring to open the abdominal cavity during the lifetime of their patients, retain for their own comfort the benefit of the doubt, instead of giving it, as they should do, to their patients.

In addition to these means of palpation we can employ the rectal touch, and in females the vaginal touch. Except in the rather rare instances where the appendix points directly downwards, little or no help is thus to be gained. In the diagnosis of perityphlitic abscess there is, of course, much more chance of gaining information by these routes. And indeed, after the abdominal walls are made rigid by a general peritonitis, that is often the only way of gaining information as to its cause. But let it be kept in mind that we are now considering the diagnosis of appendicitis, and not that of its sequelæ.

In order to emphasize the symptoms and signs by which this diagnosis can be made I offer the following summary.

Appendicitis begins with general pain in the abdomen, which afterwards becomes localized in the right side. This pain is constant; but is increased at times spontaneously, and always increased by palpation of the appendix and by motions of the body which disturb its relation with adjacent surfaces. It often shoots along the course of the ureter. It is generally intense. It is generally accompanied by tenesmus of the bladder and rectum and by nausea and vomiting.

There is always fever. This may be slight, but it steadily rises as the inflammation progresses until the complication of peritonitis subvenes. The inflamed appendix being larger and harder, and often full of concretions, at the beginning of the attack can be palpated. It is exquisitely tender to pressure. There is usually slight dulness on percussion directly over it.

Besides the diseases already mentioned, as simulated by appendicitis, in making the diagnosis there must also be excluded typhoid fever, perinephritic abscess, and all affections of the gall bladder and bile ducts.

It is within neither the scope of this paper nor the writer's power to set forth in full detail the processes of such eliminative diagnosis. But it cannot too forcibly be insisted that the diagnosis of appendicitis is not more difficult than that of any other local internal inflammation. This, indeed, would seem a superfluous assertion, while so many believe themselves able to diagnosticate even the particular varieties of the disease. Except by abdominal section there is no possible way of ascertaining the extent of the disease at any given time. Nor can the rate at which the inflammation travels ever be estimated with any sort of accuracy. Perforation may result in a few hours after the onset of the attack, or it may suddenly occur after many days of apparently mild inflammation. It is, therefore, puerile and ridiculous to lay down rules as to the proper day and hour for operating.

In perhaps half of the cases, perforation may not occur; but in half of these apparently recovered cases there will probably be a recurrence; and in half of these recurrences perforation is finally likely to happen. Of the cases where perforation does occur probably fifty per cent. die because of it. Such, however, would not be the sad fact if even then proper surgical treatment were generally employed.

The sum of it is that, under the present methods of treating appendicitis, in more than half of the cases consequent disasters are allowed to occur which are attended by a higher death-rate than that of pneumonia or even of diphtheria.

Were the appendix of any use, or were there danger in removing it at the very onset of its inflammation, there would be some excuse for this terrible mortality. Such, however, is not the case.

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IS ACUTE POLIOMYELITIS UNUSUALLY PREVALENT THIS SEASON?

BY JAMES [illegible]

AND [illegible]

It was conclusively shown by Dr. Wharton Sinkler of Philadelphia, as long ago as 1875,[1] that poliomyelitis ("atrophic spinal paralysis," "infantile paralysis,") is pre-eminently a disease of the summer months of the year; and the statistics of foreign observers have proved that similar conditions prevail abroad.

An analysis of the cases observed at the Massachusetts General Hospital confirms Dr. Sinkler's conclusion, with the exception that, so far as the small aggregate numbers prove anything, they show that among us there is a greater prevalence of the dreaded affection in September than in August. The figures for 1888 to 1893, inclusive, are as follows:[2]

[illegible]

January	[illegible]
February	[illegible]
March	[illegible]
April	[illegible]
May	[illegible]
June	[illegible]
July	[illegible]
August	[illegible]
September	11 [illegible]
October	[illegible]
November	[illegible]
December	[illegible]

It would not have seemed worth while to report these few observations had it not been that the number of cases observed at the Massachusetts General Hospital in September and October of this year is decidedly larger than usual, and that the experience of the physicians at the Children's Hospital, and the Boston Dispensary, and the consultation practice of one of the writers, furnishes additional evidence that the disease is more than commonly prevalent this autumn, in spite of the persistence of what from the ordinary point of view would be called remarkably fine weather. If we put together these four sets of cases, and compare this year with 1892, as regards the Children's Hospital and the Dispensary, and with an average of the previous five years[3] as regards the

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[illegible]

Massachusetts General Hospital, and add in three cases observed privately during October and November, 1893, we get the following figures:

August to November, inclusive, 1892 . . . . 0 cases
August to November, inclusive, 1893 . . . . . 26 cases*

* In addition to these out-patient cases at the Children's Hospital, there are three or more cases in the wards which we did not count.

Of these twenty-six cases, eight had their onset in August, eleven in September, six in October, and one in November. Even if we leave out the three private cases, and admit that 1882 was an "off year" for poliomyelitis, as seems to have been the case, still it can hardly be doubted that the influences are unusually favorable for the development of the disease this year.

In 1891, similar conditions, perhaps, prevailed, since between August and November seven cases presented themselves at the Massachusetts General Hospital, the same number as this year. In 1888 there were six cases; but in 1889 only three; and in 1892, as stated, none at all. The attendance at the department during this period has been steadily increasing.

It is foreign to the purpose of this paper to attempt an analysis of the subtle meteorological influences which make the summer and early autumn months relatively so dangerous. Our main object is to lead other physicians to contribute their experiences to reinforce or counterbalance ours. It may, however, be of interest to indicate the lines of research which the facts so far gathered have marked out.

To what is the unfavorable influence of the summer due? It may be an affair of weather, as such, though obviously heat, pure and simple, is not the important factor; or the weather may act as favoring some other influence, perhaps bacterial in character. The reasonableness of this latter view is now conceded by many good observers; but it is certain that its advocates are still far from having made good their claim.

In favor of the doctrine is the fact that the outbreaks of the disease occasionally occur in distinct epidemics.[4] These so-called epidemics, however, have always happened in late summer and early autumn, and perhaps represent only exaggerated examples of the regular annual increase. It is also noteworthy that in some of these epidemics atypical and relatively virulent cases have been unusually common. Again, the occasional occurrence of acute poliomyelitis in conjunction with acute polyneuritis,[5] which is probably always of toxic, and often of infectious origin, bears out this view.

A striking case of this sort was published by one of us some years ago.[6] The evidence of the neuritis was, to be sure, only clinical in character, but the symptoms left little doubt on that score. The postmortem examination of the patient, who died two months after being taken sick, showed the anterior gray matter to be threaded, on each side, throughout the length of the cord, with a line of inflammatory softening.

A patient, also an adult, whose case may be of similar character, is now at the Massachusetts General Hospital, under the care of Dr. F. C. Shattuck, who kindly gave one of the writers the opportunity of examining her. The atrophy affects all, or almost all, the forearm and hand muscles of both arms, but not the muscles of the legs. The onset was in August, and the symptoms seemed at first to point to a neuritis; but, later, the atrophy became so predominant, yet without being associated with any considerable nerve or muscle tenderness or impairment of cutaneous sensibility, that the diagnosis of poliomyelitis seemed probable. The case has not, however, been included in our summary.

One of the private cases above alluded to was also distinctly of neuro-myelitic character, and practically of the adult form, affecting, as it did, a young girl of twelve, who was living under the very best of hygienic conditions. This case is especially interesting from the fact that the onset was during the pleasant and cool weather of the current month.

Except for these two cases, and one case in a young child, where the initial pain was greater than usual, there has been nothing to mark the group of cases seen this year as belonging to any unusual type.

It is noteworthy, as against any strongly marked epidemic influence, that the patients did not come to any extent, from any one locality, but from different parts of the large area of the suburbs of Boston. The Charlestown and Chelsea district, however, furnished several cases. Very few of the patients came from Boston proper; and, as further evidence of the immunity of the city, it may be said that the records of the City Hospital yield but one case for this summer and autumn (onset in October), and none for last year.

In conclusion, the writers ask other physicians who have seen these interesting cases, or may see them in future, to send them brief records.

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ber at the Massachusetts General Hospital, and only one case at the Children's Hospital.

[4] Cordier: Lyon méd., 1888, xxvii, 1, 2.
Oxholm: Citation in Neurol. Centralblatt, 1890, xii.
Medin: Citation in Schmidt's Jahrbücher, 1891, No. 6.
[illegible]: Deut. med. Woch., [illegible], No. [illegible].
Sinkler: In Keating's Cyclopædia of the Diseases of Children, vol. iv, 6.
Marie: Mal. de la Moelle, [illegible].
Strümpell: Lehrbuch.
Pal: Die Multiple Neuritis.
Strümpell: Loc. cit.
Gowers: Diseases of the Nervous System, etc.

[6] Examination of the Spinal Cord in a Case of Poliomyelitis of the Adult, etc., by James J. Putnam, Journal of Nervous and Mental Diseases, January, 1883.

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Clinical Department.

A CASE OF ANGIOMA OF THE NASAL SEPTUM.[1]

BY FREDERIC C. COBB, M.D.,
Physician to Throat Department, Boston Dispensary; Assistant Physician Throat Department, Massachusetts General Hospital.

THE patient, Lizzie B., fifteen years of age, came to the Out-patient Throat Department of the Massachusetts General Hospital in October, 1892, complaining of obstruction of the right nostril and epistaxis from the same side. The duration of these symptoms was about six months. There had been no sneezing, and only occasionally a thick yellow discharge from that nostril. She was anæmic, always subject to headaches; and exhausted by the least exertion.

Her previous history, with the exception of an attack of scarlet fever, six years ago, was negative.

Examination of the anterior nares showed them to be normal on the left side. On the right side the nostril was wider, the turbinates slightly atrophic. Hanging from the septum by a thin pedicle inserted near the junction of the skin and mucous membrane above the end of the lower turbinated bone, was a small growth divided into two lobes by a constriction about its [illegible]. It was soft to the probe, moved backwards and forwards on inspiration and expiration but was [illegible] to [illegible]. At its lower portion were a few small, black blood clots. The posterior nares, pharynx and larynx were normal.

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[1] Read before the Laryngological Section of the Pan-American Medical Congress, September 6, 1893.

With the aid of Hooper's snare and écraseur, the growth was removed, with very slight hæmorrhage. The base was not cauterized. The patient was given an alkaline wash, and returned two or three times until the site of the pedicle was completely healed, which occurred in about ten days.

She was examined in August, 1893, and has had no recurrence. The growth was submitted to Dr. Whitney, the pathologist to the hospital and the following report was received from him: "Growth with large vascular sinuses, with more or less round cells about — cavernous angioma."

In looking over the literature of nasal angiomata, one is struck by the lack of pathological accuracy shown by the reporters of cases. If we inquire what is the structure of angioma, we find, according to Bosworth, that it is composed almost entirely of blood-vessels held together by a slight network of connective tissue. Sutton, Ziegler, Birch-Hirchfeld and other pathologists agree with this definition. Now, if the reported cases of angiomata be judged by their pathological examinations, we shall find, I think, that a pure angioma of the nose is very rare.

The importance of pathological accuracy will be evident when we remember that the prognosis may depend upon it. Sarcomata and epitheliomata may contain small portions of nearly pure angiomatous tissue; and if such portions alone are removed for examination, they may lead to very erroneous conclusions.

The cases reported are those of Verneuil,[2] Wagner,[3] Steinbrügge,[4] Seiler,[5] Richet,[6] Roe,[7] Jarvis,[8] Vanderpoel,[8] Burckhardt,[9] Nèlaton,[10] Huguier,[11] Panas,[12] Guyon,[13] Dumeuil,[14] Delavan,[15] Luc[16] and Bellows.[17]

There was no microscopical examination in seven cases, namely, those reported by Dumenil, Verneuil, Seiler, Panas, Guyon, Vanderpoel and Burckhardt. In five cases the growths contained mynomatous tissue, and are not, therefore, pure angiomata. Two of these cases are reported by Wagner, two by Luc, and one by Delavan. Three cases, those of Richet, Huguier, and one of Nèlaton's (reported by Boef), were probably fibromata rather than angiomata.

There remain only the cases of Richet (reported by Bazy), Roe, Jarvis, Bellows, Steinbrügge, and a second case reported by Nèlaton. The pathological descriptions of Richet's and Nèlaton's cases do not justify their classification as angiomata. Roe's case was undoubtedly a pure angioma, although it subsequently degenerated into an angio-sarcoma. No description of the growth removed by Jarvis is given, but only the diagnosis. The case reported by Bellows was clearly a pure angioma, and the pathological description is full and clear. Steinbrügge's case was as clearly an hypertrophy.

As a further proof of the rarity of this affection, I would say that, in an examination of 7,400 cases of nose and throat affections in the Massachusetts General Hospital records, I have found no other case.

With regard to symptoms, the only two of importance are hæmorrhage from, and occlusion of, one nostril. In all the cases reported, the most gentle examination with probe or finger caused extensive bleeding which was arrested with difficulty.

As regards prognosis, we must be cautious; since, although the danger of recurrence is not great, the tendency of such growths to malignant degeneration must be considered.

The diagnosis of pure angioma can only be made by careful microscopical examination but unusual hæmorrhage during palpation of any intra-nasal growth should lead one to suspect angioma.

In the treatment of these tumors we are met with less difficulty, since all recent authors seem to consider the snare, if slowly and carefully used, as the safest instrument. The length of time to be consumed in removal should depend upon the thickness of the pedicle. In Roe's case three hours were required for the bloodless removal of growth. Jarvis and Luc got no hæmorrhage with slow snaring, but considerable from more rapid use of the instrument. The former used his own snare and écraseur, the latter the galvano-cautery loop. In my own case I attribute the lack of hæmorrhage to the thinness of the pedicle.

Medical Progress.

RECENT PROGRESS IN OTOLOGY.

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The most striking advances in otology during the past year have been in the direction of aural surgery, and have been of two classes: those having for their purpose the radical treatment of suppurative disease of the middle ear and its complications and consequences, and those seeking to find a means for the better and more immediately satisfactory relief from impairment of hearing, annoying subjective noises, and so-called auditory vertigo.

The first class of cases, and the means to be employed for their treatment, appeal especially to the interest of the larger number of practitioners, because they include a surgical necessity which may at any time, under unfavorable conditions, become a surgical emergency, and because, in a large proportion of cases of long-continued suppurative inflammation of the middle ear, the ordinary treatment by means of syringing, dry cleansing and the application of astringents and antiseptic powders is inadequate to relief. Gradually the advance has been made from the treatment above mentioned to the use of intra-tympanic syringes and insufflators, to the use of curettes in the middle ear in a limited fashion, to the removal of the ossicles themselves when carious, and to the more thorough removal of carious portions of the tympanic walls, and

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finally to the resort to the still more radical operation of reflecting the auricle forward and by chiselling away the posterior superior portion of the bony canal gaining access to the tympanic attic and the antrum.

This operation, first proposed at the Berlin Congress in 1890, by Stacke, and bearing his name, is both historically and clinically reviewed by Weismann[1] in a recently-published thesis. Following Toynbee the first carefully considered clinical report of suppuration of the attic of the tympanum, as it is now called, was published in the recent report of two cases by J. Orne Green,[2] who was followed by other observers. Bezold, in his paper on the treatment of cases of this class by means of boracic acid powder insufflation,[3] enumerates the three categories which most resist treatment as, (1) suppuration of the tympanum with osseous necrosis; (2) suppuration of the tympanum accompanying pulmonary phthisis, and (3) suppuration of the upper portion (the attic) of the tympanum. For the latter he recommends frequent lavage by means of the intra-tympanic canula or syringe, the only procedure commonly in use until Schwarze and Kessel defined the indications for, and described the method of removing the malleus and incus when themselves carious or when they obstructed drainage from the attic in cases of suppuration in that portion of the tympanum or impeded access to its diseased walls. The operation of Stacke consists in reflection of the auricle forward to such an extent as to permit access to the superior posterior portion of the osseous canal, this being removed by chiselling and the diseased cavity of the attic and antrum cleared and curetted, during which process the stapes is protected by an S-shaped hook introduced into the cavity from the front; a quadrangular flap is then formed, the soft tissues of canal tamponed into the opening made, and the auricle replaced.

Weismann offers the following conclusions to his thesis:

That suppurations of the attic are especially worthy of consideration (1) because of their insidious progress, (2) because of the important organs in their neighborhood, (3) because of the difficulty of reaching their point of origin; which reasons explain not only their gravity but their obstinacy.

The double advantage of the operation of Stacke is that it affords means of reaching the suppuration of the attic, and at the same time affords an opportunity of determining the existence of any disease of the antrum; in other words, it may be regarded both as an exploratory and curative operation.

Panse,[4] in reviewing the same subject, reports 57 cases of Stacke's operation, which he has modified in a measure by not withdrawing the membraneous portion of the external auditory canal, but, by carrying it forward, and by limiting the outer incision to the superior and posterior post-auricular region instead of carrying it further forward; the objection to these two procedures being, according to Panse, on the one hand liability to a necrosis of the outer limit of the osseous canal, and, on the other, a necrosis of the musculus attollens auriculæ. Of the 57 operations reported by Panse, cholesteatomatous masses were found in 13, and caries in 26; 34 of the cases were healed; four died; eight cases were not cured, and of these one underwent secondary operation, and one other was discharged with facial paralysis.

MacCuen Smith[5] reports 154 cases of middle-ear operations, chiefly of removal of the membrana tympani and ossicles. Of these operations 69 were in cases of non-suppurative disease of the middle ear, and were undertaken on account of marked impairment of hearing, distressing tinnitus, or vertigo. The results in these cases, as well as in those of suppurative disease, for relief of continued discharge, are stated to be excellent, although but six cases are reported in full.

Burnett,[6] who has previously reported cases of removal of the membrana tympani, malleus and incus in cases of non-suppurative disease of the middle ear, recently gives his results of operative interference in cases of auditory vertigo. "Tympanic vertigo," says the writer, "due to lesions of the middle ear, is a frequent occurrence. It is often not recognized, especially by the general practitioner, as aural vertigo. It is not unusual for tympanic vertigo to be attributed to intestinal disturbance, or to 'neurasthenia' instead of to an aural lesion. True tympanic vertigo, due to a lesion in the middle ear, chiefly from chronic catarrh of the tympanic cavity, is paroxysmal in character, and attended with tinnitus and deafness in the affected ear. It is caused by the inward pressure exerted in the labyrinthine fluid by the retracted and anchylosed ossicles. The foot-plate is thus unduly pressed into the oval window, and there held by the force made, paroxysmally, and for a longer or shorter period."

The author's theory that morbid pressure by means of the impacted stapes upon the fluid in the labyrinth is a local cause of vertiginous symptoms, was tested in an operation upon a case of chronic catarrh of the middle ear, with constant tinnitus and frequently recurring attacks of severe vertigo which had been superadded to deafness in the left ear within the previous two years. The malleus was found to be adherent to the promontory, and both this bone and the membrana tympani were removed in order to liberate the impacted stapes, with favorable results. The success of this and four subsequent operations of a like character, led Burnett to conclude that removal of the incus alone, or of the incus and stapes, the membrana tympani and malleus remaining in position, would liberate the stapes and the compressed labyrinthine fluid, as well as, or perhaps better than, total excision of the membrana and malleus, with less liability to inflammatory action.

As the result of ten operations, including among them resection of the long process of the incus, the following conclusions are drawn:

(1) That removal of the retractive force of the sound conductors upon the stapes is the efficient means of relieving the tinnitus, deafness and vertigo due to the lesions of chronic catarrh of the middle ear.

(2) That the removal of the retractive force upon the stapes can be accomplished efficiently and simply by removal of the incus alone, and even by resection of its long process.

(3) That the improvement in these cases is due to

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[1] Eugene Weismann, Traitment des Suppurations de L'Attique, Paris, 1893.

[2] J. Orne Green, Perforation of the Membrane of Shrapnell, Boston Medical and Surgical Journal, March 26, 1871.

[3] F. Bezold, Zur Antiseptischen Behandlung der Mittelohreiterungen, Archiv f. Ohrenheilkunde, Bd. 1, May, 1893.

[4] R. Panse, Stacke's Operationsmethode zur Freilegung der Mittelohrräume, Archiv f. Ohrenheilkunde, May, 1893.

[5] The Class of Cases in which we may expect Good Results from Excision of the Membrana Tympani and Ossicles, Therapeutic Gazette, July 15, 1893.

[6] The Surgical Treatment of Chronic Tympanic Vertigo often miscalled Meniere's Disease, Medical News, September 30, 1893.

the liberation of the stapes from the retractive power of the tensor tympani muscle and the consequent unimpeded action of the stapedius muscle, which, relieved from the antagonism of the tensor tympani, tends all the more to draw the stapes from the oval window, thus aiding in its isolation and improved mobility as well as removing the undue pressure inward upon the labyrinthine fluid.

(4) It would seem wiser, therefore, in most cases of chronic catarrhal deafness, tinnitus and vertigo, not to sever the stapedius tendon and remove the stapes, but to be content with the removal of the incus only.

(5) The progressive improvement in hearing noted in many instances must be due to the passive motion exerted upon the anchylosed stapes by sound waves, which are enabled to reach this bone more freely after the removal of the incus.

In reference to the operative removal of the membrana tympani together with the malleus and incus, Jacobson[7] describes the operation as follows: The membrana tympani, either the whole or a part, in case of perforation from suppurative disease, is incised close to its periphery, especial effort being made on the posterior portion to include the annulus tendinosus. The incision is best begun in the inferior segment, in order that the field may be kept clear from hæmorrhage, which is stilled with an application of absorbent cotton, either upon a probe or in the form of a tampon. When this has been effected, the tendon of the musculus tensor tympani is divided by means of an angular knife passed behind the long process of the malleus posteriorily and carried upward with the cutting edge in contact with the tendon; after division of the tendon, the knife is turned in the same plane backward until it comes in contact with the descending process of the incus, down which it is carried until the incudo-stapedial articulation is reached, when this is also divided, a precaution specially necessary, according to the author, in cases of anchylosis of this joint. The malleus, together with the membrana tympani, may now be extracted either by a small instrument resembling a lithotrite, or by means of a wire snare, care being taken in using the latter instrument to carry the wire loop well above the short process. When the membrana tympani is very much depressed, it has been found of advantage to thoroughly inflate the middle ear before the operation. If the operation is undertaken for the purpose of improving the hearing, the removal of the incus is, according to Jacobson, only necessary when that bone has become pathologically immobilized, but in the case of an operation undertaken for the relief of suppurative disease of the middle ear and necessitating the removal of the whole or a part of the membrana tympani together with the malleus, he advises that the incus also should be removed.

Gomperz,[8] in concluding his valuable paper on the development and condition of the question of excision of the membrana tympani and ossicula, gives a *résumé* of his personal experience in 46 cases, of whom 28 were men and 18 women. Two of the cases were between five and ten years of age, 9 between ten and twenty, 19 between twenty and thirty, 10 between thirty and forty, 5 between forty and fifty, 1 between fifty and sixty. These were all cases of suppurative disease of the middle ear treated upon a conservative basis for the purpose of determining the results obtainable without special operative interference. In 49 cases of suppurative discharge from the tympanic attic the pus made its exit in 17 cases through the membrane of Shrapnell. In 36 of the 49 cases, that is to say in about 73 per cent., the treatment by means of middle-ear syringing, insufflations and the like, resulted successfully. Ten of the cases remained under treatment but a short time (not more than a week), and then disappeared from observation, but in four of these the discharge materially decreased in that time. Three of the cases remained unimproved for so long a time that the extraction of the malleus and incus was decided upon. Setting aside 23 cases, which were considered inadequate to the question of the results of conservative treatment because of their uncertain value statistically, it was found of the remaining 26 that 23 remained healed for over a year, one was improved, and two unimproved. Of the 23 cases cured, six subsequently relapsed, — one, eight months later; two, one and one-half years; one, twenty-one months; one, four years; one, five and one-half years. Without exception, these relapses occurred in consequence of the collection of cholesteatomatous masses, after the removal of which by syringing, the ear again speedily healed. In only one of these cases was it found necessary to remove the malleus and incus, which was done with favorable results. Considering, therefore, that out of 26 cases 17 were definitely cured, the percentages would stand as follows: cured, 65 per cent.; cured, with subsequent relapse, 23 per cent.; improved 3.8 per cent.; unimproved, 7.6 per cent.

In view of his experience under the fact that after the removal of malleus and incus, the tympanic attic is likely to become the seat of epidermal accumulation, and that these are frequent causes of relapse, the author is of the opinion that the conservative method of treatment of the suppurative disease of the middle ear is not only not secondary in its value to the operative treatment, but is in advance of it.

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Reports of Societies.

HARVARD MEDICAL ALUMNI ASSOCIATION.[1]

THIRD ANNUAL MEETING.

The Association met at the Harvard Medical School at noon on June 27th, Dr. J. R. Chadwick in the chair.

The Secretary, Dr. R. W. Lovett, presented his report, showing that there were two meetings of the Council and of the Executive Committee respectively during the year, at which the committee to report on the Medical School was appointed, and arrangements for an extra *Bulletin* and for lectures by Dr. Wood, of Philadelphia, were made. The Secretary presented his resignation.

On motion, it was voted to change the title of the Association to the "Harvard Medical Alumni Association," in order that the fact that its members are graduates of the School may be emphasized.

As according to last year's rule the officers, except members of the Council, serve three years, the elec-

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[illegible] der [illegible] Archiv für Ohrenheilkunde, September, [illegible]

[1] The [illegible]

tion was for three Councillors and a Secretary, and resulted as follows:

Councillors whose term ends in 1897: Dr. Algernon Coolidge, Jr., of Boston, Dr. A. T. Cabot, of Boston, and Dr. J. F. A. Adams, of Pittsfield.

Secretary: Dr. Augustus Thorndike, Boston.

The Treasurer, **Dr. Walter Ela**, of Cambridge, stated that the Association, organized on April 30, 1891, now numbers over 1,100 members, of whom 13 were honorary. The members represent thirty-six States and Territories, the Dominion of Canada, and six foreign countries. More than half of the graduates of the Medical School have already enrolled themselves in the Association, which has lost 33 by death since its organization, and has added 108 new members since last year. There are 29 life members, an increase of 17. The life-membership fund, amounting to $600, is deposited in the Cambridge Savings Bank, and draws four per cent. interest, which will be considered current revenue. The Treasurer requests prompt remittance of the annual dues for 1893.

The Treasurer's Report was read and accepted.

Drs. Lincoln R. Stone and **S. W. Langmaid** presented the following report:

REPORT OF THE COMMITTEE ON THE HARVARD MEDICAL SCHOOL.

The year that has just closed has not been marked by any striking feature. The hope, the promise, of the sure success of the new four years' course held out in the report of the committee of last year has been fully realized, is an assured fact.

The entering class of 1892 had 153 new matriculants, — the largest class since 1872 with the exception of 1891, which was very large, caused, it was thought, by the fact that many came in that year to avail themselves of the last year of the three years' course. This class numbered 158 new matriculants; only five more than 1892.

The number of those with the degree of A.B., or some similar academic degree, has fallen in this year's class to 28.2 per cent. as against 53.9 per cent. in 1884. This percentage has fallen steadily from that year. In the College of Physicians and Surgeons of New York, on the other hand, the percentage of those with academic degrees has increased slightly, though perhaps this increase may be due to the decrease in the number of new matriculants. (These figures are taken from the Report of the Dean of the Medical School to the President of the University.)

The increase in the number of students is certainly a great cause of encouragement both to the Faculty and the friends and Alumni of the School. It will give them courage for the next step which they will have soon to take, — the requirement of the degree of A.B., or its equivalent before admission to the Medical School. The Law School has already made such a requirement, to take effect at the close of the year 1895–96. Even now, as was said in last year's report, the entrance examination should be made more strict, and, at least, equal to that for admission to the Freshmen class of Harvard.

In connection with this matter of having only those with an academic degree enter the Medical School, your committee cannot but feel that the time required to secure the degree of A.B. might be shortened, and some of the work in the last year at college might be in line with and count in the work of the Medical School. Or, if that is not allowed, why should not a degree be conferred if the student can, after a proper residence in college, pass the required examination and thus secure his A.B. in three years or less, and at the end of his four years in the Medical School, if he can secure his *cum laude* in his examination, take his A.M. and his M.D. at the same time? It does seem as if those students who intend to continue their studies and to enter the profession of Medicine, Law or Divinity, should not be compelled to spend so much more time, and to wait four years for a degree that they might secure in three; for time to them is more important, to say nothing of money, than to those who intend to go into business or devote themselves to a life of leisure after finishing their undergraduate life.

There have been some changes in the Faculty; notably the resignations of Professors Knight and Cheever. The resignation of Dr. Cheever calls for more than the mere mention of the fact. He has been connected with the School since 1861: first, as Demonstrator of Anatomy, in 1868 Adjunct Professor of Clinical Surgery, in 1875 Professor of Clinical Surgery, and Professor of Surgery since 1882. The ability, the thoroughness, the conscientiousness of his work is too well known to all to require further comment. He has given additional honor to a chair already distinguished by a Warren and a Bigelow. He has well earned his title of "Emeritus." May he live long to enjoy it!

Of the work of the School in its different departments, there is not much to be said; certainly nothing in the way of criticism.

In Anatomy, there has been an ample supply of material for dissecting, and in the lecture-room, to illustrate the bones, models made of paper pulp of remarkable accuracy and lightness are used. This collection embraces upwards of twenty models, representing all the principal bones of the body, enlarged from three to six diameters, and in addition, quite recently, a model of the base of the skull and face, enlarged six times, has been furnished. This collection supplies to the anatomical department almost unrivalled facilities for teaching osteology in a large lecture-room. In the dissecting-room, too, there are marked evidences of activity and progress. The work of the student is carefully noted, and he is encouraged to make careful observations and to note all anomalies in anatomical structures and relations, and his discoveries are preserved and become part of the anatomical history which is being made.

In Histology and Embryology, in Chemistry, Pathology and Bacteriology, the same activity is seen; earnest and active work on every side, and the capacity of the different laboratories stretched nearly to their utmost.

In Physiology, Associate Professor Howell, on whose appointment only a year ago the Committee on the Medical School were congratulating the Association, and whom the School is now to lose by his call to the chair of Biology at Johns Hopkins, has conducted some experiments in advanced work in the physiological laboratory, which seem to be of sufficient interest to speak of at some length, especially as he has finished his duties here. One series of experiments had for its object the determination of the relation of the calcium salts to physiological irritability. The experiments were made in part upon the heart (of cold-blooded animals) and in part upon nerve fibres and voluntary muscle. With regard to the former, it was found that a heart supplied with blood from which the calcium salts had been removed by precipitation, was entirely unable to beat. The blood circulating through the heart, in this case, had the normal amount of proteids. If a small proportion of calcium chloride solution was added to the blood, the heart immediately began to beat with normal vigor. On the other hand, it has been shown that a heart fed upon an inorganic diet, calcium salts, *plus* a certain proportion of potassium and sodium salts, will beat as well as though supplied with blood for many (at least thirty) hours. The general conclusion is, that calcium salts are necessary in some way for the development of the internal stimuli which cause the heart-beats. With reference to nerve fibres and voluntary muscle, it was likewise found that the presence of calcium salts is necessary for functional activity. A muscle deprived of calcium will, however, go into *rigor mortis*, thus tending to disprove the theory that this latter phenomenon is essentially similar to a muscular contraction.

A second series of experiments was made to test the validity of a recent theory of blood coagulation. The theory assumes that the fibrin of the clot is essentially an insoluble compound of calcium with one of the proteids of the blood. The object of the experiments was to determine whether fibrin formed under various conditions contains always the same proportion of calcium. It was discovered that the proportion of calcium may vary within wide limits, thus indicating that the theory above stated is incorrect, although the presence of calcium or of strontium or magnesium salts is necessary to the formation of the clot.

In a third series of experiments a careful study was made of the effect of cold and heat upon the different varieties of nerve fibres found in the body, with especial reference to the degree of heat or cold at which the conductivity of a nerve may be suspended without permanent injury to it. It was found that nerve fibres of different physiological activities, though contained in the same nerve trunk, reacted quite differently in this regard. The work gives promise of developing a new method of isolating the different physiological varieties of nerve fibres, especially those contained in the sensory trunks.

In a fourth series an effort was made to learn something of the degeneration and the regeneration of vaso-motor and sweat fibres in cases of section and suture of nerve trunks to the limbs. The sciatic nerve of a cat was chosen for experiment. The work is not completed. As far as it has gone it indicates that in regeneration of nerve trunks the motor and sensory fibres regain functional activity before the vaso-motor and sweat fibres, the latter belonging to the class of non-medullated fibres. No previous work seems to have been done upon this point.

Your Committee, while acknowledging that the work of the School is so good, that the teaching of the Theory and Practice of Medicine and the Clinical Instruction is of the best, still feel that it may be open to question whether there could not be more use made of the great abundance of clinical material offered by the Boston Dispensary and private dispensaries and hospitals. The out-patients' rooms of the Massachusetts General Hospital and City Hospital, and the Boston Dispensary, show about 100,000 out-patients a year, and in the wards over 10,000 are treated, not including in this estimate the Eye and Ear Infirmary, the Carney, or other small or special hospitals. Of course, both medical and surgical cases are included in these figures. All of the upper classes of students have opportunity to act as assistants to the house-officers or to the surgeons or physicians to out-patients; and are instructed in the surgical rooms in bandaging and minor surgery. In the medical cases diagnosis and treatment are taught, but, of course, in a more or less hasty way — a "snap" diagnosis often being all that there is time for. The cases, too, are generally chronic, often dyspeptic. Of course, in addition to this comes the work done under the eye of the different professors or of the clinical teachers in the wards and in the lecture-rooms.

Without in any way attempting to disparage the value and importance of this teaching — on the contrary, sure of its usefulness and necessity — they cannot but feel that there is room for more and better work where the student is thrown upon his own resources under the general direction of some physician. It seems to your Committee possible to have students from the third and fourth classes take charge of a certain number of patients who otherwise would be treated by the district dispensary physicians. They might be directed to call in such physicians in cases of emergency, and report to him all the facts of the case. What an advantage to the student to see the early stages of disease, to make his diagnosis and direct the treatment of some acute case upon his own responsibility! Why not have this a compulsory part of his work (as in the obstetrical department, where he is compelled to have attended, at least, six cases of confinement), and to submit a full report of each case he has had the care of — diagnosis, treatment and temperature chart — to the clinical instructor of the class?

But it hardly seems necessary to enlarge upon the subject; to state it, is enough to commend its immediate adoption. That there may be difficulties is possible, but they can undoubtedly be overcome. On the part of the patient, it does not seem as if there would be any objection. If there is no trouble in finding women who are thankful to trust themselves to the care of a student while in labor, it does not seem possible that they would refuse similar service while they or some of their families are sick with measles, pneumonia, diarrhœa or consumption. With this, or something like this, added to the present methods of instruction, the Harvard Medical School will give to its students an education that combines, to a degree not yet attained in other medical schools, the best theory with the practice of medicine.

The course of six lectures by Prof. H. C. Wood, of Philadelphia, provided by this Association, excited a good deal of interest and was well attended. By his graphic style he held closely the attention of his audience while speaking simply of the dry details of certain well-known articles of the Materia Medica. It would be wise, undoubtedly, to have a similar course another year on some special subject of medicine or surgery.

The suggestion in last year's report on the Harvard Medical School, of giving additional importance to the department of Materia Medica and Therapeutics, including with it Hygiene in its broadest sense, and having at its head a man of "broad culture" and sound experience, meets with our hearty approval.

To secure such a man the School needs money, — it needs money, too, in all the other departments, — endowments large enough to enable the School to have the best men to be found, and to pay them salaries that will enable them to live without having to do outside work, which, of course, in many cases hinders them from doing the best they can in their special line of work. Then, too, with the growth of the School, with the new demands for biological, bacteriological and physiological laboratories, the expenses of the School increase in a much greater ratio than its resources. It is a cause for regret that the graduates of the Medical School, as well as those of the Law and Divinity Schools, are still denied a voice, or vote, rather, in saying who should govern them.

THE DINNER.

The annual dinner was at the Hotel Vendome, at one o'clock. About one hundred and sixty-eight members were present.

The President, **DR. J. R. CHADWICK**, opened the speaking with an address referring to the success which has attended the adoption of the four years' course at the Harvard Medical School. Gratifying as the increase of students is, he pointed out that the additional year calls for increased clinical opportunities, and these can hardly be supplied without a hospital under the absolute control of the Faculty. "That some friend or friends of the Medical School will endow such an institution must be," he said, "the aim of our hopes and efforts." Dr. Chadwick then spoke of the recent vote in the Board of Overseers against extending the franchise:

"I have said that in the early universities the degree in Arts was a prerequisite for admission to the other Faculties. This is not the case with us, although its desirability is not questioned. The last report of the Dean of the Harvard Medical School contains a table showing that, since 1884, the proportion of students entering the School who are graduates either of colleges or scientific schools has steadily declined until now they represent only 28.2 per cent., a little more than half the ratio of 1884, when it stood at 53.9 per cent." After attributing this difference to the policy which has so raised the requirements in the Academic Department as to deter aspirants for professional degrees from seeking the A.B. first, he continued: "This might truly be called, in phrase of medical terminology, a *boomerangoid* policy. While this is the most important reason for our seeking to have the suffrage in the election of Overseers extended to the alumni of all the departments of the University, I wish to call your attention to two instances of definite injustice under which the Medical School is suffering under the present government.

"In 1772, Dr. Ezekiel Hersey, of Hingham, gave the sum of $1,000, the interest of which was to be appropriated to the support of a Professor of Anatomy and Physic. In 1790, the widow of Dr. Hersey bequeathed the sum of $3,353.95 to the support of the same professor. In 1794 or 1795, Dr. Abner Hersey, of Barnstable, bequeathed £500 'for the encouragement and support of a Professor of Physic and Surgery.' In 1792, a legacy of £400 was left the College by John Cuming, of Concord, the income of which was for the 'Professor of Physic.' In 1812, Esther Sprague gave $2,000 'towards the support of the Professor of the Theory and Practice of Physic.' It is admitted that these funds were given 'to promote medical education as a matter of distinctive professional training.' How do you suppose the income of these funds is used? Two-fifths is allotted towards paying the salary of the Hersey Professor of the Theory and Practice of Physic in the Medical School, while the other three-fifths goes to pay the salary of the professor in the Museum of Zoölogy, who gives no instruction 'to promote medical education.' The Medical School has repeatedly made a claim for the use of the whole income of these funds to the Corporation, and at least once to the Board of Overseers, invariably without success.

"Secondly. You all know that the University Library has large special funds for the purchase of books for the use of the professors and students; that books are purchased on demand of the professors and sent to the different laboratories and departments for immediate use, and are recalled to the central library as soon as their immediate usefulness has passed. The claims of the Medical School to participate in this privilege have been persistently ignored.

"With such instances of injustice, narrowness and partisanship, it behooves all the professional schools to unite in making the extension of the suffrage in the election of Overseers the chief qualification of candidates for that Board."

Dr. Chadwick then alluded to the gift by Miss Lucy Ellis, of $2,000 annually for five years to the Department of Physiology and Pathology, and of a $100 scholarship bequeathed by the late Dr. O. W. Doe, '65, he also spoke of the extra *Bulletin* issued by the Association, and of the lectures by Dr. H. C. Wood, of Philadelphia.

DR. DA COSTA, of Philadelphia, spoke on medical education, which, he said, is a matter of constant dispute and agitation because medicine itself is a most progressive science.

"The chief difficulty in making a high standard universal lies in the number of the medical colleges. It is, indeed, a sorry admission that the medical schools in this country are the greatest enemy to medical progress, not in themselves but in their number. Some years ago there were nearly three hundred; now there are not far from one hundred and fifty, and they are dying at about the rate of three a year, without, it must be said, many mourners. A further reduction would be a national benefit. The remedy lies in their amalgamation. Let the absurdity cease of small towns having three, four or six of these struggling institutions, no one of which can have a vigorous life.

"There is now all over the country a growing disposition for the universities to take charge of medical teaching and to develop their medical departments with all the zeal they give to the others. We see it in Michigan; we see it in California and Colorado; we see it in Louisiana and Texas as strikingly as in our Eastern States. There is nothing but good in this. The power, the means, the spirit of the university go out to its branch; the university in turn gains by the reputation of its medical faculty, and by the recognition that medicine is an essential part of the new learning which leads on to the highest attainable civilization."

Dr. Da Costa then spoke in favor of exacting more stringent educational requirements for matriculation. He said that 129 out of 148 medical colleges in the United States and Canada have adopted some standard of general qualifications; and even where the requirements are shadowy, they still indicate a move in the right direction. The country is not yet ready to have medical colleges demand of their students a degree in Art or in Science. The universities, he urged, must shorten their course, and in every way offer facilities to those who wish to study medicine. He gave some figures to show how rapidly the proportion of Bachelor of Arts has decreased in the leading medical schools, but he asserted that the average mental training of medical students is higher than ever; and he said that our American colleges must learn the system of the German universities, at which, during the past fifty years, only 23.1 per cent. of the students have been over twenty years old. He gave warning against trying to put too many subjects in the curriculum. "The medical student cannot master them all. . . . Teach some subjects thoroughly, and let the rest alone. . . . Allow him, after the first year, to choose for himself much more than he is now permitted to, with full knowledge of the subjects required at the final examination."

Dr. Da Costa also spoke of the need of large endowments; but most important, he said, are great teachers. "Who goes to Paris without thinking of Lænnec, Andral, Trousseau and Nèlaton? Who visits Vienna and does not have before him Rokitansky, Skoda and Oppolzer? Who can go to Berlin and not think of Langenbeck and Frerichs, or to London and be unmindful of Hunter, and Cooper, and Bright? Who comes to Harvard and does not remember the Jacksons, and Bowditch, and Bigelow, and Clark, and Ellis, and Storer, and Shattuck, and many others of fame?" He closed with a tribute to Dr. Holmes, and with a prognostication of progress at Harvard.

Dr. Abraham Jacobi, Professor of Children's Diseases in Columbia College, was next called upon. He pointed out the great influence which the profession at large, apart from instructors in the medical schools, has wielded in advancing the standard of medicine. Averting to the general requirements demanded of would-be medical students, he said that no academic examination in general education should be passed after matriculation, because after matriculation all the student's time should be devoted to his medical studies. He recalled how the general course has been lengthened by the addition of laboratory and clinical work. "We have too many schools, too many doctors, too many students. We can do with fewer doctors provided the quality of both the doctors and the people will continue to improve. We are, as a profession and a teaching body, responsible for the condition of things, medical and hygienic, which concern the State, the people at large and mankind."

Dr. Jacobi then related how in Germany, the medical students who graduated with honors were kept in the large cities, while the others went out into the provincial towns and villages. He spoke of the subjects to be studied in the fourth year of the extended course — clinical teaching, embryology, the history of medicine itself (which has been sadly neglected) and legal medicine and medical jurisprudence. He predicted that men would learn to think more quickly. He concluded by describing the different ways in which professors get their appointments, and the service done by the humbler practitioner not less than by the most brilliant original investigator.

The last speaker was **Prof. W. S. Chaplin**, Chancellor of Washington University, St. Louis. He announced that St. Louis has eleven medical schools and that this excessive number is due to the fact that the people do not understand what science, education, culture mean. It is also convenient for a specialist, he said, to make known the fact that he is a specialist by advertising himself as a professor in a medical school. He then gave an illustration of the worthy self-sacrifice of the professors in one of these very schools. The people of the West, he remarked in closing, are quick to learn, and as soon as they see examples of first-rate medical schools in the East, they will be certain to imitate them.

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AMERICAN OPHTHALMOGICAL SOCIETY.

Twenty-ninth Annual Meeting at New London, Conn., July 19 and 20, 1893.

The Society was called to order by the Vice-President, **Dr. George C. Harlan**, of Philadelphia, Pa.

THE RELATION OF THE PATELLAR-TENDON REFLEX TO SOME OF THE OCULAR SYMPTOMS FOUND IN GENERAL PARALYSIS OF THE INSANE.

by **Dr. Charles A. Oliver**, Philadelphia.

The following formulations were offered:

(1) In some of the cases in the second stage of the disease, especially where the patellar-tendon reflexes were unequally exaggerated, there appeared to be an irregular and unequal spastic enervation of the two irides, causing irregularities in pin-point pupil forms.

(2) In a few cases, especially in the third stage of the disorder, where the patellar-tendon reflexes were unequally diminished, the pupil-size though small and its shape though somewhat irregular, seemed to be but little acted upon by any powerful mydriatic.

(3) In many cases, especially in comparatively young subjects in the third stage of the disease where the patellar-tendon reflexes were unequally diminished there appeared to be an unequal paralytic ennervation of the two irides; the pupillary dilatation manifesting itself at times, though not as a rule, in the eye with the greater amount of objective optic-head degeneration and retinal change.

(4) In a few cases (especially in men beyond middle life) in the third stage of the disorder, where the patellar reflexes were markedly diminished and where the ataxias were quite pronounced, there were marked temporary assymetries of pupillary form, one often being quite small and irregular for several examinations, whilst its fellow was large and ovoid or oval.

(5) In quite a number of cases, especially in the advanced stages of the disease (although seen in a number of cases in their earliest stages) where the patellar-tendon reflexes were unequally exaggerated or diminished, there was a failure of the irides to respond to even major degrees of light stimulus; this being true not only for those subjects exhibiting a true spastic myosis but more especially shown in those instances where with partial dilatation of the pupil, mydriatics failed to act.

(6) In many instances, especially in the older cases where the patellar-tendon reflexes were, as a rule, unequally diminished or even lost, there was not only failure of iris-response to the strongest light stimulus carefully thrown upon the retina, but where obtainable, the irides seemed to fail to react to the various

coarse and rough subjective and objective procedures necessary to be used in order to evolve both separated and associated efforts for accommodation and associated efforts for convergence.

(7) In some instances, where ciliary muscle innervation could be satisfactorily obtained, both the spastic excitation and the paralytic enervation at times found by subjective reading tests and objective study with the retinoscope, seemed to be in direct ratio with the patellar-tendon reflexes as the iridic changes.

(8) In quite a number of cases where there was marked inequality of the pupils with more or less want of reaction of the irides to light stimulus the patellar-tendon reflex on the side of the larger pupil seemed to be the one the more greatly diminished.

(9) In a number of instances, especially during the very earliest stages of the disease, where the patellar-tendon reflexes were beginning to lessen to unequal degrees, there often appeared momentary secondary ataxic dilatation of the pupil during exposure to strong light stimulation.

(10) In many cases, especially during the second stage of the disorder, when the patellar-tendon reflexes began to become irregular and inconstant, pupillary inequalities as expressive of unequal iris innervation and action, became more and more constant.

CLINICAL HISTORY OF A CASE OF SPINDLE-CELLED SARCOMA OF THE CHOROID WITH A STUDY OF THE MICROSCOPIC CONDITION OF THE GROWTH,

by **Dr. Charles A. Oliver**, Philadelphia.

The patient, a man thirty-four years of age, consulted the writer on account of trouble with the left eye. Five years previously he suddenly noticed that objects situated to the right became dimmed when he attempted to look at them with the left eye. This gradually and painlessly extended over the whole field of vision until in a little more than three years the eye became blind.

In June, 1890, a tumor of the choroid was discovered by Dr. J. H. Thompson, of Kansas city. There was a history of syphilis but treatment had no effect upon the growth and a diagnosis of sarcoma was made and operation urged but not accepted.

When seen by the writer in June, 1892, a large vascular growth was seen in the upper part of the globe. Immediate enucleation was advised and accepted. The operation was done the following day. The patient has recently been seen and is perfectly well with no evidence of return.

Microscopical examination showed the growth to be a spindle-celled sarcoma.

SARCOMA OF THE CHOROID,

by **Dr. Emil Gruening**, of New York.

The patient, a woman aged thirty years, was seen April 17th on account of diminution of sight in the right eye. The ophthalmoscope showed the retina in the macular region pushed forward. This projection was about four discs in diameter. This had given rise to no symptoms with the exception of a scotoma. Sarcoma was diagnosed and the eye was removed. Examination showed the growth to be a spindle-celled sarcoma.

SARCOMA OF THE EYE-LID,

by **Dr. Emil Gruening**, of New York.

This affection is exceedingly rare, the case reported being the only one seen by the author. The patient was a young man twenty-three years old. He came under observation January 1, 1893. Five years previously he had noticed a small swelling in the lower lid of the right eye. This bled freely and irregularly. It was operated on in another city but soon recurred. When seen it was as large as a hazel-nut and involved two-thirds of the lid with a nodular mass on the inner surface of the lid which readily bled. The skin covering the mass was freely movable. A small portion of the growth was removed and found to be sarcoma. The tumor with the entire thickness of the lid was then removed and the lid restored by a plastic operation.

Dr. H. Knapp in the discussion reported two cases of traumatic sarcoma of the lid, both terminating fatally.

TUMOR OF THE IRIS, PROBABLY TUBERCULAR,

by **Dr. George C. Harlan**, Philadelpia.

The patient, a male child, was born September 5, 1890. In February, 1893, weakness of the right eye with photophobia and lachrymation was noticed. The child was first seen March 6, 1893. There was some conjunctivitis but no chemosis. There was a small posterior synechia. A number of small yellowish-white rounded nodules were noticed on the periphery of the iris. These increased rapidly in size and others were added. The deposit increased rapidly and soon filled the upper outer third of the anterior chamber and completely covered the pupil. Intense photophobia of the sound eye developed and enucleation of the diseased eye was done March 15th. After the operation the condition of the child rapidly improved. Microscopical examination indicated that the lesion was probably tubercular although bacteriological examinations gave negative results.

REFLECTIONS UPON A DISASTROUS CASE OF OPHTHALMIA NEONATORIUM,

by **Dr. B. Alex. Randall**, of Philadelphia.

Dr. Randall referred to the great importance of strong clear-cut expressions in relation to preventable disease in order that the community and the profession may be properly aroused to the dangers of the situation and spurred to thorough and persistent efforts to combat them. Yet such expressions have danger to those using them and to others, since careful precautions may fail to prevent the disease or bring it to a successful termination. This point was brought painfully home to him by a disastrous case of ophthalmia neonatorium in which he could find no fault with the prophylactic or the therapeutic measures, yet both eyes were lost. Some authoritative statements as to the preventability and curability of the disease were repeatedly called to the attention of himself and the accoucher. He wished to protest against too uncompromising claims as to the powers of medical measures since such may be two-edged weapons which turn most seriously against their authors or other medical men who have really done all that human means could effect.

CLINICAL NOTES ON SOME REFRACTIVE AND MUSCULAR CASES,

by **Dr. B. L. Milliken**, Cleveland, Ohio.

In very high degrees of astigmatism the use of the ophthalmoscope is the most satisfactory method of testing refraction. Six cases were cited where attempts were made to correct by the ordinary means of testing with no satisfactory results while the ophthalmoscope gave most excellent correctness. In one case, a [illegible] years with history of fronto-temporal headache for years, had a high degree of mixed astigmatism in the left eye which under a mydriatic gave no satisfactory results, but with the ophthalmoscope the following was obtained, the right eye having only a moderate degree of astigmatism:

O. S. + [illegible] D. cylinder axis 20° ⊂ [illegible] D. cylinder axis 110°. V = $\frac{6}{9}$.

This glass with the proper arc for the right eye gave great relief and has been worn with comfort.

In another case, that of a man aged thirty-nine, there was high mixed astigmatism in both eyes and especially marked in the right eye which with a mydriatic had to be worked out with the ophthalmoscope and gave the following:

O. D. — 10 D. cylinder axis 90° ⊂ + 7 D. cylinder axis 180°. V = [illegible].

O. S. — 6 D. cylinder axis 100° ⊂ + 4 D. cylinder axis 10°. V = [illegible].

These glasses have been worn constantly for two years with the greatest comfort, the man working all day at book-keeping. The ophthalmometer showed great irregularity in the images and could not be used with any accuracy in testing the refraction.

Several cases were reported showing what could be done with prisms in correcting muscular insufficiencies and the question was brought out as to the advisability of wearing prisms at various angles for the purpose of correcting both a lateral and a vertical muscular insufficiency with the same glass; for instance, in a case of a lateral insufficiency of say 1° and a vertical insufficiency of 1°, instead of making two prisms to correct, one at 90° and the other at 180°, place a 2° prism at 45° or 135°, right or left, as the case might be. The histories of several cases of this kind were given in which patients had worn the glasses thus with much benefit, and a trial of this kind was urged.

SEVERAL CASES IN WHICH THE VERTICAL DIPLOPIA TEST PROVED UNTRUSTWORTHY,

by **Dr. Samuel Theobald**, Baltimore.

Four cases were described in which the cover test showed a high grade of exophoria, both in distant and near vision, but in which the vertical diplopia test failed entirely to demonstrate the presence of the condition, in some of the cases even indicating esophoria. In one of these cases and also in a case of esophoria, the notes of which were given, it was found that when, during the application of the vertical diplopia test, the cover test also was employed, a squint would show itself in the excluded eye, which the vertical prism failed to bring out, and which would disappear upon the removal of the cover, though the vertical diplopia was still maintained, showing that the latter had no controlling influence over the action of the lateral muscles. The cases, such as described, in which the vertical diplopia test proved untrustworthy are, however, comparatively rare and the writer still employs it daily and considers it of the greatest value.

AN ADDITIONAL NOTE IN REFERENCE TO THE CASE [illegible] USEFUL VISION MAINTAINED BY MEANS OF A TOTALLY DISLOCATED LENS, HERETOFORE REPORTED TO THE SOCIETY,

by **Dr. Samuel Theobald**, of Baltimore.

The feature of interest was that a fragment of the dislocated lens, the capsule of which had ruptured two years before, fell through the pupil into the anterior chamber where it remained for six months, resisting the solvent and opacifying action of the fluids of the eye so completely as to retain its transparence and its sharply cut angle. It closely resembled a bit of yellowish glass and might easily have been mistaken for a foreign body. As its presence in the anterior chamber began to cause considerable irritation, the pupil was dilated and it was caused to fall again into the vitreous chamber, its return to the anterior chamber being prevented by the application of a myotic. This was followed by the disappearance of the irritation which has not since returned. The insolubility of the lens fragment is the more remarkable in view of the fact that the patient was but twenty-two years old at the time the lens capsule ruptured.

A SERIES OF WOOLS FOR THE READY DETECTION OF COLOR BLINDNESS,

by **Dr. Chas. A. Oliver**, Philadelphia.

The following modification had been made by the writer in the Holmgren series.

Five individual tests are employed, pure green, pure red, rose, pure blue and pure yellow. Loose and separate skeins of wool were employed. The colors were made of equal relative intensity. The value of the color used in each test skein was expressed. The set was so constructed that it could be used by any intelligent layman.

The test was so constructed that passing color changes could be preserved and permanently kept for future comparison, and so that written and verbal expressions of the character and the amount of the sub-normal color perception could be given. The wools were made of one grade of manufacture and dyed with vegetable material.

After several years' trial the writer found that he could dispense with all but the five principal test skeins, five pure match skeins and eighteen confusion skeins of relative equal value to the pure match skeins.

AFTERNOON SESSION.

GOUTY RETINITIS, CHORO-RETINITIS AND NEURO-RETINITIS,

by **Charles Stedman Bull**, M.D., of New York.

The paper was based upon a study of the retinal changes found in over one hundred cases of gouty patients. Five of these cases (two with autopsy) were reported in detail. The points to which attention was drawn were:

(1) The changes in the fundus are always bilateral though rarely symmetrical in the two eyes.

(2) The degeneration in the walls of the blood-vessels and in the retina cause marked impairment of central vision, little or no impairment of peripheral vision, and never end in blindness.

(3) The loss of central vision is always progressive up to a certain point, unless the cause of the disease is recognized early in the outset and immediately and properly handled. Improvement of the vision after the disease is established cannot be expected.

(4) Hæmorrhages into the retina are rare except in the beginning of the disease. Their absence later is probably due to the fact that the strength of the vascular wall is increased by the deposit, though its elasticity is diminished.

(5) The most marked feature in the fundus is the development of the arterio-sclerosis and phlebo-sclerosis. This is seen by the ophthalmoscope in the vessels of the retina and the microscope shows that the degeneration exists as well in the vessels of the choroid and optic nerve.

(6) Another almost equally pathognomonic symptom is the peculiar yellowish granular exudation in the retina, located by the ophthalmoscope around the posterior pole of the eye and generally leaving the macula intact and proved by the microscope to be mainly in the nerve-fibre layer, though found in all the layers except that of the rods and cones.

(7) The changes in the optic nerve-fibres seem to be almost entirely intra-ocular and cannot be traced for any great distance back of the eye-ball.

RETINITIS PUNCTATA ALBESCENS,

by **DR. MYLES STANDISH**, Boston.

These cases are not uncommon, yet the literature of the subject is surprisingly small for a condition which presents such a striking picture to the ophthalmoscope. The majority of cases come on account of some discomfort in the use of the eyes, and the white rounded, glistening spots are discovered in the retina in the course of the examination. After a time, comfort in the use of the eye returns, but without the spots disappearing; what the substance is that produces the appearance is undetermined. A case was reported which was of special interest as it apparently filled out the clinical history of these cases in the predromal and acute stages.

REMOVAL OF HARD CATARACT BY SUCTION,

by **DR. LUCIAN HOWE**, of Buffalo.

It is probable that every operator has occasionally experienced difficulty in completing the final act of extracting the lens. In order to obviate this difficulty, the writer had employed an instrument similar to a large dropping-tube, by means of which a partial vacuum could be made. The tube was applied to the protruding lens, enabling the operator to draw it out.

DR. FRANK W. RING, of New York, exhibited an

OCULAR MASK OF PAPIER-MACHE

to be used for the protection of the eye after cataract operation.

THE ARTIFICIAL RIPENING OF CATARACT,

by **DR. EDWARD JACKSON**, Philadelphia.

A series of cases were reported which had been treated by tapping the anterior chamber, drawing off the aqueous humor, and massage of the lens, through the cornea as suggested by Pooley and advocated by White.

The operation was followed by very little reaction; there being no iritis or posterior synechia in any case. In patients over fifty years of age, the operation was followed by rapid increase in the opacity of the lens and early maturity of the cataract. In patients under thirty-five years of age no effect upon the existing lens opacity was produced.

The author concluded that this method of ripening cataracts was certainly more efficient than that of Forrester — iridectomy and massage; was almost entirely free from danger, and was probably a better means of avoiding prolonged practical blindness than the extraction of the immature cataract.

A CASE OF TRAUMATIC DISLOCATION OF THE IRIS UNDER THE UNBROKEN CONJUNCTIVA, THE EYE DAMAGED BUT PRESERVED, TYPICAL SYMPATHETIC OPHTHALMIA IN THE OTHER EYE,

by **DR. HERMAN KNAPP**, of New York.

Mr. M., forty-five years old, came under observation December 21, 1892. Ten days before, his left eye had been struck with the head of a small pet dog with which he was playing. The eye had been red and black ever since, but not painful, the sight impaired. On the inner side of the cornea and two millimetres from its margin the conjunctiva was raised by a black mass, which proved to be the iris. The conjunctiva showed no wound or scar; the whole iris was found absent from its normal position; the lens was in place and transparent; there was no neuro-retinitis or isolated rupture of the choroid. Vision equalled $\frac{15}{200}$. The patient was directed to bandage the injured eye lightly, and not use the other eye, and keep quiet. Everything did well until twenty-nine days after the accident when symptoms of sympathetic inflammation appeared in the right eye. Under active treatment, the attack subsided, but relapses occurred, and vision in the right eye was completely lost. In the left eye vision equals $\frac{2}{200}$, and the displaced iris has shrunken to a flat blackish mass scarcely raised above the conjunctiva.

(To be continued.)

Recent Literature.

On the Chemistry and Therapeutics of Uric Acid, Gravel and Gout. Being the Croonian Lectures for 1892, delivered before the Royal College of Physicians of London. With additions. By **SIR WILLIAM ROBERTS**, M.D., F.R.S. London: Smith, Elder & Co. 1892.

In these four lectures, which should have received earlier notice, the author gives the results of an elaborate investigation of the chemistry of uric acid, gravel and gout. The principal conclusions arrived at concerning the occurrence in the body of free uric acid and urates in the physiological and in the pathological state are:

(1) That free uric acid is not known physiologically; neither in the body nor in the urine. It is known clinically and pathologically as crystalline sediments in the urine, and as gravel and calculus in the urinary passages.

(2) That neutral urates are not known physiologically nor pathologically.

(3) That bi-urates occur pathologically as components of gouty concretions in the tissues; that they are known in the urine only after this secretion has undergone ammoniacal fermentation; and that it is doubtful if they ever exist physiologically in the blood or tissues.

(4) That the quadri-urates are specially the physiological combinations of uric acid; that they exist normally in the urine and probably also in the blood; and that all the morbid phenomena due to uric acid arise probably from secondary changes in the quadri-urates.

There is an inherent tendency in normal acid urines to the liberation and precipitation of uric acid. Pathological gravel may, therefore, be regarded as due to an exaggeration of conditions which prevail, in a less pronounced degree, in the normal state. The conditions of the urine which tend to accelerate the precipitation of uric acid are, the author concludes, high acidity, poverty in salines and in pigments, and high percentage of uric acid. And, conversely, the conditions which tend to postpone precipitation are — depressed acidity, richness in salines, richness in pigments, and low percentage of uric acid. On the interaction of these factors the occurrence or non-occurrence of uric acid, gravel appears to depend; and the most important of these factors is the grade of acidity.

When concretions are once formed in the kidneys or bladder, there is little prospect, in the author's opinion, that they can be dissolved by imparting solvent qualities to the urine. Good results may, however, be expected in the field of prophylaxis. The paramount indication of preventive treatment is to diminish the acidity of the urine by the administration of alkalies or alkaline mineral waters.

The author accepts the view that bi-urate of sodium in the crystalline form is the essential constituent of the chalk-like deposits found in certain parts and tissues of the body in cases of gout, and that the deposition of this substance is the actual cause of the joint troubles of gout. He formulates the following general theory of urate precipitation. In the normal state, uric acid circulates in the blood as quadri-urate, and is finally voided as such with the urine. But in the gouty state, either from defective action of the kidneys, or from excessive introduction of urates into the circulation, the quadri-urate accumulates in the blood. There, circulating in a medium which is rich in sodium carbonate, it gradually takes up an additional atom of base, and is thereby transformed into bi-urate, which is less soluble, and probably, also, less easy of removal by the kidneys. The bi-urate thus produced exists at first in the hydrated or gelatinous modification. But with the lapse of time and increasing accumulation it passes on into the almost insoluble anhydrous or crystalline condition; and then precipitation of it becomes imminent, or actually takes place.

The mechanical theory seems to the author to offer the most natural and complete explanation of the phenomena of regular gout. He does not accept the theory of a poisonous action which has been brought forward in explanation of the phenomena of irregular gout. He is inclined to attribute the latter also to the local action of slighter precipitations of urates upon the membranes of the brain or upon the fibrous sheaths of the nerve-roots.

In the consideration of the therapeutics of gout, the author recommends restricting the ingestion of nitrogenous food, and increasing that of vegetable food. The latter has no direct influence on the production of uric acid, but the free consumption of articles of vegetable origin tends to restrict the in-take of nitrogenous food, and thus has indirectly the effect of diminishing the production of uric acid. His experiments show that sodium chloride, even in very small quantities, always appreciably hastens the precipitation of the crystalline bi-urate. He therefore recommends gouty patients to restrict, as far as practicable, the use of common salt. In discussing the use of mineral waters, the author holds that gouty persons should entirely avoid waters which owe their activity to sodium salts, or should use them very sparingly, since sodium salts hastens the precipitation of sodium bi-urate. Waters which contain but a small quantity of mineral ingredients are the most useful. These act to dilute the blood, and lower its percentage of urates and sodium salts.

Carbonate of lithium and piperazine have been recommended for use in the treatment of gout on strictly chemical grounds. The author's experiments show that the addition of these substances to blood-serum or synovia had not the slightest effect in enhancing the solvent power of these media or sodium bi-urate; nor the slightest effect in retarding its precipitation from serum and synovia artificially impregnated with uric acid. Their beneficial action, if any, is not due, therefore, to their solvent action on the material of gouty concretions.

Brain Surgery. By M. Allen Starr, M.D., Ph.D., etc. 8vo, pp. xii, 295. With fifty-nine illustrations. New York: Wm. Wood & Co. 1893.

"It is the object of this book," says the author, "to state clearly those facts regarding the essential features of brain disease which will enable the reader to determine in any case, both the nature and the situation of the pathological process in progress, to settle the question whether the disease can be removed by surgical interference, and to estimate the safety and probability of success by operation." To accomplish the first object in every case is as yet beyond our attainments, and to state all the facts would require a treatise instead of the score of pages which the author has devoted to the exposition. What he has done is to collect, chiefly from American sources, a large number of cases of brain disease, where an operation has been performed, to add to them a number of original cases, and to attempt to draw deductions from these data. The result is a work which is interesting and not without value, but, nevertheless, it is far from satisfactory. It would seem as if it were time to make a critical estimate of the results attained by brain surgery in the last nine years, but, in point of fact, it is still in some respects too early, and the work before us bears evidence of haste and inaccuracy. Nearly a hundred pages of the book are devoted to the subject of trephining for epilepsy, and this chapter is a good example of some of the most serious faults in the work. The discussion practically is limited to Jacksonian epilepsy, and the author, in his preliminary remarks, states that the character of these attacks "denotes the exact position of the disease in the brain," apparently ignoring the evidence brought forward by various authors to show that the Jacksonian attack has comparatively slight localizing value. He reports thirteen cases of his own — one of which is manifestly a case of tumor of the brain and does not belong here — and claims that three were cured, yet in these, as in every other case, the convulsions recurred after the operation. In his own cases, and in those he has collected from literature, moreover, too little time has elapsed since the operation for us to say, even if the fits have not recurred, that the case is actually cured. Hence, the thirteen alleged cures in forty-two cases, cannot be accepted. Van Gieson's admirable study of the pathology of two of the cases —by far the best thing in the book — shows how little permanent benefit can be hoped from surgical interference. It is, nevertheless, true that trephining will cause a temporary cessation of the attacks in some cases, although the patient may eventually relapse into as bad a condition as before the operation. Hence we may accept, with some modifications, the author's conclusions, that operation may be of benefit, although we doubt if it be curative, and that thus it may be justifiable. The next chapter is nominally on trephining for imbecility due to microcephalus, but the author seems to be in a state of confusion on the whole subject. Trephining for imbecility due to microcephalus, Lannelongue's operation for craniectomy receives no attention, but instead the various forms of cerebral infantile paralysis are discussed, and cases are reported where trephining was done to relieve paralysis or convulsions. The subsequent chapters on trephining for hæmorrhage, abscess, tumor, hydrocephalus, etc., are clearer and more accurate, but they contain little that is new. Trephining for persistent headache, which has more than once been of benefit, meets with no favor in his eyes. The work, on the whole, is below the author's reputation.

A Practical Treatise on Materia Medica and Therapeutics, with Especial Reference to the Clinical Application of Drugs. By JOHN V. SHOEMAKER, A.M., M.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital; Member of the American Medical Association, of the Pennsylvania and Minnesota State Medical Societies, the American Academy of Medicine, the British Medical Association; Fellow of the Medical Society of London, etc. Second edition, revised. In two royal octavo volumes. Volume I, 353 pages: Devoted to Pharmacy, General Pharmacology, and Therapeutics and Remedial Agents not Properly Classed with Drugs. Volume II, 680 pages: An Independent Volume upon Drugs. Philadelphia: The F. A. Davis Company.

The first volume of this work is largely devoted to the consideration of the value of the natural forces and of mechanical and physiological agencies in the treatment of disease; and the prominence given to these subjects is unusual. Heat, Cold, Climatherapy, Electricity, etc., are among the topics discussed. The student and practitioner will find here much that is useful and suggestive, not usually included in a work of this character. The second and larger volume of the two contains an alphabetical list of drugs; and the physiological action and the therapy of each of these is discussed. The list is too long, and some of the drugs are considered in insufficient detail for the student, but the practitioner will find the volume excellent for reference. The index is printed in too small type for comfort.

The Physician's Pocket Day-Book. Designed by C. HENRI LEONARD, M.A., M.D., Professor of Medical and Surgical Diseases of Women and Clinical Gynæcology in the Michigan College of Medicine. Issued annually by the Illustrated Medical Journal Co., Detroit, Mich.

This pocket day-book is arranged to contain the daily record of visits for twenty-five or fifty patients a week for thirteen months, together with ninety-four obstetrical cases. The introduction has a list of doses and various tables for reference.

AT the University of Moscow the fees for the medical curriculum of five years, amount to only £80.

THE BOSTON

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THURSDAY, NOVEMBER 23, 1893.

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PATHOGENY OF BRONCHITIS.

THE relation of bacteria to bronchitis has been elucidated by two recent writers, Marfan and Claisse.

A large division of bronchitis comprehends specific infectious forms; another division, the non-specific bronchitis. Every bronchitis, however, according to Marfan,[1] is infectious.

The specific forms attend measles, whooping-cough, small-pox, influenza, etc., and are dependent on the microbe that causes the disease. These forms are "exogenous" or "hæmatogenous"; the germ is brought by the air or by the blood. Most bronchites are exogenous, but those of small-pox, glanders, malaria and secondary syphilis are hæmatogenous.

The non-specific infectious bronchites constitute a large and important class. Under this head are included common bronchitis (*a frigore*), the bronchitis that attends chronic naso-pharyngeal affections, chronic affections of the lungs and pleura, hay fever, gout, heart disease, Bright's disease, etc. To this division is assigned the bronchitis which is present as a complication in all adynamic and cachectic states, as in infectious endocarditis, diphtheria, typhoid fever, diabetes, etc. Bronchitis is the rule in typhoid fever, but it is only a secondary element, and is not due to the presence in the bronchi of Eberth's bacillus.

Marfan's explanation of bronchitis from "catching cold" is substantially as follows:

Acute bronchitis is sometimes occasioned by the respiration of a cold atmosphere which penetrates the bronchi suddenly and violently. But it is not by the direct contact of cold air with the mucous membrane of the respiratory passages that bronchitis is ordinarily produced. It is generally by a sudden chilling of the cutaneous surface, and especially when the body has been overheated by prolonged exercise and is perspiring.

Marfan remarks that some persons have a susceptibility to cold when this is limited to certain anatomical regions; for instance, one will have bronchitis if the feet are allowed to become cold, another, if he remains an instant with arms or chest bare, etc. Moreover, cold and damp climates and chilly seasons have a great influence on the development of bronchitis *a frigore*. The same may be said respecting sudden changes of weather. Infants, old people and feeble cachetic subjects are particularly susceptible, for reasons which are sufficiently obvious.

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[1] Traité de Médecine, Charcot, tome iv.

But how does a chill act in provoking an inflammation of a mucosa? The old medical writers supposed that the sweat glands were closed by the cold and that the excrementitious matters of perspiration were retained in the blood. Hence, a general toxæmia, with inflammatory manifestations in parts of least resistance. This notion is now abandoned. Experiments have shown that in animals which are overheated, there is considerable dilatation of the cutaneous vessels; the blood circulates there with force and abundance. If now a sudden chilling is brought about, the blood which distends the peripheral vascular network is cooled in mass and by repercussion cools the organism. This sudden loss of heat causes profound disturbances in the internal organs. Severe congestions result.

But the experimentation stops here, and cannot explain why the fall of the internal temperature engenders bronchitis.

The bacteriological study of the sputa completes the data furnished by experimentation.

Note in the first place, that the upper air-passages and bronchi contain microbes independently of any pathological state. Among these the four following species have been observed which have pathogenic properties: the staphylococcus pyogenes (aureus et albus), the streptococcus pyogenes, the pneumococcus, the pneumo-bacillus of Friedländer. Let now a bronchitis of whatever nature supervene, and it will be seen that these microbes are more abundant in the sputa; new species appear; proteï which are pathogenic and even pyogenic when inoculated in animals; two saprogenous microbes, the one resembling Eberth's bacillus, the other, the bacterium coli commune. Cornil and Babes remark that these microbes are found in all the bronchites: in bronchitis *a frigore*, in influenzal, tuberculous, morbillous bronchitis, etc. Marfan, besides those above mentioned, has also found the pneumococcus in the exudation of almost all the bronchites which he has examined. Pausini declares that the streptococci are the only micro-organisms met with constantly in the sputa, both in bronchitis and in health. He describes eight different species of these streptococci, several species of fungi, twenty-one species of bacilli, ten species of micrococci. Frick has studied the chromogenic bacteria which give to sputa their green color.

Marfan, in summing up these bacteriological results, asks what conclusion can be drawn therefrom concerning bronchitis *a frigore*? Although the direct demonstration has not been made, it is difficult not to think that all these microbes have a real pathogenic influence. Whether they live normally in the respiratory passages or whether they come from the atmosphere, it must be admitted that the cold favors their fixation and their pullulation in the mucosa of the bronchi.

The solution of the problem then consists in knowing why the perturbation caused in the organism by the cold, favors this development of micro-organisms. In the normal state the system defends itself against microbes by the bactericidal properties of the serum and the phagocytic properties of the anatomical elements. These two sets of properties are in part dependent on the nervous system. It is very likely that the profound perturbation produced by the cold on the internal calorification brings about a disorder of the vaso-motor innervation which causes congestion and places the organism in a state of lessened resistance, and just in those localities (respiratory passages, skin, intestine) where microbes are normally present we see inflammations set in of microbic origin which are properly designated infectious, non-specific.

It is easy to conceive that a first attack of bronchitis diminishes the power of defence of the bronchi and leaves behind certain microbes that are more virulent, and this naturally favors recurrences.

What is said of bronchitis *a frigore* is just as applicable to coryza from cold, and when the two co-exist, the explanation may be as follows: Either the cold acting in the same manner on the nasal and bronchial mucosa favors the microbian invasion, simultaneous or successive, of the two mucosæ; or the coryza alone is produced by the cold, and the microbes having acquired their virulence in the nasal fossæ invade later, by simple propagation, the tracheo-bronchial mucosa. There is nothing at the present time that indicates which view of this pathogency is the more correct. Certain it is, however, that bronchitis *a frigore* is generally preceded by a coryza; and it is regarded from a clinical point of view, a descending bronchitis.

The article of Claisse (*Semaine Médicale*, 1893, p. 297), adds to the above statement the notion of intoxications by microbe secretions. The presence of the microbe in the bronchi manifests itself by local effects on the tubes and by general toxic effects.

The local effects are expressive of the secretory reaction of the bronchial tree; this, in certain conditions, may lead to a more or less extensive obliteration of the air-passages and give extreme gravity to the prognosis. But the bronchial secretions may also have a marked toxic influence; this is a pathogenic factor that has been too much overlooked. The toxæmia explains the general phenomena, the temperature, and to some extent, the dyspnœa.

Claisse has made some interesting experiments to determine the nature and quality of these toxines, and has worked out the bacteriological problem with considerable success; but the details of these researches may be considered later.

EPIDEMIC INFLUENZA.

In a further report to the English Local Government Board,[1] Dr. Parsons continues the excellent work on the subject of epidemic influenza begun two years ago. This report contains further observations upon the epidemic of influenza of 1889–90, and upon the succeeding epidemics of the spring of 1891 and the winter of 1891–92. It embodies much statistical information upon the incidence of the disease in its fatal form, upon age, sex and locality, and other conditions affecting the epidemic.

The severity of the different epidemics differed much in different localities. "No circumstances of soil, climate, occupation or sanitary condition afforded any satisfactory explanation of these differing incidences."

The death-rate from influenza was greatest in the rural districts. In London and 90 large towns it varied from 0.52 to 0.58 per 1,000 living, while in 192 rural districts the rate was 0.73 per 1,000. This is probably due to the fact that "the death-rate from influenza increases with advancing age; and while many of the rural areas have been more or less denuded of young people and adolescents, the old people have remained at home in the villages."

"Further experience goes to confirm the view that influenza is essentially propagated from person to person. Indeed, the evidence which is now forthcoming, tending to show that the disease has followed the lines of human intercourse, so far outweighs any that has been put forward in favor of its being due to 'atmospheric causes,' as to suggest that where these have been accepted as accounting for outbreaks, all the circumstances of the local prevalences in question have not been forthcoming." Dr. Parsons adds: "Similar conclusions have also been arrived at independently by numerous observers in this and in other countries, and the communicability of influenza may be said to be now very generally, though not quite universally, accepted." Several instances are cited in confirmation of this view, and too little weight is given to the other side of the problem.

Several interesting questions are considered in the report, such as — (1) the existence of media in which the contagion of influenza can live or multiply outside the body. (2) What are the circumstances which promote its spread at one time, and not at another? (3) As to immunity and the *individual.* (4) Does an epidemic in any way protect a *community* against recurrence? (5) As to the effect of locality or occupation. Mr. Alfred Fletcher, the successor of Dr. Angus Smith as inspector of alkali works presents some statistics which appear to show that workmen employed in such works are measurably exempt from influenza. (6) The relation of pneumonia to influenza. (7) Length of the period of infectiousness. (8) Clinical features of epidemics.

With reference to prophylaxis, the report discusses the practicability of isolation and of school closure and concludes that while instances show the value of isolation, it would be quite difficult to enforce it in practice. As to notification, "in the opinion of many able and thoughtful medical officers of health, the advantages to be gained from compulsory notification of influenza would not, in most districts, be commensurate with its cost."

The volume also contains Dr. Klein's report upon the clinical and pathological aspects of the disease. The materials for the investigation were mainly supplied from the Kensington Infirmary and from St. Bartholomew's Hospital. The following conclusions are presented:

"The researches now recorded have afforded certain affirmative results as to the microphytic elements of influenza; they are such as may be presumed to be constant in influenza; and they are in full agreement with the results obtained by Pfeiffer and Kitasato. Our investigations have shown a bacillus having peculiar morphological and cultural characters, always abundantly present in the bronchial secretion of patients suffering with influenza, diminishing in numbers as the disease abates, and disappearing when it comes to an end. The same species of bacillus is furthermore found occasionally in the blood of acute influenza; not very often indeed, but often enough to invalidate a suggestion that its appearance there is a matter of accident."

In referring to the German and other authorities upon the same subject, Dr. Klein does not consider the evidence as quite complete, and further says "what we now most specially want, for the demonstration of this bacillus as the materies of influenza, is evidence that this particular microbe does not occur in any other disease than influenza; and Pfeiffer and Kitasato would go so far as to assert this as a fact. Our own researches have not led us to doubt it; and we have only to give the obvious caution that not sufficient time has yet elapsed since Pfeiffer's discovery to establish their assertion, and perhaps we are as yet hardly safe in denying the presence of his bacillus elsewhere than in influenza."

The report is illustrated with photographs of human blood, bronchial sputum, influenza bacilli and cultures.

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FOOT-BALL.

Mud will soon give way to frost, and the foot-ball season for this year is drawing to a close. By the end of another week the three principal events of the season will have been decided, and the Sunday paper will have to seek other portraits for its gallery than those of frowsy youths in sweaters.

Of the growing popularity of the game among players and spectators there can be no question. The male child now emerges from swaddling clothes into quilted and padded knickerbockers, and lays aside his rattle for a pig skin. The greater the number of seats provided for those who desire to assist as onlookers at the chief matches of the year, the greater seems to be the competition for them. The struggle for seats at the Harvard-Yale and Harvard-Pennsylvania games is almost as keen as will be the struggle for the score between the opposing elevens. Fashion unquestionably has much to do with this, and foot-ball is now the fashion. But behind the fashion of the thing, there is as unquestionably a genuine zeal for the sport itself, certainly among the players, and in a lesser measure among the spectators.

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[1] Further Report and Papers on Epidemic Influenza 1889-92. By H. Franklin Parsons, M.D., and Dr. Klein. London: Eyre & Spottiswoode. 1893. A report of the Local Government Board.

The game is not without its risks, and even its fatalities — as is unhappily illustrated elsewhere in this very issue of the Journal. It may be made a medium for brutality, for betting, and for trickery, and has been such at times. The same, however, may be said of many, if not of all manly sports. That is an argument for regulating, not for abandoning them. Foot-ball as now played is not a good game for most boys below, or for most men above, a certain age. The game requires much, and develops much besides mere brute force. There is something to be had from contesting sports in the open air which mere gymnasium exercises, however skilfully conducted, cannot give. The blood which is sent tingling through the body need not be bad blood, and the contestants can and should so bear themselves that respect and not hatred for opponents is engendered.

We have no prejudices against fencing because it comes to us from France, against golf because its home is in Scotland, nor against polo, hunting and foot-ball because they are adopted from England. A sport which has nothing more than fashion to recommend it will not hold its own. Though foot-ball as now played really seems to us a poor game for a large number of spectators, it is, we believe, not likely soon to lose its hold upon its votaries, and that because it has many intrinsic merits as a manly sport.

We ourselves prefer the golf stick or the tennis racket, but we are forced to admit that we are quite beyond a certain age, and we are also willing to admit that there was a time when wallowing in the mud, even as a substitute, would not have been thought inglorious.

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MEDICAL NOTES.

Beri-Beri at Philadelphia. — The steamer *Lenark*, from Java, which arrived at Philadelphia November 3d, brought eight of her crew ill with well-marked beri-beri. Thirty-one other men have been held under quarantine observation.

Virchow's Successor. — Professor Weinhold has been elected Rector of the University of Berlin to succeed Virchow, whose term ended at the beginning of the present semester. The new Rector at once appointed Virchow to be a member of the University Senate.

Fatal Foot-ball Accidents. — At a game of foot-ball between high-school boys in Adrian, O., last week, one of the players was killed by having his cervical spine dislocated while "downing" the ball. This is the fourth fatal injury at foot-ball this year, three other players having had their necks broken and one his skull fractured. A sixth, probably fatal case, occurred in Farmington, Conn., on the 20th inst., in a game between the Yale Senior-Class team and the Farmington Athletic Club. One of the players on the latter team had his neck broken, and is unconscious, and totally paralyzed below the seventh vertebra. In England the deaths from injuries received in the game during the season from September 1st to April 1st, are said to have averaged twenty-four in each of the last three years.

Chicago Pasteur Institute. — Since the inauguration of the Chicago Pasteur Institute, July 2, 1890, 302 persons have been treated by preventive inoculation against hydrophobia; 104 were bitten by animals recognized and ascertained to be rabid by the experimental proof made in the laboratory, or by the death of other persons or animals bitten by the same animal; 126 were bitten by animals recognized to be rabid by the symptoms of the disease shown during life, and 72 by animals strongly suspected to be rabid; 282 persons were bitten by dogs, 7 by horses, 7 by cats, 3 by skunks, 2 by wolves, 1 by a mule. The persons treated came from the following States: 185 from Illinois, 32 from Iowa, 23 from Indiana, 21 from Kansas, 9 from Ohio, 5 from Missouri, 5 from Arizona, 4 from Minnesota, 4 from Michigan, 4 from Louisiana, 3 from Tennessee, 3 from Kentucky, 2 from Texas, 1 from Wisconsin, 1 from South Dakota. One death was reported among the patients treated, thus giving a mortality of only 0.33 per cent.

BOSTON AND NEW ENGLAND.

A Reception to Dr. Holmes. — The College Club of Boston gave a reception to Dr. Oliver Wendell Holmes last Saturday afternoon. Mrs. L. S. Davis, the president of the club, assisted by Mrs. Alice Freeman Palmer, received the guests. About five hundred persons were presented to Dr. Holmes, who received them seated in a laurel-decorated chair in the parlor, under a bower of palms. During the evening Dr. Holmes recited "The Last Leaf," "Dorothy Q," and "The Chambered Nautilus."

Free Vaccination in Boston. — In view of the recent outbreak of small-pox in Boston, the Board of Health has issued the following notice: "Vaccination without charge will be given at the Shurtleff Schoolhouse on Dorchester Street and the Mather Schoolhouse, Broadway, both in South Boston, from 4 to 5 p. m. and 7 to 8 p. m., every day this week. The office of the Chardon Street building will be open daily, as usual, for free vaccination, from 10 to 12 a. m."

Gas Suffocation in Boston. — Much complaint is made in Boston concerning the variable pressure of the gas-supply, which makes it unsafe to leave a light turned low. Many narrow escapes from suffocation have been reported, and it is suggested that some of the many recent "suicides" by gas poisoning may have been entirely unplanned and accidental.

Small-Pox in Boston. — Three new cases of small-pox have occurred in Boston the last week, one being in South Boston and two in Roxbury. All of the patients at the hospital are doing well. The *Catalonia* which brought the disease here, returned to port on the 19th from Liverpool. On the voyage back to England one case of small-pox occurred, and the boat was fumigated at Liverpool. No cases occurred on the last voyage, but the vessel will again be fumigated here. On arrival, all of the passengers who did not show new vaccination marks were re-vaccinated.

A Gift to a Lowell Hospital. — In addition to previous liberal donations, Mr. Thomas Downing has given St. John's Hospital, Lowell, $1,000.

Scarlet Fever at Amesbury. — The epidemic of scarlet fever at Amesbury, Mass., still continues, there being at present over forty cases in the town. Since last week, eight more schools have been ordered closed, making ten in all. The death-rate has not been excessive as yet.

NEW YORK.

Academy of Medicine and the New York Infant Asylum. — At a regular meeting of the New York Academy of Medicine, held November 16th, Dr. John A. Wyeth introduced a series of resolutions pledging the approval by the Academy of the protest and resignation of the Medical Board of the New York Infant Asylum in consequence of the dismissal from its service of Dr. Robert Milbank. In support of them, he stated that within a few months' past, Dr. Milbank, a reputable physician and a Fellow of the Academy, who was one of the visiting staff of the Infant Asylum, had, after years of faithful service, been dismissed by the President of the Board of Managers, and that another physician had been appointed to fill his place. No charges of any character were preferred against him, and there was no question as to his qualifications for the performance of his duties. The Medical Board, while held responsible for the welfare of the inmates of the institution, were not consulted, either as to the dismissal of Dr. Millbank or the appointment of his successor. They protested against this action of the managers, and, being informed that if they did not like it they could resign, did resign. After an animated discussion, the resolutions were finally tabled. At the same meeting resolutions were adopted which called attention to the inefficiency of the present coroner system, and requested the Constitutional Convention, which is to meet at Albany, in April next, to consider the propriety of abolishing the office, and suggesting the enactment of laws providing for a system of medical examiners such as now exists in the State of Massachusetts.

The Leahe and Watts Orphan Asylum. — At the semi-centennial celebration of the Leahe and Watts Orphan Asylum, held at the new building of the institution near Yonkers, on November 16th, the Rev. Dr. Morgan Dix, the President of the Board of Managers, announced that a separate hospital building would be erected in order to properly guard against the spread of any contagious disease among the children.

Care of Dependent Children.—November 15th and 16th a conference on the care of dependent and delinquent children, was held under the auspices of the State Charities Aid Association. During the course of the proceedings Mrs. M. C. Dumphy, superintendent of the city institutions for children on Randall's Island, advocated the employment of efficient hired attendants to take the place of the "work-house women" now assigned there, as she believed the association of the children with such women demoralizing. Dr. Stanton Cort, of the University Settlement, advised the abolition of rear tenements, which now give rise to so many unsanitary conditions, and the converting of the centre of city blocks in poor localities into parks and play-grounds.

Small-Pox. — During the past week cases of small-pox have occurred in the Tombs prison and in Roosevelt Hospital, and a large number of persons were exposed to the contagion in each instance before the patients were removed. The disease is less prevalent, however, than it was a few weeks since, and the Board of Health is carrying on the work of vaccination on a more general scale than ever before.

Mortality. — During the week ending November 11th, the death-rate of the city was the smallest ever recorded. The exceptionally fine weather for this season of the year, as well as the unusually clean condition of the streets, is no doubt in some manner accountable for this happy result. The number of deaths reported for the week was 641, which represents an annual death-rate of only 17.46 per thousand of the estimated population, against 18.40 the week previous. The official sanitary report states that if it had not been for the prevalence of diphtheria, the rate would have gone below 17 per thousand, fixed by Dr. Farr as the rate for very healthy country districts. During the week there were 53 deaths from diphtheria.

Miscellany.

"A CHESTERFIELD GORILLA."

There recently died in a Berlin menagerie a gorilla of great elegance of manner. Its habits of life were regular and most precise, and the account given of its daily occupations reads much like the court bulletins of the Grand Monarch. It was accustomed, it is said, to wake at eight o'clock in the morning and take a glass of milk. Certainly this conformity of time, rather than daylight, marked an advance from the animal to the conventionality of man. It is not said whether the milk was brought to the gorilla or called for. The account goes on:

"At nine o'clock it made its toilet with as much care as a civilized man, and ate its breakfast a few minutes afterward. This consisted of two Vienna loaves, Hamburg smoked meat, cheese and white beer.

"Another bit of refinement in preferring a light beer for breakfast, especially after a careful toilet.

"At one o'clock in the afternoon it had a cup of chicken soup with carrot, rice and potatoes and an egg. Its evening meal consisted of fruits, bread and butter, and a cup of tea."

It will be noticed that the chief attentions of this gorilla were gastronomic; but the evident care bestowed upon the selection of its viands was truly civilized and human. It is not stated what was the cause of death. It is to be hoped it was not the inadvertent use of a dark beer or a hasty toilet.

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TOXICITY OF THE BLOOD OF THE COMMON TOAD.

MM. Phisalix and Bertand[1] have found in the blood of toads certain active principles having the same poisonous effect upon frogs and mammals as the venom secreted by the cutaneous and parotid glands of toads. When injected into frogs they produce paralysis, beginning in the hind limbs, slowing and arrest of the heart, and contraction of the pupil. They are produced by an internal secretion of the cutaneous glands, and to this internal secretion must be attributed the immunity of toads, as in venomous reptiles, for their own poison.

◆

THERAPEUTIC NOTES.

Naphthalene as a Tænifuge. — The following dose of naphthalene has been found by several observers in the *Revue Médicale de Louvain* an excellent tænifuge and free from any toxic effect.

℞ Napthalene . . . . . [illegible] grammes.
[illegible] . . . . 1[illegible] grammes.
Ol. bergamoti . . . . . 1[illegible] drops. M.
Sig. [illegible] fasting.

A single dose is usually sufficient for children. For adults the naphthalene is best given in a cachet containing one gramme and followed at once by 30 grammes of oil. Crequy recommends a combination of calomel and malefern as being with him the most successful.

℞ Calomel . . . . [illegible] grammes.
Extract of malefern . . . . 8 grammes.
T[illegible] sixteen capsules, one to be taken every [illegible] minutes.

Treatment of Tonsillitis. — Fabre at the recent Congress at Besancon reported forty cases of tonsillitis successfully treated by inhalation of hot air charged with creasote and carbolic acid. The cough was at once relieved, and a resolution obtained in two days. In ten cases of threatened suppuration the painful deglutition was relieved after an inhalation for half an hour. The softened areas disappeared on the second inhalation. The mixture used was beech-wood creasote, five grammes, and crystallized carbolic acid, fifty centigrammes. In the only case of diphtheritic tonsillitis thus treated, the tonsils which were covered with thick false membrane became after three inhalations perfectly clean. The mucous membrane soon recovered its normal appearance, and the glandular swelling rapidly diminished. In this case the amount of carbolic acid was increased to one gramme.

Correspondence.

MASSACHUSETTS MEDICAL SOCIETY.

4[illegible] West Chester Park, Boston,
November 1[illegible], 1893.

Mr. Editor: — If any of your readers will assist me by furnishing any of the names, the initials of which are given in the following list, I shall esteem it a favor. The gentlemen named were residents of Boston when they joined the Society.

Yours very truly,
Edward Jacob Forster, M.D.,
Librarian Mass. Med. Society.

Admitted
1842 Abbot, Joseph S.
18[illegible] Bartlett, Erastus H., d. 18[illegible]
1846 Bartlett, Joseph [illegible]
1849 Butler, Alexander S.
1848 Cole, Larkin Baker.
1839 Collyer, Robert H.
1855 Durgin, Elijah S., d. 1861
18[illegible] Eaton, Albert [illegible]
1871 Follett, S. F.
1810 Foster, Josiah D., d. 1812
1851 Gleason, E. W., d. 1853
18[illegible] Ha[illegible], James B., d. 18[illegible]
184[illegible] Hammatt, George A.
18[illegible] Howard, John C., d. 18[illegible]
1856 Kob, Charles F.

Admitted
18[illegible] Lane, Alfred A., d. 18[illegible]
18[illegible] Lane, George W., d. 1833
18[illegible] Ma[illegible], Alexander B.
1842 Mignault, Louis M. F., d. 1869
1847 Molloy, Patrick E.
18[illegible] P[illegible], A. [illegible]
18[illegible] P[illegible], Samuel E., d. 18[illegible]
1846 Pickett, George B.
1858 Pike, Horace G.
18[illegible] Pratt, Charles B.
18[illegible] [illegible]
18[illegible] Sp[illegible], Charles W.
18[illegible] W[illegible], Sh[illegible] S., d. 18[illegible]
18[illegible] W[illegible], S. F.

RECORD OF MORTALITY

For the Week ending Saturday, November 11, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	641	219	[illegible]	15.04	[illegible]	[illegible]	9.60
Chicago	1,438,000					—	—	—
Philadelphia	1,115,562	412	[illegible]	[illegible]	13.92	2.88	.96	9.60
Brooklyn	978,394				—	—	—	—
St. Louis	[illegible]			—	—			—
Boston	[illegible]	[illegible]	[illegible]	[illegible]	14.58	2.16	1.64	4.32
Baltimore	500,000					—	—	—
Washington	308,431	[illegible]	30	14.17	[illegible]	—	[illegible]	4.36
Cincinnati	305,000					—	—	—
Cleveland	[illegible]	[illegible]	[illegible]	15.36	12.48	[illegible]	[illegible]	7.78
Pittsburg	[illegible]							—
Milwaukee	[illegible]	78	34	23.04	[illegible]	[illegible]	[illegible]	10.24
Nashville	[illegible]		[illegible]	[illegible]	24.00	[illegible]	—	[illegible]
Charleston	[illegible]	[illegible]	[illegible]	[illegible]	2.04	[illegible]	[illegible]	—
Portland	40,000	11	[illegible]			—		—
Worcester	96,217	[illegible]		21.60	2.70	—	2.70	10.80
Fall River	87,411	[illegible]	12	—	19.38	[illegible]		—
Lowell	87,191	34	14	—	17.64	[illegible]	2.94	[illegible]
Cambridge	77,100	[illegible]	[illegible]	19.25	—	[illegible]	—	3.85
Lynn	[illegible]	[illegible]	[illegible]	[illegible]	—	—		17.40
Springfield	48,684	[illegible]		10.00	10.00			—
Lawrence	48,355			—		—	—	—
New Bedford	[illegible]	22	[illegible]	9.10	4.55	[illegible]	[illegible]	—
Holyoke	[illegible]			—		—		—
Salem	[illegible]	[illegible]		—		—		—
Brockton	[illegible]	[illegible]		—		—		—
Haverhill	31,396	8	2	12.50	[illegible]	—	—	—
Chelsea	30,264	[illegible]	1			—		—
Malden	29,394	[illegible]	[illegible]	6.25	[illegible]	—		—
Newton	27,556					—		—
Fitchburg	27,146	5	1	20.00	—	—	—	[illegible]
Taunton	26,972	[illegible]	1	6.66	[illegible]	[illegible]	—	
Gloucester	26,688	—	—			—		
Waltham	22,058	[illegible]	2	[illegible]				20.00
Quincy	[illegible]	[illegible]	1	[illegible]		[illegible]	[illegible]	—
Pittsfield	18,802		1		—	—		—
Everett	[illegible]	[illegible]		—	[illegible]	—		—
Northampton	16,331	[illegible]		—	—	—		—
Newburyport	[illegible]	2	1	[illegible]		—		[illegible]
[illegible]	10,920	2	—			—		—

Deaths reported [illegible]; principal infectious diseases [illegible] croup, diarrheal diseases, [illegible] 2[illegible], [illegible] croup 147, [illegible] 2[illegible], cerebro-spinal meningitis 13, whooping-cough 10, measles 7, malarial fever 2, small-pox 2.

From scarlet fever Philadelphia 8, Boston 5, New York 3,

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[1] Archives de Physiol. Norm. et Path[illegible]

Milwaukee, Cambridge, Lynn, Somerville and Malden 1 each. From cerebro-spinal meningitis New York 5, Washington, Cleveland and Worcester 2 each, Boston and Somerville 1 each. From whooping-cough Philadelphia 3, New York 2, Boston, Worcester, Lowell, Cambridge and Haverhill 1 each. From measles New York 4, Philadelphia, Milwaukee and Springfield 1 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending November 4th, the death-rate was 20.2. Deaths reported 4,005: acute diseases of the respiratory organs (London) 369, diphtheria 108, scarlet fever 81, diarrhœa 74, fever 70, whooping-cough 61, measles 57, small-pox (Birmingham 4, London, Bristol and Bradford 1 each) 7.

The death-rates ranged from 9.6 in Croydon to 26.7 in Hull; Birmingham 22.7, Bradford 20.5, Bristol 14.6, Gateshead 15.5, Leeds 17.3, Leicester 15.0, Liverpool 26.0, London 20.5, Manchester 20.0, Newcastle-on-Tyne 20.9, Nottingham 15.1, Portsmouth 14.6, Sheffield 20.1, Swansea 16.1, West Ham 19.7.

METEOROLOGICAL RECORD,

For the week ending November 11, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches†
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 5	30.25	40	45	35	82	77	80	N.	N.E.	13	3	C.	C.	.22
M.. 6	30.28	46	52	37	80	53	66	S.W.	W.	13	8	C.	C.	
T.. 7	30.49	42	48	36	59	71	65	N.	S.E	10	6	C.	C.	
W.. 8	30.30	44	49	39	70	86	78	W.	S.E.	2	3	F.	O	
T.. 9	30.06	48	54	41	70	67	68	N.W.	N.E.	5	15	O.	C.	
F..10	30.36	34	39	28	63	72	68	N.	N.E.	18	2	C.	C.	
S..11	30.41	40	51	30	75	73	74	W.	N.E.	12	7	C.	C.	
☞	30.31		40	35			71							.22

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 11, 1893, TO NOVEMBER 17, 1893.

The leave of absence granted **CAPTAIN HENRY P. BIRMINGHAM**, assistant surgeon, U. S. A., is further extended one month.

Leave of absence for one month, is granted **FIRST-LIEUT. CHARLES E. B. FLAGG**, assistant surgeon, with permission to apply for an extension of twenty days.

LIEUT.-COL. CHARLES R. GREENLEAF, deputy surgeon-general, is relieved from duty in the office of the Surgeon of the Army, and will repair to San Francisco, Cal., and assume charge of the medical supply depot in that city, relieving **LIEUT.-COL. JOSEPH P. WRIGHT**, deputy surgeon-general, who, upon being thus relieved, will repair to St. Louis, Mo., and assume charge of the medical supply depot in that city.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday, December 6th, at 8 o'clock, P. M., by Dr. M. H. Richardson. Subject, "Abdominal Emergencies." Physicians are cordially invited.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, November 27, 1893, at 8 o'clock, P. M.

Dr. C. J. Blake: "Fixation of the Stapes," illustrated by lantern slides. Discussion opened by Dr. J. O. Green.

Dr. Paul Thorndike: "Notes on Phosphaturia." Discussion opened by Prof. E. S Wood, M.D.

Members are kindly requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., *Secretary.*

RESIGNATION.

C. S. GORDON, M.D., of Portland, Me., has resigned the Professorship of Gynecology in the College of Physicians and Surgeons of Boston.

BOSTON MEDICO-LEGAL SOCIETY.

RESOLUTIONS ON THE DEATH OF DR. CARTER.

At the meeting of the Boston Medico-Psychological Society held October 19th, a committee was appointed to prepare resolutions upon the death of Dr. Cyrus F. Carter. This committee presented the following memorial:

"The Boston Medico-Psychological Society feel that in the death of Cyrus Faulkner Carter they have lost a valued and beloved member. Dying at the early age of thirty-two years, when it seemed that his life-work had just begun, by his generous nature, by his faithfulness and by his skill, he had endeared himself to all with whom he came in contact.

"Death has taken from the Society and from the medical profession a man of great attainments, of rare promise, respected, loved."

RECENT DEATHS.

HOWLAND HOLMES, M.D., M.M.S.S., died at Lexington, November 16th, aged seventy-eight years. He graduated from Harvard College in the class of 1843 and from the Harvard Medical School in 1848. He had been for many years prominent in all town affairs at Lexington.

CHARLES WARRINGTON EARLE, M.D., President of the Board of Directors of the College of Physicians and Surgeons and of the Women's Medical College of Chicago, died in Chicago, November 19th, aged forty-eight years.

JOHN FRISSELL, M.D., died at Wheeling, West Virginia, November 16th, aged eighty-four years. He was one of the oldest alumni of Williams College, having graduated in the class of 1831. After receiving his M.D. in 1834 he moved to Wheeling, where he has since been one of the best known surgeons.

BOOKS AND PAMPHLETS RECEIVED.

Connecticut State Medical Directory, Containing a carefully prepared list of Physicians, Dentists and Druggists, together with Colleges, Hospitals, Medical Associations and Societies throughout the State. Danbury, Conn.: The Danbury Medical Printing Co. 1893.

A Text-Book of Physiology. By M. Foster, M.A., M.D., LL.D., F.R.S., Professor of Physiology in the University of Cambridge and Fellow of Trinity College, Cambridge. With illustrations. Sixth edition. Part I comprising Book I. Blood, the Tissues of Movement, the Vascular Mechanism. New York and London: Macmillan & Co. 1893.

Exercise for Pulmonary Invalids. By Charles Denison, A.M., M.D., Professor of Diseases of the Chest and of Climatology, University of Denver; Ex-President of the American Climatological Association. Read before the Congress of Medico-Climatology of World's Fair Congress Auxiliary, June 1, 1893. Denver, Colo.: Chain & Hardy. 1893.

Annual of the Universal Medical Sciences: A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M.D., and seventy associate editors. Illustrated with chromolithographs, engravings and maps. Five volumes. Philadelphia, New York, Chicago and London: The F. A. Davis Co. 1893.

Healthy Hospitals; Observations on some Points Connected with Hospital Construction. By Sir Douglas Galton, Late Royal Engineer, K.C.B., Hon. D.C.L., LL.D., F.R.S., etc., Assistant Inspector-General of Fortifications; Director of Public Works and Buildings, etc. With illustrations. Oxford, at the Clarendon Press. London: Henry Froude & H. K. Lewis. 1893.

A System of Genito-Urinary Diseases, Syphilology and Dermatology. By various authors. Edited by Prince A. Morrow, A.M., M.D., Clinical Professor of Genito-Urinary Diseases; Formerly Lecturer on Dermatology in the University of the City of New York: Surgeon to Charity Hospital. With illustrations. In three volumes. Volume II. Syphilology. New York: D. Appleton & Co. 1893.

The Students' Dictionary of Medicine and the Allied Sciences, Comprising the Pronunciation, Derivation and full Explanation of Medical Terms, together with much Collateral Descriptive Matter, Numerous Tables, etc. By Alexander Duane, M.D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. Philadelphia: Lea Brothers & Co. 1893.

Rules to be Followed in the Effort to Prevent Mural Abscesses, Abdominal Sinuses and Ventral Herniæ after Laparotomy. The Importance of Understanding the Function of the Levator and Ani Muscle in the Treatment of Injuries of the Floor of the Vagina. The Diagnosis and Treatment of Intestinal Obstructions, and the Management of Greatly Distended Intestines during Laparotomy. Secondary Hæmorrhage after Ovariotomy: Can we Prevent It? The Prevention and Management of Pelvic Inflammation in Puerperal Women. Counter-Drainage after Cœliotomy. By Horace Tracy Hanks, M.D., New York. Reprints. 1891–92–93.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XX

ANEURISMS (CONTINUED).

An aneurism is defined as a sac containing blood which communicates with an artery. We spoke of the mode of its formation in the last lecture. I said that coagulation of blood in the sac with successive layers of fibrin and clot was nature's method of trying to cure it. I should add, also, that nature throws out another safeguard on the outer side of the sac as the aneurism progresses. The sac of the true aneurism, owing to the ulceration of the inner coat of the artery and the giving way of the middle coat, finally consists wholly of the outer coat of the vessel. Its sac pulsates and stretches and throbs with every beat of the heart; and of course impinges on all the neighboring tissues, and gradually absorbs them. In doing this it cannot fail to light up an inflammation in the connective tissue round about; and, accordingly, we have a thickening of the sac on the outside produced by an inflammatory process in the connective tissue around it. Thus, then, we have nature trying to establish a series of buffers inside to check the flow of blood inside the sac; and on the outside, by the inflammatory products of the connective tissue, resisting the pulsation within. In spite of all this, in a large aneurism, where it has got well under way, the disease goes on and the force, like all hydraulic pressure, is irresistible and absorbs everything before it. Curiously enough it is said that cartilage is a tissue which resists the longest. Bones yield before cartilages; soft tissue, of course, very rapidly.

The pressure on muscles and on veins and on nerves gives rise to great interference with the circulation of the part; and in concealed aneurisms in the deeper parts of the body as in the trunk, usually gives rise to great pain which is ascribed to rheumatism, to neuralgia, to various causes, for a long time before the true trouble becomes apparent. The bones are absorbed; the bodies of the vertebræ are eaten off; the sternum is eaten through. An aneurism presents itself at some unexpected point where previously there was nothing but bone and hard tissue, and then it goes on pulsating and thinning.

Its usual duration is said to be from two to four years. It generally terminates fatally, and usually by rupture. Occasionally it undergoes an inflammatory process and suppurates; and, rarely, in that way cures itself. In other words, by the time the sac bursts, so great a mass of protective lymph has been thrown up around it that the discharge is mostly of pus; shrinking takes place, and occasionally the aneurism is cured. More often, however, it bursts, with a fatal result.

The arch of the aorta seems the most subject to aneurism, and next to that the three or four larger vessels. The popliteal is a favorite place, next to that the femoral, then the carotid. The popliteal, apparently, is a favorite site for aneurism on account of the constant flexion and extension to which the vessel is subjected in the movement of the leg; and if a change begins, as it often does, by atheromatous deposits in the artery, there is the place where it is very likely to stretch and bend and be forced to give way, sooner than in other parts of the body. This is the true aneurism.

There are other varieties. In the first place, it is quite evident that we may at any time have a traumatic aneurism. This may be produced by a gun-shot wound by a ball. It is not necessary that the ball should pierce the artery to give rise to an aneurism, but run across, and wound and bruise its coats. A cut or stab will give rise to an aneurism. The blood is poured out into the cellular tissue. A species of connective-tissue sac is formed about this blood. It slowly forces its way into all the interspaces of the part, as the thigh, until finally the fascia lata itself may become the sac of the traumatic aneurism; the patient still surviving, on account of the slow daily and weekly loss of blood not affecting him so rapidly as a sudden gush from the wound; and in some of these cases in the false sac of a traumatic aneurism, several pints of coagula have been thrown out.

Then there is the dissecting aneurism, in which the dilatation and the leaking of the blood takes place between the coats of the vessel, and runs along its course until it finally makes a long oblong sac between the outer and middle coats of the artery, and dissects often for a good ways into the tissues.

Then there are other forms where an artery and vein happen to be wounded together, and arterial blood has been poured into the vein. This occurred frequently in former times when venesection from the vein at the bend of the elbow was so common. The vein overlying the artery on the inner side of the arm, frequently in puncturing the vein the artery was punctured. A varicose aneurism was formed between the two, and the current ran together. In these cases a curious pulsation is heard; a whirring sound; the limb is swollen and enfeebled. There is more or less pain. The collateral vessels all become very much enlarged; but this process may go on for a good many years without leading to a fatal result.

What are the signs of aneurism?

Obviously a pulsating tumor; but this pulsation must be of a peculiar kind, and, as a rule, accompanied by a peculiar sound, to make it sure that it is an aneurism. The pulsation must be expansile; not merely beating up, but dilating. The sound is like the placental souffle, and synchronous with the pulsation of the heart. All tumors, however, which pulsate in this curious manner, and have a bruit, are not aneurisms, inasmuch as some varieties of soft erectile tumors and some of the softer forms of cancer pulsate and give a bruit in this same way; so that we must judge somewhat by the shape and size of the tumor; the history of the case; its effect on the circulation of the parts below, etc., to decide whether it is an aneurism or not. Every lump that is elevated on the artery and appears to give the sign of pulsation also, may not be an aneurism; because small solid tumors like adenoids, in which the glands, especially of the femoral triangle, overlying an artery, are lifted in pulsation, are frequently mistaken for aneurism. That is also true in the neck, where an enlarged lymphatic, particularly if located opposite the bifurcation of the external and internal carotid, is frequently thrown up with a marked pulsation, and mistaken for carotid aneurism.

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[1] These are stenographic lectures printed from the stenographer's reports. Verbal [illegible] made [illegible] changes. They were delivered to the third and fourth classes as part of the regular course.

The other more reliable signs of aneurism are these: first, that compression of the main trunk of the vessel above the suspected point stops the pulsation in the aneurism, (that, of course, would go without saying); second, that compression of the vessel below the suspected point always increases the pulsation in the sac of the aneurism; and, third, that the natural pulse in the vessels below the aneurism is enfeebled and sometimes lost.

Extensive pulsation in the site of a great vessel; a noise heard like the placental souffle; the ability to check the pulsation and the noise by compressing the vessel above; increase in the noise and pulsation by compressing the vessel below; and an enfeebled pulsation in the vessels supplying blood to the parts further down on the limb, are classical signs of aneurism. It is quite easy to find these in the popliteal, not difficult in the femoral, but in any portion of the abdominal or thoracic aorta these signs must mainly be wanting. They are out of sight, out of reach, perhaps may not affect particularly the circulation in the two legs below. The pulsation of the abdominal aorta itself, in the feeble, anæmic, emaciated person, may frequently be mistaken for aneurism when no aneurism whatever exists. You will find in the very sick and enfeebled, whose abdomen is retracted with emaciation, that by putting the hand just above the umbilicus in the central line and pressing moderately, you get quite a forcible and steady pulsation synchronous with the beat of the heart; this is simply the overaction of anæmia. So that all the signs may fail in the case of an internal aneurism, except possibly you may hear the bruit, or judge of what is taking place by the long-continued pain which it produces.

How shall an aneurism be treated?

There are two modes. We might apply both measures to either form of aneurism in the leg or arm, but we could not apply operative measures to aneurism inside the thorax and abdomen. One class of measures are called constitutional, and the other operative. The constitutional measures are adapted only for the treatment of those aneurisms which are beyond the surgeon's reach, about the heart, in the thorax, in the abdomen.

The local or operative measures, of course, are adapted to all other classes of aneurisms, in the limbs and neck, where the vessels can be got at.

Valsalva, long ago, and Tufnel proposed certain methods for treating aneurism constitutionally, which are not without their effect; and indeed, as this is the only resource in these aneurisms inside the body, we are forced to adopt this treatment or none at all; and we may safely say, I think, to the patient, that if the Tufnel or Valsalva treatment does not cure, at any rate it relieves pain a good deal; prolongs life; renders existence comfortable; and postpones the day of the final rupture of the aneurism.

These constitutional measures consist of two things — first, trying to reduce the vigor and celerity of the current of blood in the sac by keeping the patient perfectly still in the horizontal position and allowing him to make no effort whatever; and also to give internally medicines which will check and slow the pulsations of the heart to a certain degree, such as digitalis, veratrum viride and strophanthus. The use of these medicines to slow the current, and absolute rest on the part of the patient, tend to quiet down the cardiac circulation; to diminish the number of throbs that have got to go through the aneurismal sac day and night; to reduce the distensile force of the blood; to favor the formation of clots, and check the growth of the aneurism. There is no doubt that a great deal may be effected in this way.

Anything that diminishes the throbbing and the force of the pulsation, diminishes in the same degree, pain, which is, as a rule, due to pressure on sensitive neighboring parts. A good deal is effected by selecting the diet of the patient, and giving food only of that kind which will be sufficient to sustain life without stimulating the arterial circulation. A reduced diet, not starvation, but reduced; the avoidance of all stimulants of every kind; perfect rest in the horizontal position; remedies to reduce the action of the heart; and, in addition to this, Tufnel thinks he got a good deal of benefit from large doses of iodide of potash. The bromides have been used also with some effect. In this way an aneurism of the arch of the aorta, or the thoracic or abdominal aorta, or aneurism of the innominate, which are beyond reach, may be prolonged and quieted; and the patients may be kept going several years. If they are content to lead such a life, reclining in bed, pulsation will be brought to its lowest ebb, and occasionally cures have been effected. Occasionally spontaneous cures have occurred in aneurism without any treatment whatever.

Now as to the treatment of those aneurisms which are in the limbs. It is what is termed operative; but it is not of necessity the using of the knife. The number of modes of attacking these aneurisms that have been proposed is very great, and I will briefly run them over.

Incision, ligation, compression, acupressure, flexion, manipulation, galvano-puncture and the introduction of solid substances into the sac.

Antyllus, far back in Grecian times, attacked aneurisms boldly by opening the sac and seizing the vessels where they entered and emerged. This was done without ether and without antiseptics, and with almost none of the assistance that we have now. He saved a good many cases; and was a strong advocate of this method of treatment. The incision was made boldly through the skin. An assistant seized the artery above. The artery was tied at its entrance into the sac, and then the point of exit sought and the artery tied where it left the sac. The sac shrivelled up; slight suppuration took place. If the ligatures ulcerated out without subsequent hæmorrhage, the patient recovered. Unfortunately it was found, that the same condition of the artery which made the sac often lead to incomplete healing of the ligature. Secondary hæmorrhage took place in a good many cases.

The next mode of treatment was introduced by John Hunter, and consisted in tying the artery to control the aneurism at a distance from the sac, where it was healthy. He would tie, for a femoral or popliteal aneurism, high up in Scarpa's triangle, high up in the groin; and he would tie, for instance, for an aneurism of the radial, high towards the elbow; tying at a distance from the sac, between the sac and the heart. This was the usual method employed when the ligature was used to cure an aneurism — to tie at a distance from the sac, between the sac and the heart; because you are reasonably sure of having an elastic and healthy artery to hold the ligature; which is not the case within an inch, or half an inch of the sac itself. The immediate effect of tying, for instance, the femoral in

Scarpa's triangle, for popliteal aneurism, is to arrest at once the whole circulation in the sac of the aneurism. Speedily great changes took place in the foot and limb below. Curiously enough, owing to some disturbance of the vaso-motor nerves probably, the temperature of the leg and foot rises after the ligature is applied. This is, however, of short duration, and after an hour or two the temperature of the leg and foot begins to fall, and steadily falls below the normal level, owing to the cutting off of the arterial supply of blood. You have a shrunken, pallid, cold foot and limb; severe pain as a rule. The circulation wholly ceases, for the time, on account of the cutting off of the main supply, which has gone through the femoral and the sac.

What possible protection is there on the part of nature to prevent this stoppage from being permanent, and the limb immediately mortifying and sloughing in consequence of the sudden and complete arrest of circulation? We now have take place a marvellous process called collateral circulation. We know the infinite anastomoses in arteries and veins. We know that pulsation extends through numerous branches which interlace, and wind about in every possible direction, in between the muscles and fascia, to supply the different parts of the limb. Some of these branches dilate, and thus is established the collateral circulation. If the femoral is tied at the apex of Scarpa's triangle, it is tied below where the great posterior trunk is given off. This circulates blood through the muscles of the upper part of the thigh. Gradually the smaller vessels dilate; and arteries, hardly appreciable before, become of considerable size. The limb is eventually supplied by a score of little vessels dilated, where it was before supplied by one principal stem. A similar change takes place when the carotid is tied. It takes place also when obstruction of the vessels takes place about the aorta, from the junction of the perforating artery from the sternum, and the superficial epigastric artery, going up in the sheath of the rectus, and forming a large loop of connection; this dilates so that those vessels become of large size, in obstructions in the abdomen.

Obviously success in curing an aneurism by ligature must consist in several things — first, that the current shall be completely cut off in the main artery, which supplies the sac; and sufficiently far away from the sac to prevent the chance of the ligature giving way prematurely on account of the atheromatous and rotten condition of the vessel near the sac itself.

Second, that it must be so tied that sufficient smaller vessels may be left to take up and establish the collateral circulation in time to save the limb below from dying from want of arterial blood. Those two problems have got to be carried out. Now a certain percentage of ligations of large vessels after Hunter's method are successful, and a very considerable percentage fail; not only to cure the aneurism, but to supply the limb. Of what use to cure the aneurism if subsequently you have to amputate the limb? You could have done that before. In a very considerable percentage after the Hunterian method the leg and foot mortify; and this is the great drawback against its performance.

Other methods have been introduced which seek to obstruct the current in the artery, which I will only mention here, inasmuch as they are of the same class, and might as well be mentioned at the same time.

On account of the danger of suppuration and secondary hæmorrhage, Simpson introduced what is called acupressure, to compress the vessel by steel needles. The needle was passed in, and passed under the vessel, and left in the sartorius muscle, for instance; and placed in such a way that it was held between the vessel and the superficial muscles. The artery was merely crossed and compressed by the needle for a limited space of time. Twenty-four to forty-eight hours was ample to secure permanent obstruction of the femoral, in such cases. The needle was slipped out; the muscles fell back into place; but the artery was plugged.

This was a great advance over the old method. This was the first stage towards the better securing of vessels; but we, of course, have got by all that, since we have the antiseptic and organic ligature, made up of structures which either fail to excite suppuration, or are absorbed after the wound closes. Cat-gut ligatures are absorbed. The silk which is prepared antiseptically probably remains; although it is possible it may be finally absorbed. Its fibre is much stronger than is that of the cat-gut, and resists much better. By one of these means we can now tie these large vessels and not expect to have them suppurate, or have any secondary hæmorrhage. That might encourage us to return to the method of Antyllus; and, in fact, it is now occasionally used with success.

With all due respect to these great men, it is evident that all these methods are unphilosophical, in that they do not follow the dictates of nature. Nature tells us to try to slow the current; to try to promote coagulation of blood; and to try to give time for the parts to harden; but not to cut off the blood instantly, for that she never does. Hence the method by digital compression has proved to be the most successful, inasmuch as it imitates more closely the processes of nature herself. Formerly compression was applied rudely by means of a bag of shot, or an apparatus rigged with two or three screws and pads, so that you could push down one on one part, and another on another part of the artery; and these measures were often successful. Occasionally they failed; and they failed, I think, because the mistake was made of applying them too forcibly. It is not necessary to stop the current in curing an aneurism. It is only necessary to slow the current; take off the pressure and then apply it again; and frequently the aneurism can finally be permanently obstructed and stopped by the formation of successive layers of clots. The danger in the earlier times, in the use of compression, was that it was used so forcibly. The hand was never employed; but mechanical means wholly. These mechanical means were applied and kept on as long as it was thought the integrity of the parts would stand it; and the process continued for several days. The result was frequently œdema, sloughing, abscess, cellulitis, such a condition of the limb that afterwards no further operation could be attempted on the vessel or the part, provided this first method of treatment failed. Hence, if you are going to ligature an artery for an aneurism, do not touch it by any other means first; but if you are going to try compression, these measures may be used; but you must not expect a favorable opportunity to ligature the vessel afterwards, because the parts will almost always be so changed by œdema, that the ligature will fail, and secondary hæmorrhage occur, and antiseptic methods prove an entire failure. Either ligature or compress.

If we compress, it is best done by the hands of numerous assistants, and done with the fingers; holding them so as to almost entirely obstruct the current in the artery for a few minutes at a time. The human hands will not keep up pressure on the artery long. They have to be relieved as often as once in ten to fifteen minutes. It is not desirable that absolute stopping of the current should occur for any length of time. It may be held still a little while, and allowed to filter, the effect being carefully watched in the diminished pulsation in the sac; in its thickening; and the temperature of the parts being watched to see if any inflammatory changes are taking place. It is the most philosophical and best way of treating aneurism when it can be done. Obviously it cannot be used as well for the carotid, as for the femoral or axillary. In pressing over the carotid we have to press down upon the pneumogastric nerve. We generally give rise soon to great pain and distress and symptoms of irritability of the whole sympathetic system; consequently consecutive and long-continued pressure on the carotid is not generally well borne. In such a place we have only one other resort, and that is the ligature.

We have by no means finished all these methods that have been tried; and I will not dwell long on them; but will allude to them, in order that we may understand what was done, and why.

There is the method by partial compression. In popliteal aneurism the leg was tied up in extreme flexion. It pains terribly. The patient cannot stand it long. It requires large doses of morphia. The leg has to be tied up and let down. Slow obstruction of the current in the popliteal vessel; plugging of the vessel and stopping of pulsation in the aneurism sometimes in four or five hours, very often in twelve hours. This method in the popliteal region, and at the bend of the elbow, is a very effectual method; and if it is not persisted in too harshly, it is frequently successful. You must be patient. It is a mode of treatment that has not infrequently been successful, and has occasionally been disastrous by being persisted in too long; by making the aneurism slough and leading to secondary hæmorrhage. You cannot appreciate the amount of pain that the patient undergoes when the leg has been tied up in the flexed position for a short time. The pain is intolerable. The leg is occasionally relaxed a little and then brought up again. Large quantities of opium are given. You do not have this pain with gentle manipulation of the fingers on the groin, not to such an extent; though in almost all the immediately compressing methods the patient has to be supported through the treatment by the internal use of opium, to quiet the nervous system, to a moderate degree.

Manipulation. — That would seem to be a very rash method; and yet it was formerly applied; consisting in taking the sac of a large aneurism and kneading it with the fingers so as to force the blood to coagulate. The result was breaking up of clots in the part, travelling of emboli, and usually disastrous results.

Galvano-puncture is pretty much like the injection of astringents into the sac. By that is meant the throwing of the galvanic current through the sac and causing the blood to coagulate by the process of electrolysis. The blood coagulates around the two poles of the galvanic current carried through. In small aneurisms, if the parts around can be secured from the travelling of clots, no doubt it would succeed. In larger aneurisms it is dangerous.

Ergotin has been given subcutaneously to contract the walls of the vessels. Bear in mind that here you are dealing with a two-edged sword. You are not only contracting the walls of the vessel itself, but diminishing the circulation in the limb beneath; and spontaneous gangrene has followed the use of ergot, without any aneurism at all. Ergotism from eating spurred rye, has been followed by epidemics of gangrene in various parts of Europe. Ergotine will contract the coats of the vessels in the parts where you do not want them contracted, as much as in the parts about the sac, where you do.

The Introduction of Substances into the Sac. — That is a very curious phenomenon. It is applicable principally to the arteries of the thorax and the abdomen and the innominate, for instance, parts usually treated by what are called constitutional measures. This consists in taking a very fine roll of silver or nickel-plated wire, puncturing the sac, and passing in, perhaps, yards of fine wire. The result is coagulation of fibrin around these little fibres; immense increase in coagulability; occlusion of the aneurism; in a few cases cure; in many cases suppuration and death. It may be tried as a last, and I would say almost desperate resort in the case of innominate or thoracic aneurism, where the sac can be got at; and where the methods of rest, sedatives, starvation and drugs have failed; where the sac has increased, and the patient is going to die, it is quite justifiable to try this method, provided the patient understands it, and wishes to have it done. A few cases have succeeded, but not a great many.

We are reduced then I think, after all, in the operative treatment of aneurisms to only two methods. One is to tie the vessel; the other is to compress it. It may be done in a great variety of ways, and is frequently curative. The danger of too sudden ligation, or of sudden compression, is that there is not time enough to establish the collateral circulation, and that the parts below will die, and mortification take place. This may not extend up very far. Sometimes the patient loses a toe, or several toes; sometimes the process stops at the instep; and sometimes involves the whole leg; and where such a result does occur we might just as well have amputated the leg before and saved all this trouble, as amputate it afterwards for spontaneous gangrene. A distinguished physician in London, a few years ago, preferred amputation of the thigh to the tiresome and unsuccessful treatment of a large popliteal aneurism; and he promptly recovered from the operation. There is an open question, in case of a large aneurism, where there is a good deal of doubt whether you can cure it without gangrene, in regard to the proper method of procedure. Undoubtedly the majority would say they preferred any chance of ligature or compression, rather than the chance of losing a limb.

Venous aneurisms, or as they are sometimes called, varicose aneurisms, which consist in a communication between the artery and vein, in consequence of a wound which has failed to kill the patient by bleeding; which has let the arterial blood run out into the vein; are frequently of long duration; not always fatal; do not always increase fast; and do not always call for surgical interference. Unfortunately they often happen in inaccessible parts of the body; for instance, stabs in the groin and wounding of the iliac, so that the iliac arterial current communicates with the iliac vein. Such a case gives rise to an enormous buzzing tumor inside the abdomen, which is heard with a whirring, rasping sound, pretty much like the saw, or a planing machine. This gives rise to pain and œdema of the leg; retraction in order to favor it; and to incapacity; but not necessarily, or rapidly, to destruction of life. If these cases can be reached early, they may be cured, frequently, by compression; and that is the most judicious form of treatment to apply. If they are small and very accessible, they may be laid open, and the artery and vein thoroughly tied.

Original Articles.

THE TREATMENT OF HALLUX VALGUS.[1]

[illegible], M.D., OF BOSTON.

It seems hardly necessary for me to offer an apology for presenting a paper upon this subject, when it is considered, that comparatively few persons go through life without suffering to a greater or less degree from this affection, or from conditions which are directly the result of it; and when, furthermore, it is considered that while the deformity itself, as well as the resulting conditions are truly surgical affections, with definite modes of treatment for their control, still the large majority of the cases seek relief from their troubles at the hands of chiropodists, men of very little, if any, medical or surgical training.

While the title of the paper deals only with the treatment of Hallux Valgus, nevertheless, as the etiology has a decided bearing upon the treatment, a certain amount of time must be given to its consideration.

While the disease is essentially a disease of adult life, nevertheless, clinically, a congenital form is recognized, as with Hallux Varus, although it is of much less frequent occurrence. The deformity in these cases may be due to muscular contraction, or to an abnormal development of the bones, so that one articular facet is longer than the other.

Flat-foot is undoubtedly responsible for a certain number of cases; the reasons being purely mechanical ones. Instead of the step being completed with the weight of the body squarely upon the ball of the great toe, it is thrown upon the inner side, thus stretching the internal lateral ligaments, and pressing the toe forcibly against the others. Aston Key[2] describes the same condition by attributing it to excessive weight received upon a weak tarsus and metatarsus from overstanding, the great toe being gradually forced outwards by the oblique bearing of the foot, on the inner plantar surface, when the arch of the foot has given way.

In the large majority of cases, however, the condition is directly attributable to the wearing of improper shoes; either too short, too narrow, too pointed, or some form that does not give as much room for lateral spreading of the toes as is possible at the metatarso-phalangeal articulations. Hueter[3] mentions the shoes and the shoemaker as the sole cause of the deformity; as [illegible] Bradford and Lovett.[4] [illegible] the resulting deformity is the same; the toes are crowded together and the great toe pressed against or drawn over or under the others. The deformity is necessarily increased in walking or standing, as there is distinct widening across the ball of the foot. To quote from Bradford and Lovett:[5] "The boot is not stretched at its extreme end, and it inevitably becomes in a degree conical in shape on this account, being broader across the ball of the foot than at the tip end. In the act of walking the foot necessarily slips inside of the boot to a certain extent, and if the shoe slips backwards and the foot forwards, a certain amount of pressure will come upon the inner side of the end of the great toe."

In the treatment of this condition it is rarely the deformity itself which causes the patient to seek advice, but, rather, some of the conditions which are the direct result. As the toes are crowded together, the folds of skin at the sides of the toe are pressed against the edges of the nail. These become irritated and sensitive, then hypertrophy as the result of the constant irritation, and later on, ulceration; and the painful "ingrowing nail" results. In the treatment of this the correction of the Hallux Valgus is necessary.

As the deformity develops and the toe is drawn more and more to the side, the head of the metatarsal bone is more and more uncovered, and there is constantly increasing pressure against this point, which normally should be protected. As a result, the skin thickens and becomes calloused; and the exposed end of the bone from the constant irritation becomes enlarged. This, at first, is chiefly due to periosteal thickening; but, later on, bony deposits replace and increase the enlargement, particularly at the age when the deposits common in chronic rheumatoid arthritis are seen.

While these changes are taking place upon the exposed side of the bone, on the inner side the articular surfaces of the phalanx and the metatarsal bone are crowded together. This produces atrophy of the articular cartilages, and, if continued, the bone becomes exposed and true caries may result.

On the exposed side of the foot, as the thickening at the head of the metatarsal goes on and the skin over it becomes harder, a bursa forms between the two, which may or may not communicate with the joint. Under the continued irritation of walking this bursa enlarges, and later on becomes inflamed, — the so-called "Bunion."

Preventative treatment is, of course, the best for this condition, and consists in keeping the feet in the natural position from infancy; the arch of the foot should be maintained, especially in persons who are obliged to stand a great deal, and above all, proper shoes should be worn. After the deformity has occurred, the first part of the treatment consists in the removal of the cause; nothing like a tight shoe should be thought of, a wide and easy one being worn, and in connection with this stockings of good length should be worn. Key suggests having shoes made with a separate compartment for the great toe.

For the correction of the deformity various methods are in use. One of the simplest consists in wearing a piece of felt or roll of cotton between the first and second toes. This presses the great toe into place; but it has the disadvantage of leaving a considerable space between the two toes, so that when the pad is removed it is easy for the deformity to recur.

A method suggested by Sayre[6] consists in using a linen or buckskin cot made to fit the toe, to which is attached a few inches of elastic webbing, and to this, again, is attached a piece of adhesive plaster to go around the heel. This is retained in place by two other strips of plaster which encircle the foot. This makes a comfortable appliance for use, especially in the acute cases.

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[1] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Ibid., p. [illegible]

Various appliances have been suggested, which would exert more force for correction than the Sayre device, such as hard-rubber, gutta-percha, or pasteboard splints, to which the toe is bound, so as to pull it back into place. In this class is the Bigg's apparatus which consists of a piece of steel with an opening cut so as to avoid pressure on the bunion, which is fastened to the inside of the foot and the toe pulled up to it. The difficulty with all of these has been to adjust them in such a way that they could be worn without great discomfort.

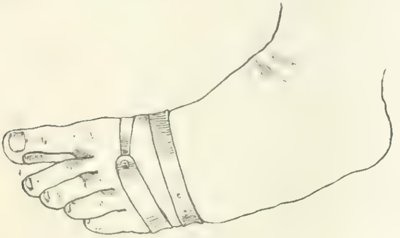

FIG. 1.

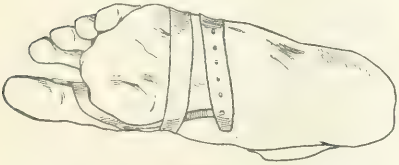

FIG. 2.

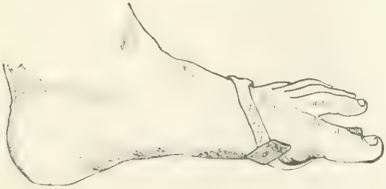

FIG. 3.

In order to get something that could be tolerated in walking, and at the same time be efficient in correcting the deformity, I have been experimenting during the summer, and after personal use, offer the two forms of apparatus that are shown in Figures 1, 2 and 3. Both can be worn inside an ordinary shoe, and at the same time exert pressure enough to hold the toe in the correct position. This pressure can be increased from time to time, if it seems necessary, by simply rebending the splint. The appliance is so fitted that no weight comes upon it in walking, the ball of the toe and ball of the foot both being free. The band which extends up on to the dorsum of the foot should be carried back far enough so that the painful joint is avoided, and should then be curved forward nearly to the base of the toes, so that flexion of the foot is not restricted. The long arm which follows the side of the foot in the splint (Figs. 1 and 2) makes it possible to exert more force for correcting the deformity, and also serves to more perfectly immobilize the splint than is possible with the appliance Fig. 3. Both splints are made of light spring steel, and should be carefully fitted before being tempered. Leather straps encircling the foot hold the appliances in position.

At times there is so much bony change that splints are not sufficient and some bone operation becomes necessary. If there is comparatively little inflammation about the joint and the bone is not very much changed in shape, a wedge-shaped piece may be removed from the head of the metatarsal bone as near the joint as possible and the toe drawn into place and secured by splints and a fixed bandage until the wound has healed. The bursa should be removed at the same time.

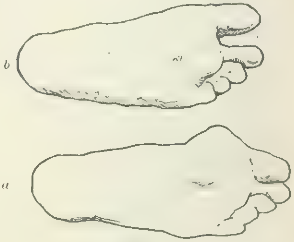

FIG. 4.

I wish here to show the casts of the foot of a patient upon whom I operated, in this way, about two months ago at the Carney Hospital. The patient was a woman about thirty-five years of age, with the marked deformity (Fig. 4, *a*) of the great toe which had existed for many years. A wedge-shaped piece of bone was removed from the head of the metatarsal, and the position corrected, as is shown by (Fig. 4, *b*), which was taken a few days ago.

At times, the change which has taken place in the head of the metatarsal bone is so extensive, and the bone is in such an unhealthy condition that the wound does not heal after the osteotomy, and a troublesome sinus remains. In other cases the thickening is so great that it is readily apparent, that even though an osteotomy were performed, the prominence at the joint would remain and cause trouble. For these cases the operation described by Hueter,[7] which consists of complete excision of the head of the metatarsal bone, is to be performed. The base of the phalanx, with its muscular attachments, is not disturbed. After the removal of the piece of bone the toe is drawn into place and the wound loosely closed, or is allowed to granulate. The bursa should be removed at the time of the operation, as with osteotomy. The results after this operation have been very satisfactory, leaving a straight toe and a very useful foot.

Tenotomy is suggested as a form of treatment, but the cases must be very rare that can be corrected wholly by this method.

Painful inflammation of the bursa may result from the constant irritation, and this may go on to suppuration, and from this a more or less extensive cellulitis may develop. With this there is apt to be marked sensitiveness of the joint, rendering motion very painful, and for this condition rest and poultices or cold compresses are necessary, with possibly incision later on. The joint should be protected by bunion plasters or rings of saddler's felt, and a large soft shoe (or one made after the pattern of the Chinese shoe) should be worn.

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[7] Gelenk-Krankheiten, p. 345.

Whatever be the operation or whatever the treatment, the importance of wearing proper shoes should not be lost sight of. The sole should be wide, so that the foot may have abundant room to spread out in walking or standing, and there should be plenty of room for the toes to be extended in the line with the metatarsal bones.

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APPENDICITIS.[1]

BY A. WORCESTER, A.M., M.D.

(Concluded from No. 21, page [illegible].)

LET us now consider the treatment, and the reasons for the continued disgraceful diversity of opinions regarding the question.

Many writers upon the subject have apparently never seen a case of appendicitis. Having recognized its sequelæ at either ante-mortem or post-mortem examination of the abdomen, they imagine that they have recognized the disease itself. No other evidence of this general ignorance need be mentioned than the custom in medical journals as well as in the lay press of reporting deaths from appendicitis. Now nobody ever did die of appendicitis nor ever will. For the appendix being a perfectly useless organ, even its annihilation cannot injure the body except indirectly. But, just as the most harmless fellow citizen, who never would be missed, after his death, if his corpse be not decently removed, may endanger the life of the community, so our innocent little appendix after its death is apt to become an offensive source of trouble in our midst. And to treat with salts a patient in whose abdomen lies a putrefying appendix (as was lately recommended by a distinguished surgeon who maintained that once dead the appendix had done all the harm that it could do) is as reasonable treatment as it would be to depend upon flushing with sea-water the leaking sewers of a house where a cholera corpse was left lying in state.

There is, however, nowadays, excepting perhaps in the State of Maine, no theoretical opposition to the prompt removal of a gangrenous appendix. The question is as to the propriety of removing the inflamed appendix before the gangrenous stage is reached, or rather before the existence of gangrene shall have been confirmed by the inception of peritonitis or of a localized abscess. There could not be two sides to this question, were it not for the unfortunate fact that some still think themselves able to discriminate in cases of appendicitis which ones will eventuate in gangrene; or think themselves at least able to determine just when in any given case the inflammation assumes a gangrenous character. To this conceit should be ascribed the continued terrible mortality from the sequelæ of appendicitis. For, even admitting that a few experts have this extraordinary ability, which I deny, there is even so no safety in the ordinary practitioner's fooling himself with either his own or his consultant's guesswork. The physician who undertakes to treat his cases medically until gangrene occurs, and then to shift all responsibility upon the surgeon, will often find that he calls in the surgeon either a day too soon, to his own mortification, or, if a day too late, to his patient's.

If those who believe that they themselves have acquired the skill to distinguish at the onset of the disease the mild from the fulminant variety would only remember by what experience such supposed skill has been acquired, it does not seem possible that they would advise the inexperienced to follow in their footsteps. Yet this is one effect of their teaching, and the only other logical deduction is the necessity resting upon all more modest practitioners of putting their patients to the expense of sending at once for the assistance of these would-be specialists.

Feeble attempts have been made, it is true, to inform the profession how to differentiate the sure-to-do-well from the sure-to-do-badly cases. But in these attempts no two authorities agree, and, indeed, no authority of this year agrees with his own last year's deliverances. Apparently, the present position of these would-be diagnosticians is that one must be guided not by intelligible rules, but by impressions, which may be acquired only by long experience in watching cases go well, or from bad to worse, as fate may decide. Such experience apparently leads to the specialty of knowing nothing about appendicitis, however great proficiency may thus be acquired in dealing with the after-effects of the disease.

It is, however, not only that no one has as yet been able to formulate any serviceable method for making this very desirable diagnosis of the varieties of appendicitis without abdominal section, but it is also to be borne in mind that in the very nature of the problem no such method need be expected. For there are many conditions frequently attending even the apparently mildest forms of appendix inflammation, all of which are unrecognizable from the outside, yet any one of which being present makes it certain that in that particular case either a perforation or a gangrenous sloughing off of the organ will occur. Thus who can reasonably hope for ability ever to tell with what kind of micrococci an inflamed appendicitis is loaded; or how thin its walls have become, and at what hour the perforation will occur; or in what position the appendix lies, and the direction in which its foul contents will then be shot?

If we are only to stand by with salts and sympathy and close observation in these cases, all of these awkward questions must be satisfactorily answered, or there will be more funerals; and, until such questions can be satisfactorily determined, it is the plain, unavoidable duty of the medical attendant in every case of appendicitis, and as soon as the diagnosis is made, to put his patient under surgical treatment. An hour's unnecessary delay in so doing is inexcusable, if not criminal, negligence.

This, I am well aware, is not yet generally acceptable doctrine to the profession.

It is easier to understand the position of the physician than it is that of the average surgeon as regards this duty of immediate surgical treatment. The physician sees more than half of the cases, which perhaps, may be of appendicitis, do well under medical treatment; and where death or other grave disaster ensues the physician generally is able to transfer a large part of the responsibility to the shoulders of some surgeon. So long as surgeons dally with these cases, waiting for evidence of inflammation of something besides the appendix, it need not be expected that physicians will be in a hurry to transfer their appendicitis patients, and we shall continue to hear the sickening story of cases where at first all the doctors present were sure that it was only a mild catarrhal attack, but where suddenly the disease became fulminant, and where finally, at the last hour, the rigid abdomen was found to be full of stinking pus.

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[1] Read by invitation before the Essex South District Medical Society, September 1[illegible], [illegible].

Those who oppose the rational radical treatment of appendicitis may be divided into four classes. Some do not know how to make the diagnosis. Some think they can diagnosticate even the varieties of the disease; others believe such knowledge possible; and finally, some have such an exaggerated fear of abdominal surgery that they allow their patients to take, instead of the chances under operation, the chances of not suffering any ill effects from the disease.

Attention has been given already to several of these objections. And now as regards the hope of future ability to tell beforehand which cases will surely do well without surgical intervention. Even if such knowledge be obtainable, will it come from the present custom of watching some cases recover only to recur, or will it come from the too late operations, or even from evacuating abscesses that might have been prevented? Will not such knowledge come, supposing that it is within the bounds of hope, rather by the prompt than by the delayed use of the knife? And can it be doubted that more lives would thereby be saved?

It remains for us now to consider the objections founded upon the imaginary dangers and disadvantages of even a needless explorative laparotomy. The real danger and disadvantage is trifling in comparison with that of delay in applying prompt surgical treatment. There is the fortnight's confinement to bed and the remote chance of subsequent hernia. But supposing the abdominal section to have been proven needless, there is then no danger whatever from subsequent hernia. The different layers of the abdominal walls can be fastened by buried sutures, and even if hernia should result, its radical cure is afterwards a simple matter.[2]

But only very seldom will an abdominal section, made under the diagnosis of beginning appendicitis, prove useful only in eliminating that disease by exclusion. Generally, the inflamed appendix can then be easily removed, and the disease eliminated by the excision; and where there is doubt as to its condition, or where there is difficulty in extricating it, then the early incision will be far more likely to prove to be a valuable sluice for a subsequent foul discharge than to be a source of danger or even of inconvenience to the patient.

I have several times seen fæcal concretions, and sometimes even the gangrenous appendix itself, discharged through incisions which at the time of operating seemed to be almost profitless. This result may be especially hoped for when there is a history of previous severe attacks.

Those who object to the immediate operation on account of its supposed dangers and disadvantages surely can never have seen employed the treatment they ignorantly condemn. For no surgeon who has once amputated a gangrenous appendix before it has perforated, and before either a localized abscess or a general peritonitis has developed, can ever question the immeasurable advantages of so treating the disease.

From such treatment no deaths have ever resulted, so far as I am aware. Nor have I known of any hernia or other subsequent trouble to result. Patients so treated certainly do not suffer recurrences of the disease.

After delayed surgical treatment, all kinds of troubles and disasters may be expected, and are, indeed, often unavoidable. And it is just here that the blunder of reporting cases of the sequelæ of appendicitis as cases of the disease itself, works such mischief; for timid practitioners hesitate to allow the early use of the knife where the disease is in its original mild stages, thinking thus to avoid the terrible revelations belonging only to delayed surgery. It would be as reasonable for such men to object to timely surgery because of the frightful revelations of the after-effects of appendicitis discovered so often only at the autopsy.

One last objection to the treatment herein advocated remains for consideration. Its necessity and even its propriety is still questioned, and by surgeons and physicians of large experience and great prestige.

Believing, as I firmly do believe, in the necessity of treating the disease surgically as soon as ever the diagnosis is made, and that every death resulting from appendicitis where the patient was not given the benefit of immediate surgical relief, is due to malpractice, I can but hold as responsible for the continued death-roll both those who advocate other methods of treatment and those who even tacitly approve the propriety of delay in such cases; for until the leaders of the profession either endorse the rule of immediate surgical treatment in every case, or furnish some other intelligible rule, it need not be expected that the present death-rate will be diminished.

Meanwhile, general practitioners make a great mistake in weakly depending upon the leaders of the profession in the simple emergency of an attack of appendicitis. There is too much of this shifting of responsibility business, nowadays. In the cities it may pay; it certainly does not pay in more sparsely-settled regions where the loss of patients cannot be well afforded, and where the grave-stones stare at us so uncomfortably, as we ride by on moonlight nights.

And then appendicitis is only one of several emergencies requiring prompt abdominal section. In some, as for instance in strangulated hernia, the doctor who waits long before operating, is not generally considered a first-class practitioner. And yet the operation of amputating a gangrenous appendix is surely neither more imperative nor more difficult.

In the surgical treatment of the later stages of the disease, and of the frightful conditions following it, there is no limit to the skill and equipment needed. Even so, failure will often occur. But in the early operation ordinary surgeons will succeed.

Perfect asepsis is, of course, requisite. So it is in the simplest surgery, and only fools disregard it. There is then no danger in cutting down through the abdominal wall directly over the point of greatest tenderness and of greatest resistance, as discovered by previous palpation. The incision should be a clean knife-cut throughout. Before incising the peritoneum, it should be picked up with the forceps and at first nicked through by the knife, to avoid wounding any underlying gut. For those who can recognize the large intestine when they see it (and those who cannot do so can readily learn by a little careful study at an autopsy) there is not much difficulty in finding the appendix. The longitudinal bands on the colon and cæcum run straight down to the base of the appendix.

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[2] The truth of this last statement has since been verified by the personal experience of the writer.

In cases where the surgery is delayed, it may be impracticable for an inexperienced surgeon, or even for an adept, to remove the appendix. But in cases of immediate operation the appendix can easily be brought up out of the belly wound and cut off by a V-shaped incision, which will allow the inversion of its edges and the approximation by Lembert sutures of their peritoneal coats.

If there is any gangrene of the outside of the appendix, it is not safe to close the abdominal wound: some gauze must be loosely stuffed into the cavity where the organ lay, which can be removed on the second or third day. But if the appendix has no gangrenous surface, then, after careful wiping out the region involved, the abdominal walls can be safely closed by layers, with buried sutures.

Such, in brief outline, is the operation by which patients suffering with appendicitis may be surely saved not only from death but from the chances of recurrence and of long-suffering.

I now beg to offer the following conclusions:

(1) Appendicitis itself is not a serious disease, for it is the inflammation of a worthless part of the body. It is, however, apt to recur. And any attack if left to nature or to medical management may cause a fatal purulent peritonitis or a localized abscess.

(2) Appendicitis can be as readily recognized as can any other local internal inflammation. This diagnosis, however, is easiest in the earliest stage of the disease.

(3) No rules can be formulated for differentiating the varieties of appendicitis, and of thus foretelling which cases will recover and which will cause dangerous or even fatal consequences. For there is no known way, except by abdominal section, of ascertaining the rate of progress or the extent of the inflammation in any given case; nor of determining the virulence of the contents of the organ, or its anatomical situation.

(4) The only rational treatment of the disease is its immediate ending, by excising the organ, before its own death or damage causes like results to its owner. This, at the beginning of the attack, is a feasible and an absolutely safe operation.

(5) The mortality in properly treated cases of appendicitis is *nil*.

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Clinical Department.

A FEW CASES OF MILD MENTAL DISTURBANCE.[1]

BY LUCIUS W. BAKER, M.D.,

Superintendent Riverview Sanitarium for Nervous Invalids, Baldwinville, Mass.

The family physician is usually first consulted in regard to nearly every case of insanity, and his advice is desired as to the best counsel to be followed. He may not always be familiar with the rarer forms of mental disease, but he should be able to recognize and deal with those cases most likely to be met with in the routine of daily life. The few cases herewith presented are reported, not for their rarity or for any special peculiarity, but as illustrative of those cases which are constantly coming under the observation of the general practitioner.

Case I. Mrs. A, age twenty-five, about three months after her first confinement began to show symptoms of acute mental disturbance. She was of a refined, gentle disposition, but became profane, incoherent with constantly varying delusions. She had refused to care for her baby, and several times attempted to destroy it; had jumped from a two-story window, and tried to leap from a carriage while passing over a bridge. When admitted, she was poorly nourished, sleepless, and rambling in her conversation, was abusive to her attendant, refused to undress at night, and it was with great difficulty that she could be bathed. She was constantly attempting suicide by choking herself with her hands, and unless her grasp was forcibly removed would persist until her face was livid. This condition continued unchanged for about a month, when she became more quiet and manifested some interest in her surroundings; she could then be induced to engage for a short time daily in some fancy work, and spent much time in the open air. Her mental condition improved quite rapidly, and she was discharged well in about five months from the time of admission.

She has since passed safely through another confinement, and still remains in good physical and mental health.

Case II. Mrs. B, a bright, well-educated lady of twenty-five, of a strongly marked neurotic temperament. For nearly two years before admission she had had the delusion that her eyebrows and eyelashes were diseased and falling out, and that in consequence she had become so repulsive in her appearance that she was unfit to mingle in society. She was greatly depressed, and remained in strict seclusion as far as possible, spending much of her time before the mirror lamenting her sad lot, and would only go out when closely veiled. She was continually applying various preparations in hopes of preventing the progress of the supposed disease; and when I first saw her had succeeded in exciting some inflammation of the skin. Was seen by Dr. J. C. White, of Boston, in consultation, who decided that the eyebrows were free from disease.

She remained under my observation for about four months, during which time she was kept much in the open air and the presence of the delusion was largely ignored. She was a fine musician, and was urged to play and sing as much as possible. Gradually her mental trouble disappeared; she regained her health and spirits; and so far as I have been able to learn, has continued well.

Case III. Mrs. C, age thirty-five, was of an intensely active disposition. Soon after leaving the seminary she had an attack of neurasthenia, from which she recovered, married and went as a missionary to China, where with her husband she labored hard for six years. She then gave out, returned to America, and in April, 1890, entered a nervine asylum, where she improved physically; but as she gained in strength her inactive life became very irksome, and she then began to be mentally disturbed. For about a week before coming under my care she had been sleeping poorly, had headaches, and imagined that her room was arranged so that constant watch was kept upon her movements and that what she said or did was conveyed at once by means of the steam-pipes to the superintendent's apartments. She also believed that she had died and been brought to life again. During her residence with me of three months, she had varying delusions, and once wrote a long astronomical jumble which she wished to have published in the New York *Tribune*. As she gained in flesh and strength, she began to sleep better, her delusions passed away, and she has since remained in perfect mental health.

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[1] Read before the New England Psychological Society, September 2[illegible], 1893.

CASE IV. Mrs. D, age fifty-five, three months after an attack of the grip began to sleep poorly and lost her appetite. She was, however, obliged to work quite hard during the following summer; but in September, 1891, suddenly lost her self-control, and for a time was quite hysterical. She was then restless, sleepless and quite depressed, but without positive delusions, and had lost all interest in her home, to which she was usually much attached.

Within a month after admission she had gained three pounds in flesh, and was sleeping better. She was obliged to return home and care for a sick husband, when the old symptoms returned, and she came back, remained for two months, improved, and went home again on trial with the same result. She returned again and stayed four months, when she was discharged quite well, but with the caution to avoid housework for a year. This she did for some time, and is now as well as usual.

CASE V. Miss E, age thirty, a school-teacher by profession, had been working very hard and been out of health for about a year, but for some years had been a poor sleeper and had taken various hypnotics and other drugs. She was admitted to the Adams Nervine Asylum a few weeks before coming to me. While there she began to believe that a gentleman with whom her family had had some financial disagreement had furnished false information about her, that her letters were opened, and that she was constantly watched. She refused to take her medicines, and conducted herself generally so badly that she was sent away from there and came under my care. She was then somewhat anæmic, quite thin (weighing but eighty-seven pounds), possessed of varying delusions, and nervously prostrated. Soon after admission she attempted to run away but was easily persuaded to return. With rest, full feeding and cod liver oil, her mental condition steadily improved, and within a few months she had gained thirteen pounds in flesh, but regained her physical strength quite slowly. She remained under my observation for about a year, and since her return home has continued to improve and will probably completely regain her health.

CASE VI. Mrs. F, age forty-five, about two months before admission began to sleep poorly, lost all interest in her household affairs, and believed that she was cursed of God, that she was dishonest, had done evil, that she must go about telling the wicked things she had done, and that then she would be arrested and imprisoned, which would only be what she deserved. She paid but little attention to any one, and would sit for hours twisting a string or handkerchief between her hands. Had been taking teaspoonful doses of paraldehyde at bed-time and repeated the dose in the middle of the night. This was soon discontinued, and she was given twenty grains of chloralamid nightly, which was gradually reduced and soon dropped altogether. She was placed upon a generous diet, with tonics, kept much in the open air, and steadily but slowly improved, and returned home in three months. When last heard from she was as well as ever.

CASE VII. Mrs. G, for three years past has had profuse hæmorrhages from a uterine fibroid. September 30, 1892, the uterus and appendages were removed at St. Margaret's, Boston, by Dr. J. W. Elliott. Convalescence from the operation was satisfactory, and she returned home in five weeks, but soon became depressed and wakeful, and complained of pains in the head and back of the neck, and was in bed most of the time. Slight delusions then began to appear; she had committed an unpardonable sin in leaving the hospital so soon, and had erroneous ideas as to her surroundings, examination, etc. Returning to St. Margaret's, January 9, 1893, she appeared perfectly rational, but complained of pain in the region of the uterus, and that her head felt badly. Her mental condition again became much disturbed. She imagined that policemen were coming to take her to a dungeon across the river, that she had done wrong in telling things which she ought not to have told, and that her husband must suffer in consequence.

In this condition she was sent to me February 14, 1893. She was then excited, markedly anæmic, thin and exhausted; did not sleep well; her head felt badly; and in addition to the old delusions, she believed that she was to be buried alive. Within a few weeks her mental condition showed marked improvement, but her physical health improved but slowly, and her convalescence was marked by frequent relapses and by various nervous disturbances.

She returned to her home August 4, 1893, in a normal mental state, but still weak. She has, however, continued to gain, and will probably fully recover her health.

CASE VIII. Mrs. H, in August, 1892, while at a summer resort, without any known cause, except possible exposure to heat, quite suddenly lost all interest in the affairs of life, and began to be much depressed mentally. She felt that she had lost her religious hope, that she could only bring sorrow and disaster to all with whom she came in contact; and she was in constant fear that she would become so bad that she would be sent to an asylum for the insane. In the presence of others she was bright and vivacious, but when alone would spend hours of hopeless misery. She had lost flesh rapidly, and slept badly. She was at once placed upon a generous diet, and fed every two hours. Her mental condition steadily improved. She gained fifteen pounds in three months, when she returned to make a trial of home life, and has since remained as well as ever.

I am, of course, aware that this is a very limited number of cases on which to base any conclusions; but in reviewing them I have been impressed with two things: first, the rapidity with which the mental symptoms disappeared after the commencement of systematic medical treatment; and, secondly, the value of what is known as the restorative plan of treatment in patients with mental disturbance. It should be remembered, however, that with but one exception these were all comparatively recent cases. This is in agreement with the universal opinion of alienists, that the earlier treatment can be commenced the better the prognosis.

These cases were all regarded as suffering from an impaired nutrition of the brain, and were given bitter tonics to restore the appetite when needed, — syrup of hypophosphites, phosphorus, strychnine, the various preparations of malt, and cod liver oil when possible to induce them to take it. Few hypnotics were needed, but when indicated the plan was to change them frequently, gradually reducing the quantity as the general health improved. My chief reliance, however, has been moderate exercise, out-door life, and the systematic use of a most nutritious diet. In addition to three full meals daily, I order the administration at regular intervals (generally of two hours) of a variety of concentrated liquid nourishment, such as milk, egg-nogs, malted-milk, beef-extract, etc. A careful record of the weight was kept; and with scarcely any exception there was an early gain in flesh and an accompanying improvement in the mental condition.

It is difficult, however, to carry out the full details of this plan of treatment at the patient's home, unless an experienced nurse can be had; and even then there are difficulties in the way, as the surroundings are seldom under our management, and the full co-operation of the friends is not always obtainable. For this reason it seems preferable, when possible, to secure for these patients a complete change of surroundings, where all the details of treatment can be carried out under the direct control of the physician in charge.

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Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

MORPHOLOGY OF THE MUSCULUS STERNALIS.

Dr. F. G. Parsons[1] reviews very concisely the chief facts observed concerning this interesting anomaly and the chief theories of its significance which have been deduced from them. He then gives new and original reasons for the support of a certain view. His statement of observed facts is so excellent that we give it in his own words. The main ones are the following:

"(1) That it occurs in from three to five per cent. of human subjects, though much more commonly in anencephalous monsters.

"(2) That it occurs in nearly the same proportion in male and female subjects.

"(3) That it is not found as a definite muscle in any of the lower animals.

"(4) That it lies superficial to the pectoralis major.

"(5) That it is very frequently continuous with the sterno-mastoid above.

"(6) That below, it is usually attached to the aponeurosis of the external oblique, or at all events to the sheath of that muscle which is blended with the aponeurosis.

"(7) That it may be uni- or bi-lateral.

"(8) When it is unilateral, it may cross the middle line obliquely. When it is bilateral, the two muscles are frequently connected across the middle line, or they may cross the middle line obliquely, forming a X in front of the middle line.

"(9) That it is usually supplied by one of the anterior thoracic nerves, . . . or by the intercostal nerves.

"(10) That it very occasionally has tendinous intersections.

"(11) That when a well-developed platysma co-exists with it, the platysma is always on a plane superficial to it.

"(12) That it frequently pushes the anterior cutaneous branches of the intercostal nerves inwards, so that they form loops around its inner margin."

To this Mr. Parsons might have added that sometimes its fibres mingle with those of the pectoralis major; and that when the sternalis is present the pectoral sometimes shows anomalies by defect.

He then enumerated the following as the chief theories:

"(1) That it is a prolongation upward of the rectus abdominis." We may add that this is quite antiquated.

"(2) That it is a muscle peculiar to man, corresponding to nothing in the lower animals.

"(3) That it is a continuation of the sterno-mastoid above and of the external oblique below.

"(4) That it is a continuation downwards of the sterno-mastoid.

"(5) That it is formed by fibres of the pectoralis major, which have become rotated at right angles to the generality of the fibres.

"(6) That it is a remnant of the panniculus carnosus."

The last view upheld by Sir William Turner and others, is condemned by most, particularly on the ground that the playtsma, which undoubtedly is the analogue of the panniculus, lies superficial to the sternalis. The frequent connection of the sternalis with the sterno-mastoid also stands in the way. Now Mr. Parsons has found that the panniculus of the agouti and of many other rodents divides at the axillary border of the pectoralis major and passes both above and beneath it. He continues: "In man the deep abdominal panniculus has probably become the fascial sheath over the external oblique, and it is quite possible that the deep part of the cervical panniculus which lies over the sterno-mastoid and deep to the platysma (superficial cervical panniculus), may have become incorporated with the sterno-mastoid. If this be granted, nothing is simpler than to regard the sternalis as the remnant of a connection between the deep cervical and the deep abdominal panniculus, seeing that it is attached so often to the sterno-mastoid above and to the external oblique or its sheath below. . . . This theory, moreover, accounts for the co-existence of the platysma with the sternalis, though on a more superficial plane."

Dr. Parsons adds that as he regards the pectoralis major as derived from the panniculus, it matters little whether we regard the sternalis as a part of one or the other. This is a very ingenious view, though resting on a basis that must be doubtful, till several of the points concerning the analogies of the fasciæ and muscles have been definitely settled.

ANTHROPOLOGICAL MEASUREMENTS.

Hasse and Dehner,[2] of Breslau, made observations on rather more than five thousand soldiers with interesting results. We are particularly concerned with the question of the symmetry of the two sides of the body. The legs were of equal length in 32 per cent. and unequal in 68 per cent. In 52 per cent. of the whole, the left leg was the longer; the right in 16 per cent. The arms were equal only in 17+ per cent., and unequal in 83 per cent.[3] In 75 per cent. of the whole the right arm was the longer, the left in nine per cent. Only one man in one hundred was left-handed and only a single man of this class had the right arm the longer.

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[1] Journal of Anatomy and Physiology, vol. xxvii, July, 1893.

[2] Arch. für Anat. und Phys[illegible]., Anat. A[illegible]., [illegible]

THE FORAMEN CÆCUM.[4]

Professor Holl points out that the statements in anatomies concerning this little hole are not all the same. The general impression concerning it is that it is sometimes merely a blind pit, in other cases a communication between the cranial and nasal cavities transmitting a vein. The last impression, according to Holl, is quite a mistake. In the adult it is a closed canal completely filled by a process of dura mater. In the macerated skull of a young person it is truly a canal, but it transmits no vein, for skulls which have not been macerated show that it is closed below by cartilage; the process of the dura mater which passes through it runs for a short distance between the cartilage and the nasal bones. In an embryo of a new-born child this band runs as a small thread to the tip of the nose. The bone which grows round the upper part of this is the nasal spine of the adult frontal bone. This spine is very important; it runs as a pin between the ethmoid, the nasal bones and the median prominence of the frontal. This has, moreover, a pathological interest. If the nasal spine does not develop, this place is closed only by membrane, so that an encephalocele may occur.

THE TRANSVERSE PALATINE FISSURE.[5]

This is the fissure formed by the junction of the horizontal plates of the palate bones with those of the superior maxillæ. It has received no great attention as its variations are of no practical consequence. Professor Stieda has classified the kinds of suture with his well-known accuracy. It is possible that the matter may have some ethnological value. Besides irregular forms which defy classification, he finds three chief dispositions of this fissure. The most usual is when it bends forward with a convexity which is completed at the median line by the opposite suture. It may instead run straight across, or finally it may bend backward. Stieda examined 1,382 skulls which were suited to the purpose, that is to say, in which the hard palate was not injured nor the suture obliterated. More than 1,000 of these were in two collections at Königsberg, but the remaining 300 were in the anthropological institute of Rome. About 200 of the last were skulls of Melanesians and the rest of Italians. Of the Melanesians about 48 per cent. had the anterior convexity and about 40 per cent. had a straight suture. This is very different from the results obtained with the German collections which showed the anterior convexity in from 65 to 68 per cent., and the straight line in from 14 to 19 per cent. The Italian skulls had the forward convexity in 72 per cent., the straight line in 40 per cent. In all races the posterior convexity was less common and irregular forms rarest of all.

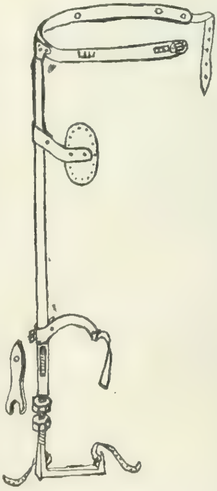
THE LYMPHATICS OF THE ANUS.[6]

Dr. Quénu finds that the lymphatics of the anus empty into the glands near the termination of the long saphenous vein, most often somewhat above that level, but not rarely below it. The lymphatics of the anus are connected with those of the rectum along the columns of Morgagni. The course of the rectal lymphatics was studied only on children, which seems unfortunate. The author wished to ascertain whether they emptied only into the glands of the meso-rectum, or whether they had any connection with glands at the sides of the pelvis. He found that the lymphatics of these parts may be divided into three sets: those of the anus already mentioned inferior to the *levator ani*, those just above that muscle running to the lateral glands in the neighborhood of the internal iliac or of its chief branches, and finally, superior ones running to the glands along the superior hæmorroidal artery.

New Instruments.

A MODIFICATION OF THE LONG TRACTION SPLINT FOR HIP DISEASE, DESIGNED TO PROVIDE A LIGHT APPARATUS FOR LITTLE CHILDREN.

BY AUGUSTUS THORNDIKE, M.D., BOSTON.



It not infrequently happens in orthopedic practice that a child three or four years old has to wear a Taylor hip-splint, a high-soled boot, and use crutches. It is almost invariably very slow work teaching such small children to walk thus encumbered. In the out-patient clinic the parent becomes first discouraged, then firmly convinced that it is impossible for such a small baby to walk on crutches; and in some instances the child is taken away from the clinic, and all treatment for a while is abandoned. If not, then after several months of encouragement and advice on the part of the orthopedist, the child gets to use crutches in spite of the parent's unbelief. In the hospital-ward instruction in the use of crutches is more easily and quickly given; but a little child always monopolizes a great deal of the nurse's time before it finally learns to walk. Taking both of these factors into consideration, it seemed to me that much time and trouble might be saved by making the splint out of a lighter material than the square bar of iron or steel generally employed, at least in this city. For this purpose, I have used for the upright of the splint a piece of steel tubing, which is both lighter than iron gas-pipe and stiffer than brass tubing.

Into the upper end of the tube is brazed a forged piece, flattened out and shaped like the forging on top of the upright of a Taylor splint, which serves to connect it by three iron rivets to the waist-band of the splint. To insure strength, the lower part of the forging should nearly fill the tube for the upper two inches. The waist band is not different from that of the ordinary traction hip-splint, and provides buckles for the completing belt and two perineal bands. Into the lower end of the steel tube, slides an iron rod; the lower part of this is forged into a light foot-piece, while upon the upper portion, for about six inches, a thread is turned of twelve turns to the inch, which carries two nuts. This rod should slide easily within the tube and at the same time almost fill it. By cutting a slot in the tube of one inch (the lower end of which should be at least two inches from the bottom of the tube) and inserting a small pin through the slot into the rod, the foot-piece is kept from twisting. Two straps riveted to the sides of the foot-piece serve to attach it to buckles on the leg extensions. The thigh-pad and calf-band are secured to the splint by simply wrapping the end of the arm once around the tube and tightening it with a screw. This holds the arm firmly enough for a small child, and enables one to alter the position of the bands with great ease. The upper part of the tube may be made to fit the natural curves of the body, but the lower six inches should be straight to allow the rod to slide within it.

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[3] In the original these figures are respectively 18 and 82, but this does not tally with what follows. We have corrected two evident mistakes but an error of one per cent. remained.

[4] Verhandlungen der Anatomischen Gesellschaft, 1893.

[5] Archiv. für Anthropol., Band xxii, 1893.

[6] Jour. de l'Anat. et de la Physiol., No. 4, 1893.

In applying the splint the belt and perineal straps should first be tightened. The straps from the foot-piece should then be buckled firmly into the buckles on the leg extensions, and the webbing strap from the calf-band fastened. When the splint is put on, the pin should be at the top of the slot. By turning the upper of the two nuts with the wrench, any desired amount of extension may be applied; then holding the first nut steady with the wrench, the second nut is screwed firmly down on the first. This locks the two and prevents slipping. Two wrenches are provided for the purpose.

I have only had occasion to apply this form of splint twice during the past eighteen months; but the rapidity with which those little children have learned to get about has led me to think that I have been using too heavy apparatus. My limited experience has already disclosed two facts about this splint: first, that any rivet-hole or screw-hole in the steel tube renders it liable to break; and, secondly, that the "locked" nuts do not hold, but gradually loosen, if the little patient attempts to discard crutches and walk about on the foot-piece and high sole only.

Now that steel tubing is manufactured in this country, the cost of this appliance should not exceed that of other long traction-splints which provide for the adjustment of the amount of extension by the ratchet and windlass.

The Value of Bugs. — A curious case has recently come to trial in Brooklyn. A professional bug-exterminator sued a saloon-keeper for $25 for clearing his premises of insects. The plaintiff declares that he killed 8,000,000 bugs, which is at the rate of 3,200 bugs for a cent. The defendant asserts that the sum agreed upon was $12.50, that the plaintiff previously owed him $11.40, and that in the course of the work of extermination he (the plaintiff) drank up more than the balance.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

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Regular meeting, Monday, October 9, 1893, the President, Dr. C. F. Folsom, in the chair.

Dr. George Haven read a paper on

SOME CASES OF LAPAROTOMY.

Dr. J. G. Blake: I have nothing to say about the appendicitis cases. I only desire to congratulate the reader upon getting the malignant disease of the uterus at such an early stage. Usually, when these cases come under treatment the disease has really got beyond control, that is, the glandular tissues and the uterine appendages are so diseased that removal of the uterus itself does not seem to accomplish a great deal. I should like to ask if the surrounding parts were quite free.

Dr. Haven: They were entirely free. The trouble was entirely in the body of the uterus.

Dr. Blake: I think this is the class of cases that justifies a grave operation like removal of the uterus. I have long thought after studying the statistics of radical methods and comparing as far as possible the results with those of milder methods, that the preponderance of evidence was in favor of not incurring the risk of grave operations, but of treating symptoms and keeping the disease in subjection by constant supervision. In considering the results of vaginal hysterectomy for malignant disease, Dr. Chadwick makes the statement that all his cases died within a year; and in the "System of Gynecology," edited by Mann, the statement is made that none of the patients who had undergone the operation of removal of the uterus were living at the end of five years. From my own knowledge, I feel safe in saying that where as much of the disease as can be reached is removed by curettes and caustics and the patient kept under supervision, life is rendered tolerable, free from pain, and prolonged on an average about two years. Unless the doctor is fortunate enough to get the disease in an early stage of development my own opinion is that the milder methods accomplish as much, taking into consideration the risks that follow the radical operation. Most of the cases of malignant disease of the uterus which have come to the City Hospital have come at a late stage, and looking back over a number of years I have never been quite satisfied that the conditions present when the patient came under observation were such as to justify resort to the graver operation.

Dr. J. B. Ayer: The second case I think was extremely interesting. The little girl of six years when I first saw her did not have pain exclusively localized in the region of the appendix. The pain was general. I felt suspicious of this trouble, but could not then make a positive diagnosis. On the second day in consultation with Drs. Haven and Putnam we concluded that there could be no doubt about the diagnosis. The case seemed a desperate one from the outset. The result I think was most brilliant.

I have recently seen another patient who died of appendicitis on the second day, in whom pain did not begin near the appendix, but in the epigastric region. In a few hours, however, it was over the appendix.

Dr. E. H. Bradford: I am glad Dr. Haven has drawn attention to appendicitis in children, which perhaps is more common than is usually supposed. In a case where I had the opportunity of seeing the autopsy, the patient dying of tubercular meningitis, the appendix was found full of pus. There had been no symptoms directing attention to this and no other abdominal lesion. The appendix was very thin, and a rupture could easily have taken place.

In the case of a child of four, at the Children's Hospital, upon whom Dr. Monks operated, the appendix was found enlarged and thickened in a congenital hernia in the scrotum.

I recall another case in which the operation was done, I think, by Dr. Lovett, on a child of five.

I have seen three other cases in which the symptoms passed away without operation.

I dare say the disease is frequently overlooked in children, operation being thought of in only the severer forms, and in previous years no operation done.

Dr. Haven stated in answer to questions, that it was the rule that if the appendix could not be freed without undue force, it was better to pack and leave it. The usual fistula closed within a few months. In the present instance, the fistula did not seem to affect the health of the child at all.

Dr. Henry Jackson: The reports of the two cases in children are interesting on account of the absence in each of the classical symptoms of appendicitis in the adult. I have had one case in a young child which was rather similar. There was no acute abdominal pain in the region of the appendix. The whole abdomen was tense and somewhat tender. The child, who was five or six years old, did not have sufficient pain to cause screaming or even to prevent sleep during the whole night. Examination of the abdomen showed a large area of flatness in the right lower quadrant of the abdomen. Dr. Fitz saw the case in consultation, and we told the family the child could not live unless operated upon. They declined an operation. The child, however, recovered.

Dr. Haven: I think the position of the appendix in the second case was interesting, it being just below the last rib and firmly bound down with the cæcum. What could be tied off was tied off.

I fully agree with what Dr. Blake said in reference to cases of cancer presenting themselves at a late stage of the disease. I see very few cases that are operable owing to extension of the disease into the pelvis. I think, however, a radical operation is to be preferred to milder methods in cases in which the ligaments or the cellular tissue are not involved. Even the cases relieved by palliative treatment have pain and disagreeable symptoms, and I do not think they do nearly as well as those operated upon radically, if it is possible to operate radically. The duration of life is not the sole consideration; we must also take into account the amount of suffering and discomfort from which they are saved after radical operations.

Dr. Joel E. Goldthwait presented a paper on

THE TREATMENT OF HALLUX VALGUS.[1]

Dr. E. H. Bradford; I am very glad to say that the apparatus Dr. Goldthwait has devised is the neatest arrangement that can be made for the purpose, and I hope it will be generally used, for it makes the mechanical treatment possible which has hitherto been difficult. Dr. Goldthwait states very clearly the cause of the deformity. It is impossible to say how common the trouble is; and if one would seek the cause, it is in the shoe. I have taken a certain amount of pains to ascertain the origin of the pointed toe craze. I had supposed it was a modern thing. At the Shoe and Leather Exhibition in Chicago there were on exhibition a large number of shoes of all periods, and the pointed toe seems to date back to the Middle Ages, or indeed before that period. It seems to be the way in which the vagary of human vanity runs; it constitutes the chief cause of the deformity which gives occasion to so much annoyance.

Dr. J. G. Blake; I happen to be a sufferer from this to some extent, together with loss of the arch, and I shall certainly very quickly avail myself of the benefit following this treatment. Now, however, I want to bear testimony to the immense benefit resulting from the steel plate for flat-foot. I mentioned to Dr. Nichols the pain and fatigue I experienced from walking, and he advised me to wear steel plates. He had my foot measured and plates fitted, and I have had more comfort since I began to wear those plates than I had for many years. The sense of support and strength is something I had not experienced before. I have no doubt I shall be still further benefited by consultation with Dr. Goldthwait.

Dr. J. B. Brainerd: In the last year I have had four or five cases of this distressing trouble which have been invariably associated with flat-foot. All of them have been greatly relieved, so far as distressing symptoms were concerned, by wearing the plates mentioned by Dr. Goldthwait. In only two has the deformity been removed, however. I shall be very glad to apply these steel springs, which I think will be just the thing needed to secure proper position for the great toe.

As to the pain being relieved from wearing the foot plates; that is perfectly reasonable, because with the two deformities and the patient walking on the inner side of the foot altogether, almost all the pressure comes upon the head of the first metatarsal bone, and if the arch is corrected, the patient walks with the foot straight instead of being abducted. That would relieve the pain, but would not, of course, correct the toe deformity.

Dr. J. G. Blake made an oral communication, describing a case of

GASTRIC ULCER.

This case is peculiar and has reference to the painful and unexpected death of a young woman in this community. The patient was twenty-four years of age. I had known her since childhood. At no time had she complained of any gastric trouble more than, perhaps, slight tendency to nausea when she varied from certain lines of diet. About ten days ago she accidentally swallowed a piece of crust of toast. She said that great pain followed, extending from the beginning of the œsophagus down into the stomach, and she felt it all over the stomach, but more severely towards the back. She was put under treatment with restricted diet. After about a week she seemed to have recovered. Unexpectedly she was taken with hæmorrhage and vomited almost a pint of blood. I saw her soon after and administered remedies appropriate for that condition. After several hours there was a recurrence of hæmorrhage, smaller in amount, and later still another hæmorrhage. Dr. Fitz saw her in consultation. He gave rather a favorable prognosis.

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[1] See page 533 of the Journal.

She was put upon rectal alimentation and absolute rest given to the stomach. It was impressed on the patient's father and husband, that there were two sources of danger attending gastric ulcer — one, recurring hæmorrhage, which might prove fatal from its amount, and the other, perforation; and while those conditions did not obtain very often, still cases had died suddenly, and they were warned not to be too sanguine. She died about ten hours after that. She made an attempt to vomit and did not vomit much blood, but died with all the signs of exhaustion. I suppose she had a large internal hæmorrhage. The result, wholly unexpected, was one of the things that ought to be borne in mind in connection with the disease. How much the scraping of the œsophagus and gastric mucous membrane by the sharp edge of this crust had to do with it, I do not know. It may not have had anything, but the pain and distressing symptoms dated from that. The case is valuable I think, inasmuch as it conveys a warning not to be too sanguine about the prognosis in cases of gastric ulcer; also of the fact that in many cases of so-called dyspepsia you may have the condition of advanced gastritis or ulceration existing, not suspected, and which at any time, from slight cause, may take on an alarming condition. In hospital practice we know that gastric ulcer is not uncommon. I have had my share of them. I remember one case that terminated fatally from peritonitis, and the existence of the disease was not suspected. On examination there was a perforation.

Dr. H. Jackson: In post-mortem examination it is not very unusual to find evidence of pre-existing ulcer of the stomach. But cases are not recognized clinically as often as they are demonstrated by the existence of the scars. In the course of a good many out-patient clinics, I have examined very carefully the cases which presented themselves with pain in the region of the stomach or with other symptoms suggestive of gastric ulcer, and I have found very few where I could feel sure that such a condition existed. I have examined those cases, especially since a consultation with Dr. Gannett in a case where there was a serious disturbance of the stomach with vomiting in a young girl, hæmatemesis being absent. Dr. Gannett was of the opinion that ulcer of the stomach existed, on account of a small, sharply-defined area of tenderness. My experience is that proof of the disease clinically is seldom obtained, although the records in large hospitals show that many cases are discovered accidentally at autopsy. In the case alluded to, Dr. Gannett advised absolute rest, and she recovered in the course of a few weeks, and has had no recurrence of the trouble. In this case the symptoms suggestive to him of ulcer, were occasional vomiting, but essentially the point of sensitiveness.

Post-Mortem Idrosis. — A writer in the *International Medical Magazine* records the following curious [illegible] of death from [illegible]. "The face of the corpse seemed to be bathed in perspiration, the moisture reproducing itself after being wiped off, in spite of the presence of rigor mortis and other unmistakable evidences of death. This most extraordinary phenomenon was witnessed by several local physicians who also viewed the body. The funeral was on that account delayed several hours until decomposition had fully set in."

AMERICAN OPHTHALMOGICAL SOCIETY.

TWENTY-NINTH ANNUAL MEETING AT NEW LONDON, CONN., JULY [illegible] AND [illegible], [illegible]

[illegible]

THURSDAY. — MORNING SESSION.

REMOVAL OF STEEL FROM THE VITREOUS WITH THE ELECTRO-MAGNET,

by **Dr. E. E. Holt**, Portland, Me.

The writer had previously reported six cases treated by this method. In the present paper he reports three cases. In all, the piece of steel had entered through the anterior chamber, fracturing the lens. The conjunctiva was separated and an incision made through the sclerotic back of the equator of the eye, the knife in each instance striking the foreign body. The electro-magnet was then introduced and the steel removed. The lens was subsequently absorbed and good vision obtained in every case, notwithstanding the fact that in the third case there was pus in the anterior chamber when the case came under observation.

A PERMANENT MAGNET FOR USE IN REMOVING FOREIGN BODIES FROM THE CORNEA

was described by **Dr. Walter B. Johnson**, Paterson, N. J.

It consists of a bar of steel, cone-pointed and elongated at each end. It is charged by rotating it within the magnetic field of a generator. It will continue in full magnetic strength for a long time. It has served an excellent purpose on several occasions in removing small particles of steel from the cornea, which had perforated and almost entered the anterior chamber.

SUPPRESSION OF THE VISUAL IMAGE,

by **Dr. Walter B. Johnson**, of Paterson, N. J.

In convergent stratismas, there is present an amblyopic condition affecting the squinting eye. Hypermetropia was considered by Donders and others as the most frequent cause of convergent squint, exciting excessive efforts at accommodation, resulting in convergence, confusion of images and subsequent mental suppression of visual image in one eye, finally terminating in an amblyopic condition. It has been claimed by Schweigger, Alfred, Graefe and others, that amblyopia is not caused by squint, but exists as a primary or congenital condition. This produces convergence in consequence of confusion of images. The variety of amblyopia in question is apparently a purely physiological condition, the fundus being normal. The amblyopia is sometimes overcome by correction of the visual defects, but vision in the amblyopic eye rarely becomes equal to that of the fellow eye.

The following case was reported. T. K., age nineteen, had been cross-eyed since the age of three years. He has never been able to discern any object with left eye. There was hypermetropia in right eye. Vision in left eye for fingers at six inches. On June 13th, enucleation of the right eye was required as the result of accident. June 18th, vision in left eye had increased to fingers at three feet; examination showed a hypermetropia of 1.50 D. Under careful practice and instruction the vision in left eye rapidly improved, so that by July 1st he could read 20.15 with correcting glass and Jæger No. 1 at twelve inches. Examination three years after the loss of the eye showed that the improvement had continued.

In this case, whatever was the change which led to the loss of vision, it was not structural either in the eyeball or the nerve centre, but was in all probability a pure amblyopia which resulted from the long-continued mental visual suppression.

A CASE OF CONGENITAL CYST OF THE ORBIT, WITH ANOPHTHALMUS,

by DR. GEORGE C. HARLAN, Philadelphia.

The patient was a well-developed and healthy child five months old. The left eye and appendages were perfectly normal. A tumor about the size of a small hen's egg filled the right orbit and projected considerably beyond it. The orbit was fully of adult size and the lids distended to more than twice their normal size. The skin was movable and natural in appearance. The cilia were well developed. The lids were separated about two centimetres. The exposed conjunctiva was congested but not much changed. There was no discharge. There was nothing to mark the position of the cornea. There was no movement in the tumor, no pulsation, and it was incompressible. Fluctuation was decided.

As the tumor was growing and the deformity great, it was decided to remove it. Incision through the conjunctiva gave exit to a quantity of clear watery fluid. The cyst was simple, the outer portion being fibrous and tough and the inner delicate, semi-transparent and bluish.

The child died twenty-four hours after operation, apparently from exhaustion following upon shock.

A careful inspection of the orbit was made after death. There was no connection with the intracranial cavity. There was no indication of any aperture. Nothing resembling an eye could be found in the extirpated cyst, though at the bottom of the sac there was an undefined mass of tissue.

A review of the literature was given; and the author concluded that the tumor was probably formed of the embryonic tissues of the eye, and that it was either an exaggerated hydrophthalmus, or a fœtal encysted coloboma, which by its early inception and enormous growth had prevented the evolution of the eye.

RESTORATION OF THE UPPER EYELID BY MEANS OF A FLAP TAKEN FROM THE CHEEK,

by DR. SAMUEL B. ST. JOHN, Hartford, Conn.

The author demonstrated a method which was applicable to cases in which the upper lid had been destroyed by disease or injury, and in which the lid was removed by operation. In making the flap, the incision commences about half an inch in front of the ear and runs forward below the lower lid about half an inch, and continues until the side of the nose is reached. It is then carried downward until the flap is of sufficient width, and then taken backward. The flap is next separated and secured by numerous stitches to the freshened surface above. The gap left is closed by separating the tissues of the cheek below the wound and sliding them upwards.

Two cases were reported in which this plan had been used with success, and photographs of the patients were shown.

EXECUTIVE SESSION.

The following were elected to membership:

Dr. F. E Cheney, Boston; Dr. J. E. Weeks, New York; Dr. Charles H. Thomas, Philadelphia; Dr. George Fiske, Chicago; Dr. Wm. H. Wilmer, Washington, D. C.; Dr. Edward Fridenburg, New York; Dr. H. B. Chandler, Boston; Dr. Wm. Cheatham, Louisville.

Officers for ensuing year:

President, Dr. George C. Harlan, Philadelphia; Vice-President, Dr. O. F. Wadsworth, Boston; Secretary and Treasurer, Dr. Samuel B. St. John, Hartfort, Conn.; Corresponding Secretary, Dr. J. S. Prout, Brooklyn.

The Society adopted a by-law limiting the membership to one hundred and fifty.

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Recent Literature.

A Treatise on Nervous and Mental Diseases for Students and Practitioners of Medicine. By LANDON CARTER GRAY, M.D. 8vo, pp. xi, 687. With 168 illustrations. Philadelphia: Lea Brothers & Co. 1893.

Dr. Gray's book has been so long announced that our anticipations have for an equally long time been raised concerning it; this is apt to be fatal to a book, but in this case the anticipations have been more than realized. The work bears the stamp of a vigorous personality, it is distinctly original, and above all, it is thoroughly practical in its character. As an introduction to the work, the author gives an excellent chapter on the anatomy of the nervous system, and a chapter on electro-therapeutics. The latter has all the merits of the sections on the treatment of the different diseases. He instructs the reader in the minutest details, as to the best forms of apparatus and the methods of applying electricity, speaking a little dogmatically, but concisely, wisely, and to the point. We know of no better practical guide for the beginner than this chapter affords; indeed, in few works could he find precisely that information in regard to the little details of the management of electricity which are so important, yet which most of us have to learn through uncomfortable experience.

The author has designedly paid little attention to classification. Here we think that he has made a mistake. His question, to be sure, is pertinent, "Of what earthly consequence is the classification of the different forms of disease?" To the man who is looking for advice as to the treatment of a case of acromegaly, it makes no difference whether he finds it in the tenth chapter or the fortieth, but for the student it is, we believe, a distinct advantage to classify the various affections, to consider Friedreich's ataxia with tabes, for instance, and not nearly three hundred pages away.

To pathology much space has been devoted — indeed, in some instances, it would seem as if too much space had been given to discussions of theories — but, for the most part, the results of the most accurate and recent observations are summed up in an admirable manner. Occasionally, however, exceptions must be taken to the author's conclusions, for instance, in the section on muscular atrophy. Our knowledge as to the pathology of muscular atrophy is far from being complete, but it seems to us a step far backward to group together two of the forms of dystrophy, the spinal type of Duchenne-Aran, and Charcot and

Tooth's peroneal type under one heading, and to treat amyotrophic lateral sclerosis and pseudo-hypertrophy apart from them. Pseudo-hypertrophy, too, is said to be without atrophic symptoms, yet two pages later atrophy is spoken of as frequent. Although borderland cases undoubtedly exist, we can certainly distinguish two separate types, one of spinal, and one of muscular origin, and since the admirable treatise by Erb, which is not referred to, we are not warranted in separating pseudo-hypertrophy from the other forms of muscular dystrophy.

In the effort to condense the work into a convenient space, something, we fear, has been lost in the sections on symptomatology. The chapter on diseases of the peripheral nerves is inadequate. A single page is devoted to the symptoms of multiple neuritis, but no attempt is made to differentiate the different forms; sciatica gets but a few lines, and the different peripheral palsies are hardly spoken of. As a rule, however, the clinical sections are much more adequate.

Especial care has been given to the sections on treatment, and these form one of the most valuable parts of the book. Indeed, we know of no work on the subject of nervous diseases which gives such complete and detailed directions for treatment. The author is far from being a therapeutic nihilist — he is rather an enthusiast — but he is not led away by new fancies. He is so guarded in endorsing new methods of treatment that he makes no mention of the use of the thyroid gland in myxœdema. Nevertheless, in every section the physician will find all the minutiæ of treatment carefully detailed, and, although the author may be an enthusiast, his enthusiasm has the justification of practical success.

The illustrations deserve more than a word of praise. Many of them are original, and the execution is admirable. Bibliographical lists are attached to many of the sections, but these seem often of doubtful value. Important works are cited in the text which find no mention in the bibliography, while in some cases, wholly irrelevant works are inserted.

While other works are perhaps better for the student who is seeking after a general knowledge of diseases of the mind and nervous system, owing to their better classification and fuller symptomatology, we know few works which will give better satisfaction to the practitioner who is seeking aid in the practical management of the individual patient.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., LL.D., F.R.C.P., Sixth American, from the eighth English, edition, with notes and additions by Robert P. Harris, A.M., M.D.

The present edition of this well-known treatise, has been so thoroughly revised and rewritten as almost to amount to a new work, yet the chapters which are most thoroughly new, that is, those which treat of subjects in which the advances of recent years have been most marked, are precisely those in which an American would see most to criticise.

The sections which relate to anatomy and physiology, pregnancy, the phenomena and mechanism of labor, and the more familiar complications of labor and the puerperium are full, thorough and carefully rewritten and wholly deserve the success which the book has already attained.

In those which treat of the management of labor the author certainly departs widely from the over-conservative and timid doctrines which have heretofore characterized English obstetrics, yet to an American, his methods and the treatment which he recommends, often seem somewhat antiquated. The same must be said of the section on operative obstetrics, and indeed of much of the treatment that is recommended throughout the book.

The section on operative obstetrics would call for still stronger criticism of the usual English timidity in obstetric operating were it not for the frequent insertions of the American editor. In speaking of a book edited by Dr. Harris, it is, of course, unnecessary to state, that the chapters which treat of the abdominal operations, and of symphyseotomy, are fully abreast of the world's progress, and in every way admirable.

It is curious to an American to see so high an authority condemning the use of traction on the cord, during the third stage of labor, and advocating Crédé's method of expression, almost as a novelty, and in terms which imply that he stands alone in this matter.

Under the treatment of pregnancy before rupture, the author sanctions the use of electricity, and decidedly recommends puncture of the sac, though he concedes that cœliotomy may be useful in the hands of a few operators of wide experience. Certainly few American authors would think this recommendation, in the words of the preface, "A satisfactory guide to the most recent advances in obstetric medicine."

Under septicæmia it is strange that, though the author concedes the septic origin of most cases, he still leans strongly to the belief that a puerperal fever of unknown (or zymotic) origin is still sometimes seen.

His directions for the treatment of sepsis are excellent, though he perhaps errs on the side of over-caution in the local treatment, and does not lay sufficient emphasis on the importance of early diagnosis and treatment.

Of the book as a whole it may be said that it will furnish admirable collateral reading to American medical students whose instruction on treatment is derived from other sources; and that on questions of treatment, the book is enormously in advance of most, if not all, other English text-books.

The Medical News Visiting List for 1894. Philadelphia: Lea Brothers & Co. 1893.

The Medical News Visiting List for 1894 has been thoroughly revised and brought up to date in every respect. The text portion (32 pages) contains the most useful data for the physician and surgeon, including an alphabetical table of diseases, with the most approved remedies, and a table of doses. It also contains sections on examination of urine, artificial respiration, incompatibles, poisons and antidotes, diagnostic table of eruptive fevers and the ligation of arteries. The classified blanks (176 pages) are arranged to hold records of all kinds of professional work, with memoranda and accounts.

The Surgery and Surgical Anatomy of the Ear. By Albert H. Tuttle, M.D., S.B. (Harv.). Pp. 96. (Physicians' Leisure Library.) Detroit: George S. Davis. 1893.

The twenty-eight photogravure illustrations in this book are very good, and valuable for reference; but as much cannot be said of the text, which abounds in mistakes in spelling. The book is principally a *résumé* of otological work, especially of recent date.

THE BOSTON

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A TEMPERATE WORD FOR FOOT-BALL.

A somewhat intemperate denunciation of the game of foot-ball has manifested itself recently in the editorial columns of medical and daily newspapers. The object aimed at, in so far as there is an object or a suggestion apart from sensational writing, seems to be the abolition of the game. Now, if there is one thing that is quite certain, it is that the game of foot-ball will continue to hold a prominent place among out-door sports, and that it will preserve for some years to come much of its present form. Those who know anything about the game, and those who know much about young men and youths, will demand quietly, firmly, persistently — without fuss and without exaggeration — that the game be regulated and that the players behave themselves; and the game will be regulated and the players will behave themselves. There is no very great difficulty and no inherent impossibility in this. In proof thereof, witness the last annual match between the university elevens of Harvard and Yale at Springfield. Certainly, there never was more eager interest and feeling, whether among the actors or spectators, and yet there was no unfairness, there was no brutality, there were no accidents which could be regarded as in any degree serious. It was perfectly well understood that any player who allowed his enthusiasm to get the better of his discretion would be promptly and impartially laid aside.

The open-air sports in which university teams compete with other university or college teams, are a direct and indirect stimulus to all round physical development and well being, to self-denial, self-control, to sober and temperate living among a *very large number* of the members of the college or the university — not simply among the immediate members of the college team itself. This statement can be amply substantiated by details from the different classes, either at Cambridge or at New Haven.

There is, it is true, a period of some weeks in the autumn when the time of the members of a university foot-ball team is in much demand for other exercises than those connected with "learning," but there is one thing that their critics should know if they do not, and should remember if they have forgotten — namely, that a student who is on probation in any of his studies can have no place on a college team; moreover, it is considered a discredit to a man who is needed and would otherwise be placed, to allow himself to be thus disqualified. This obtains at Cambridge, and we believe, also, at New Haven. From this point of view the out-door sports have been a distinct stimulus to study.

During the last four years a good many matches have been played at Cambridge and elsewhere by Harvard teams. The following are the casualties reported by surgical authority: four fractures of the metacarpal bones, one fracture of the fibula, two dislocations of the elbow, one dislocation of the humerus, one probable fracture of a rib. Such injuries when received by men in training are recovered from in half the time necessary for recovery in other subjects.

The questions of betting and of gate-money have no more to do with foot-ball than with other games or sports. New York furnishes an immense attendance at high prices, and is a favorite place for college contests. It is not a good place in which to let loose a lot of excited young men. Harvard has recognized this fact and has acted accordingly. To blame foot-ball and demand its abolition, because some imprudent students are disorderly, and other too prudent students speculate in tickets, is a confusion of causes as of remedies.

We do not hesitate to say that there is less idleness, less dissipation, less brutality, less meanness and trickery, and a better physical condition among college students with foot-ball than without it, with the out-door games than if their place were taken by compulsory calisthenics and gymnastics.

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ENTERIC FEVER IN THE TEES VALLEY.[1]

The Tees Valley is a district on the east coast of England, in the counties of Durham and Yorkshire, and contains about a half-million inhabitants.

The story contained in this exceedingly interesting and thorough report is the often repeated one of an epidemic of typhoid fever due to pollution of the domestic water-supply. In his introduction to the report, Dr. Thorne Thorne, the chief medical officer, says:

"One factor alone is found to be common to the places thus suffering exceptionally from enteric fever, and this is the use of the water pumped from the River Tees. This river is found to be at all times subject to conditions of the grossest fouling by reason of the fact that human excreta and other filth are knowingly and deliberately conveyed to it. Opportunities for the access of the specific material of enteric fever to the river had been constantly recurring; and, immediately antecedent to the epidemic outbursts, sudden floods washed vast masses of the filth which had been accumulating on the banks of the river, down the stream, up to, and past, the points of intake from which the water was being pumped, and, after filtration through sand and gravel, delivered to certain populations. These populations it was who suffered from the two exceptional prevalences of enteric fever. Seldom, if ever, has a case of the fouling of water intended for human consumption, so gross or so persistently maintained, come within the cognizance of the medical department; and seldom, if ever, has the proof of the relation of the use of water so befouled to wholesale occurrence of enteric fever been more obvious and patent."

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[1] By Dr. F. W. Barry. Supplement to the Twenty-first Annual Report of the Local Government Board, 1891-92, pp. 150. London, 1893.

The details of the report are of interest also, as bearing upon the question of the viability of the typhoid poison in running water, and the problem of the value of filter-beds as measures of protection and means of purifying polluted waters. At some of the water-works in the Tees Valley, depositing-tanks and filter-beds were in use. At Darlington, in the case of the older filter-beds, the water passes through six feet and six inches of filtering material, — three feet and six inches of gravel, varying in size from apples at the bottom to shot at the top, and above the gravel three feet of sand. In the newer filters the water passes through five feet and six inches of material, — three feet of gravel, two feet and six inches of sand. The rate of filtration is from three to four inches per hour, or about forty-five gallons per twenty-four hours per superficial foot of filter. The surface of each of these filters is supposed to be cleansed once in six weeks, and the whole sand in each filter washed on an average once in three years. Apparently, in time of flood these dispositions offered insufficient protection.

This, like Dr. Barry's previous report upon the prevalence of small-pox in Sheffield in 1887–88, gives evidence of the greatest thoroughness and care in its preparation, and is very fully illustrated with tables, diagrams and charts.

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MEDICAL NOTES.

A Very Small Epidemic. — Considerable comment has been made upon the declaration of the health commissioner of Chicago, that small-pox is now epidemic in that city. The number of cases now reported is only eighteen.

Yellow Fever. — Cases of yellow fever still continue to occur at Brunswick, Ga., in spite of the frost at night. They average about two each day, and are chiefly among the white population.

Mr. Gladstone's Physician. — Dr. William H. Broadbent has been chosen physician to Mr. Gladstone, in place of Sir Andrew Clark.

The Maybrick Case Again. — There has been a renewed interest in England in the case of Mrs. Maybrick, who was convicted and is now in prison for poisoning her husband, owing to the statement of a Birmingham chemical firm, that shortly before the death of Mr. Maybrick they analyzed a quantity of German glycerine offered for sale to them, and finding it to contain arsenic, refused to purchase. Recently they have learned that it was sold to parties in the midland counties, and so may have been dispensed to Mr. Maybrick.

Prize of the American Neurological Association. — The American Neurological Association offers a prize of $200 for the best essay on any subject connected with Neurological Science. This competition is open to physicians who are legal residents of States in North and South America. Essays must be sent to the Secretary of the Association, Dr. Græme M. Hammond, on or before the first day of May, 1894. Each essay shall be accompanied by a sealed envelope containing the name and address of the author, and bearing on the outside a motto, which shall also be inscribed upon the essay. Essays shall be type-written, in either the English or French languages, and with the pages securely fastened. The Council of the Association reserves the right to reject any or all essays judged unworthy of the award. Each essay must exhibit original research, and none will be accepted that has previously been published.

An Important Immigration Decision. — Superintendent Stump, in reply to the request of the Cunard Steamship Company to be represented at the hearing in the case of a steerage passenger returned to them under the immigration law, has ruled that, "The right of appeal under the acts of Congress, of 1891 and 1893, is limited to the immigrant himself, or some one in his behalf and representing him in the one case and to one of the inspectors constituting the board of special inquiry in the other, and it is the opinion of this bureau that no other persons are proper parties to the record, or are entitled to participate in the trial or hearing of said cases. The judgment rendered affects only the immigrant personally, touching his right to land, and although incidentally it may be attended by consequences by which the steamship companies and others may be affected pecuniarily, they are not proper parties to the proceedings, and have no such standing in court, as to enable them to participate in the original trial or ask for a re-hearing or pray for an appeal."

The Use of Reading in Medicine. — In his introductory lecture on "The Principle and Practice of Medicine," at St. Bartholomew's Hospital, Dr. Norman Moore, after speaking of the wide range of reading which is open to the physician and the scanty time for study, summed up the value of medical reading as follows: "There is scarcely any medical book, good or bad, which may not be looked through to some useful purpose, if read in the light of the observations of the reader; but there are a few great authors who illuminate the mind of their readers and make them see clearly what they had often looked at, but never before fully understood. These are worth reading often. Heberden, in England, and Trousseau, in France, are of this rare merit. After its primary object of making a man ready to observe, the true use of reading in medicine is to make him think. The difference between perfect and imperfect knowledge is not so much in the facts known as in the way they are treated by the mind. Perfect knowledge is that which has been thought over; imperfect knowledge that which has only been remembered. This is particularly noticeable in medicine where a few observations, well thought over, will make a man far more useful than the mental retention of abstracts of hundreds of books."

BOSTON AND NEW ENGLAND.

Clearing of Boston Docks. — The work of cleaning and dredging out the accumulated filth in the docks along Atlantic Avenue in Boston, which was directed by the Board of Health, has been finished. The deep layer of rotting fish waste has been for a long time a menance to the public health, and the Board of Health has issued an order forbidding the fish dealers to empty their refuse into the docks.

A Contagious Hospital for Waltham. — After a delay of nearly two years since the Board of Health of Waltham seriously urged the erection of a suitable hospital for contagious diseases, work has been begun on the new building. The immediate reason for beginning the work is the existence of an unusually large number of cases of diphtheria.

Diphtheria in South Braintree. — The Pond Street school in South Braintree has been closed on account of the prevalence of diphtheria in the district. Three fatal cases have occurred already among the pupils of one class-room.

Dartmouth Medical College. — The graduating exercises of the Medical Department of Dartmouth College took place Tuesday evening, November 21st, a class of twenty-eight receiving degrees. The Medical Faculty have just passed the following vote: "That at the end of one full year of the study of medicine and one course of lectures in this school, an examination *will be required* in descriptive anatomy, physiology and chemistry. That at the end of *two* full years of the study of medicine in this school, an examination will be required in descriptive and regional anatomy and further examinations in physiology and chemistry. The examinations so passed, if satisfactory, shall stand as final."

NEW YORK.

The Saturday and Sunday Hospital Association held a meeting at St. Luke's Hospital on November 20th, when a special committee which had been appointed for the purpose some time previous, reported progress in the matter of organizing similar associations in Chicago, St. Louis, and other large cities. At this meeting it was proposed that on Thanksgiving Day contribution boxes should be placed at the entrance of the grounds where the great Yale-Princeton foot-ball game is to be played.

Street-Car Accidents. — The introduction of he electric and cable system of surface cars ha been attended with an increased loss of life. The latest victim of the trolley cars is a policeman in Brooklyn. The previous week a seven-year-old child was decapitated, and it is stated that at least forty-nine fatal accidents have been caused by the Brooklyn trolley lines during the last twelve months. On November 24th, Dr. Paul Hoffman, assistant superintendent of the city public schools, was thrown under a cable car, and only by a miracle escaped death. As it was, four of his ribs were broken, and he was otherwise severely injured.

Presbyterian Hospital Deficit. — The twenty-fifth annual meeting of the Board of Managers of the Presbyterian Hospital was held November 18th. The reports showed that during the past year 1,876 more patients were treated than in the previous year, and that there are now 46 pupils in the training school for nurses attached to the hospital. While the expenditures for the year amounted to $147,875, the receipts were only $58,063; so that there is a deficit of $89,812.

Consumption of Water. — The report of the commissioner of public works for the third quarter of 1893, shows that the city now consumes 180,000,000 gallons of water daily, and that during the quarter, (the rain-fall having been small), nearly half of the daily supply was drawn from the water stored in the great reservoirs.

Reorganized Ambulance Corps. — An order has been issued by the Adjutant-General of the State, abolishing the old Ambulance Corps of the National Guard, which contained about four men from each company of militia, and substituting therefor a smaller and better trained hospital corps.

The New Maternity Hospital. — On November 12th, Archbishop Corrigan dedicated the new Maternity Hospital of the Sisters of Misericordia on East 86th Street, with elaborate religious ceremonies, after which there was a public reception in the wards. The hospital is a five-story brick structure, with stone trimmings, and is 138 feet long and 73 feet in width. The cost of the new wing was $92,000, and it can accommodate 150 patients.

Unusually Low Mortality. — The remarkable record of the week ending November 11th, when the number of deaths was only 641, representing an annual death-rate of 17.46 per thousand of the estimated population, the smallest ever reported, was beaten by that of the week ending November 18th, when the number of deaths was but 612, representing an annual death-rate of 16.66. The average mortality for the corresponding weeks of the past five years was 703 deaths, representing an annual death-rate of 19.14; and the fact is now assured, that the year 1893, as a whole, will show the lowest death-rate since 1883. During the week referred to, three cases of death from influenza were reported; and there were 490 cases of contagious diseases, with 87 deaths, against 419 cases and 78 deaths in the week ending November 11th

There was an increase of 42 cases of measles, 19 cases of scarlet fever, 9 cases of diphtheria and five cases of small-pox. To offset this, there was a decrease in the deaths from phthisis, pneumonia and some other diseases.

◆

Miscellany.

THE RELATION OF THE BACTERIUM COMMUNE COLI TO APPENDICITIS.

Dr. George R. Fowler, of Brooklyn, makes a preliminary report to the New York *Medical Journal*, upon the relation between the bacterium commune coli and appendicitis, a relation which he considers one of cause and effect. His belief is based upon the observations of eight cases operated upon for appendicitis. Cultures were made at once from the seat of disease and from the appendix.

"Of the entire series of eight cases, seven gave pure cultures of the bacterium commune coli.

"In one case the bacillus pyogenes fetidis was obtained, in addition to the bacterium commune coli (examination made by Dr. E. H. Wilson, pathologist to St. Mary's Hospital).

"In four cases encysted sero-fibrinous deposits (encysted intraperitoneal suppurative peritonitis) were present.

"In two cases appendical abscess existed.

"In one case general sero-purulent peritonitis existed.

"In one case no pus or serum was found. A peri-appendicitis and serous parietal appendicitis existed only; the mucous membrane lining the appendix was normal. No fæcal matter was found in the interior of the tube. The cultures were made from a patch of lymph on the peritoneal surface of an adjoining portion of the cæcum, to which the tip of the appendix had become adherent. This culture gave pure bacterium commune coli. Attempts to procure the micro-organisms from the sections of the wall of the appendix were unsuccessful, although more than a hundred sections were made and examined by Professor Van Cott and Dr. Wilson."

◆

THE SAMUEL D. GROSS PRIZE.

The Quinquennial Prize of One Thousand Dollars under the will of the late Samuel D. Gross, M.D., will be awarded by the Philadelphia Academy of Surgery, January 1, 1895.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor, who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before January 1, 1895.

Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

◆

JAMBUL IN DIABETES.

Graeser has reported to the Therapeutic Association of the lower Rhine the results of his study of jambul as a remedy for diabetes. The eugenia jambulana, a tree sixty to eighty feet high, belonging to the family myrtaceae, is indigenous to all the East Indies. For a long time the seeds and bark have been used in decoction by the natives for diabetes. The fresh juice of the leaves is astringent and has some value in dysentery. The experiments of Graeser were conducted upon dogs rendered artificially diabetic by Phloridzin. Both the powdered seeds and an extract from the fruit and bark were used. The reduction in the sugar elimination was marked in all cases. Any unpleasant effects from the drug were rare. In cases of diabetes mellitus in men, the administration of jambul in doses of thirty grammes a day did not give uniform results, though in each case the symptoms were much relieved. The amount of urine in all cases was diminished, in one case from ten litres to four per diem. The hunger and thirst and headache ceased and the patients gained in weight. The variable effects depended upon the differences in strength of the drugs used. Seeds from jambul of British India were less potent than those from the Java plant. Extracts made from old or dried seeds were not to be relied upon. The active principle has not yet been determined.

◆

AN EPIDEMIC OF PRIAPISM.

Dr. Meynier, a French army surgeon, has recently published a curious bit of medical experience. A company of troops *en route*, having halted for some time at El Hacaiba, the men were nearly all seized with priapism and prolonged and painful erections. Considering that an absence for some time from a garrison town might be the cause, the surgeon ordered light diet and flaxseed tea. The condition, however, became steadily worse. The erections continued throughout the company, and the men began to complain of great lassitude and dryness in the throat. Finally many had marked hæmaturia. Careful investigation disclosed the real cause of the trouble. During their leisure the men had been hunting frogs at a neighboring stream. The poplar and willow trees along the banks were found to be thickly covered with coleoptera of the family of cantharides, *meloe*. Chilled in the early morning they fell by thousands into the water where they were gladly and greedily devoured by the frogs — which later gave similar pleasure to the soldiers. The taste of the flesh was in no way injured, but its effect upon the genito-urinary system of the divers was disastrous. The removal of frogs' legs from the bill of fare put an end to the curious epidemic in a few days.

◆

A PROLONGED FAST.

THERE is reported from Russia a case of unusually long fasting.[1] A young girl of seventeen was overtaken by night near the village of Ruzino in Moscow on the 24th of last November. She took refuge under a small outbuilding covered with straw. During the night it snowed violently, and in the morning the girl was unable to force her way from under the snow. The first day she ate five bits of bread she had with her, after which she had no food but the snow. Fifty-one days later she was discovered buried under three feet and a half of snow. On being taken to the hospital on January 14th, she was in a state of extreme exhaustion and unable to move a limb, though entirely conscious. There was a general cutaneous anasarca. The mucous membranes were excessively pale, and there was no trace of panniculus adiposus. The muscles were much atrophied. The respiration was 26; the pulse 84, small and feeble; the temperature 38° C. The cardiac sounds, though weak, were clear, and there was an anæmic murmur in the cervical vessels. The urine was concentrated, but contained no sugar or albumen. For the next two days she remained semi-conscious and somnolent, but rapidly recovered, and at the end of a week was able to take ordinary hospital diet.

◆

SIR ANDREW CLARK.

ALTHOUGH the death of Sir Andrew Clark has robbed the medical profession of one of its ablest and most honored members, it has served to bring to general notice the details of a life which must always serve as an inspiration and encouragement to all who know of its marvellous industry and power.

Andrew Clark was the only child of a highly educated physician bearing the same name, and was born in Aberdeen on October 28, 1826. He lost his mother at birth and his father while still a little child. He was educated by his uncles, but passed a lonely youth, serving as apprentice to a druggist. He studied medicine in Aberdeen and Edinburgh where he was a brilliant scholar in all branches of his work. His services as assistant to Dr. Bennett in the pathological work of the Royal Infirmary, and later as assistant demonstrator of anatomy under Dr. Knox were of lasting advantage to him. Brilliant, highly trained and eager to devote himself to the scientific study of pathology his career was now seriously menaced, as signs of rapidly advancing pulmonary disease appeared with hæmoptysis. To gain outdoor life he joined the navy and after a few voyages was appointed pathologist to the Naval Hospital at Haslar, where he served for four years, a contemporary worker with Mr. Huxley. In 1853 he went to London and gained the appointment as Conservator of the Museum at the London Hospital. At that time he intended not to practise but to give his attention to pathology, — "to write a pathological work and construct an atlas of pathological specimens and then to die," as he said. He devoted himself with zeal to the work of re-examining with the microscope the large collection of specimens in his care, often spending a week over a single one. The following year he took his degree of M.D., and became a Member of the Royal College of Physicians. He was then elected an assistant physician to the hospital, and began the private practice of medicine. His health was so exceedingly poor that he was not expected to live long, and he had no family or influence to start him in his profession. His own indomitable will and energy, his determination "to die in harness," and his great ability, were all he had to start with. His work in the out-patient department was wonderfully brilliant, his diagnosis being thorough and accurate in the minutest details, yet made with great rapidity. He was at the hospital all day, and often detained his patients till late in the evening. Almost all were made to bring their urine for examination, and every now and then one had to produce his fæces also. His zeal in minute investigation literally knew no bounds. In addition to this work he served as pathologist and lecturer on physiology. In 1858 he was chosen a Fellow of the Royal College of Physicians, and in 1866 full physician to the London Hospital. The cholera epidemic in East London that year was the starting-point of Dr. Clark's great fame. The London Hospital received cholera patients, and Dr. Clark was conspicuous for his devotion to the sick, "working almost day and night in the wards or post-mortem room." It was at this time he became acquainted with Mr. Gladstone, to whom he soon became medical adviser and a most intimate friend. Up to this time his practice had been only moderate and chiefly among men of letters and science, but when he moved to Cavendish-Square his reputation and association with Mr. Gladstone led to an enormous increase in the number of his patients, and he soon became the foremost physician in London. His office practice, beginning at eight A. M., often lasted without interruption till two or three P. M. All his correspondence, which was very large, was written (often after midnight) with full directions in his own hand, a task he was able to fulfil only by "his powers of rapid writing and unfaltering powers of clear expression, his letters having scarcely a single correction or erasure." For twenty years he served as physician to the hospital at a great sacrifice of time and strength. He was led to do this by his unbounded enthusiasm for his work and a "strong conviction that to give up hospital service was to lose the habit of exact research," which could not be carried out in private practice.

His life was one of constant enthusiastic overtaxing of his strength, but was rewarded by an unbroken series of honors. He was successively the Croonian, Lumleian and Lettsomian Lecturer at the Royal College of Physicians, and a Councillor, Examiner in Medicine and Censor. In 1888 he was made President of the College, holding the office till his death. "Those who did not know him well, or had not been brought into contact with him publicly, had no idea of his great qualifications for this office. His dignity of bearing, his masterly power of conducting the affairs of a large meeting, his fluency and propriety of speech, fitted him in a peculiar manner for presiding over the college. Whether in the presidental chair, or as the representative of the college on any public ceremonial or social occasion, he always felt and displayed the dignity and responsibilities of his position, and no sacrifice was too great to enable him properly to discharge the duties of his office, although the time required each day was a serious tax upon his busy life." "There has been since the time of Sir Thomas Watson," wrote a distinguished Fellow a week or so before Sir Andrew's death, "no president who has discharged the duties of the office with such ability and dignity."

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[1] Lyon Medical, No. 44, 1893.

The great secret of his success as a private practitioner was his careful attention to small details; and his "remarkable faculty of listening patiently to all that had the privilege of finding access to him, and he hardly ever evinced any symptom of impatience or hurry. He not only listened, but remembered. . . . He never slurred a point in any case and never passed over a detail which suggested itself to him as being capable of being elaborated for the benefit of his patient. When in the fullest practice he would often spend half an hour over the complete investigation of a puzzling symptom, while his waiting-rooms were full to overflowing." His enthusiastic encouragement of his patients was another factor. He believed in fighting disease, and he inspired those who suffered from it with some of his own courage and hope.

The crowded occupations of his life left him little time for social duties; but his company and conversation were charming and attractive. His naturally critical and controversial mind often led him into discussions which nearly always took the direction of theology and speculative philosophy. The only relaxation he indulged in was reading, which he was able to indulge in whilst riding in his carriage or on railway journeys. Recreation in the true sense he hardly understood.

One of his colleagues says of him in the *British Medical Journal:* "Next to his warm-heartedness, the faculty which distinguished Clark was his limitless energy. I never saw him seem tired. He may have looked so occasionally, but he never allowed his bearing to reveal it. The impression which he generally managed to convey was that the engagement in hand, whether a committee or a consultation, was the very one to which he had been looking forward all day with expectant pleasure. He considered himself a very punctual man, but in reality was not so. He took too much interest in what he was about to be always careful of the passing minutes. In all that concerned money he was liberal, and his unostentatious charities were, I feel sure, very large."

Of his relations to his professional friends the *Lancet* says: "By the members of his own profession in every degree he will be remembered for his kindness and courtesy. Not only as a consulting physician was he able to enter into the difficulties of the general practitioner with unusual intuitive sympathy, but his valuable and overloaded time was always at the service of his colleagues in his capacity as a private physician, and, although he would not have admitted the accusation, his purse was as generously offered as his time. His early training in a hard school had left him full of gratitude for his success, and desirous to display it by generous attention to the claims of those whose work had met with less ample reward."

"There have been greater pathologists than Sir Andrew Clark. There have even been greater therapeutists. Perhaps there have been greater diagnosticians. But there have been few greater physicians, few who have made a deeper impression on the public mind and who have done more to raise the influence and to assert the claims of the medical profession."

METEOROLOGICAL RECORD,

For the week ending November 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Baro-meter Daily mean.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Direction of wind [illegible]	[illegible]	[illegible]	[illegible]	Weather.* [illegible]	[illegible]	Rainfall in inches.
S..12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	S.[illegible]		[illegible]	[illegible]	[illegible]	
M..13	30.11	[illegible]	[illegible]	[illegible]		[illegible]	76	S.	S.W.		12	[illegible]	O.	
T..14	29.95	[illegible]	[illegible]	43	[illegible]	[illegible]		W.	S.W.		[illegible]	C.	O.	
W..15	29.61	38	42	[illegible]		[illegible]		N.W.	W.	[illegible]		R.	C.	[illegible]
T..16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			W.	W.	15	11	[illegible]	[illegible]	
F..17	[illegible]	4[illegible]	[illegible]					S.W.	S.W.	10	[illegible]	[illegible]	O.	
S..18	[illegible]	4[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	W.	10	12	F.	[illegible]	
[illegible]														

*O., cloudy; [illegible] N., snow. [illegible] week.

RECORD OF MORTALITY

For the Week ending Saturday, November 18, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from. Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,891,306	[illegible]	222	17.60	12.18	1.76	1.76	10.40
Chicago . . .	1,438,000	[illegible]	196	[illegible]	[illegible]	.72	2.16	7.68
Philadelphia .	1,115,562	[illegible]	128	12.00	14.44	.96	1.68	8.64
Brooklyn . .	978,394	[illegible]	[illegible]	14.62	17.34	1.36	2.72	5.78
St. Louis . . .	[illegible]							
Boston . . .	487,397	[illegible]	[illegible]	15.92	19.20	1.44	2.88	6.72
Baltimore . .	[illegible]							
Washington .	308,431	[illegible]	[illegible]	13.68	6.84	1.14	[illegible]	3.42
Cincinnati . .	[illegible]	108	[illegible]	[illegible]	[illegible]	1.84	[illegible]	6.44
Cleveland . .	[illegible]	[illegible]	[illegible]	[illegible]	9.10	1.30	[illegible]	[illegible]
Pittsburg . .	[illegible]	104	28	[illegible]	12.48	[illegible]	[illegible]	1.92
Milwaukee . .	[illegible]	74	31	21.60	[illegible]	2.70	1.35	12.15
Nashville . .	[illegible]	[illegible]	15	[illegible]	15.15		6.06	9.09
Charleston . .	65,165	[illegible]	[illegible]	9.09	3.03	9.09	—	—
Portland . . .	40,000	4	0	—	25.00	—	—	—
Worcester . .	96,217	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	5.26
Fall River . .	87,411	31	10	25.84	29.07	19.38	—	—
Lowell . . .	87,191						—	—
Cambridge . .	77,100	31	11	16.15	19.25	6.46	—	—
Lynn	[illegible]	[illegible]	[illegible]	20.00	[illegible]	—	[illegible]	6.66
Springfield . .	48,684	9	1	11.11	10.00	—	11.11	—
Lawrence . .	48,355	—					—	—
New Bedford .	[illegible]	14		[illegible]	14.28	[illegible]	[illegible]	—
Holyoke . . .	[illegible]	[illegible]		[illegible]	11.11	[illegible]	5.55	11.11
Salem	32,233	8		[illegible]	[illegible]	—	—	12.50
Brockton . .	32,140	3	0	—	—	—	—	—
Haverhill . .	31,396	[illegible]	[illegible]	—	[illegible]	—	—	—
Chelsea . . .	30,264	1	[illegible]		10.00	—	—	—
Malden . . .	[illegible]			—	—	—	—	—
Newton . . .	27,556					—	—	—
Fitchburg . .	[illegible]					—	—	—
Taunton . . .	26,972	5	1	—	—	—	—	—
Gloucester . .	[illegible]			—	—	—	—	—
Waltham . .	22,058	6		—	[illegible]	—	—	—
[illegible] . . .	19,642					—	—	—
Pittsfield . .	[illegible]		[illegible]	—	—	—	—	—
Everett . . .	[illegible]	6		16.66	[illegible]	[illegible]	—	—
Northampton .	[illegible]				—			
Newburyport .	14,073	1				—	—	—
Amesbury . .	[illegible]	[illegible]				—	—	—

Deaths reported [illegible] principal infectious diseases (small-pox, measles, diphtheria and croup, [illegible] 4[illegible]1, [illegible] and croup 200, typhoid fever 67, diarrhœal diseases 51, scarlet fever 33, [illegible] 16, erysipelas 8, small-pox 1.

From scarlet fever Pittsburg 7, Chicago 6, New York, Brooklyn, [illegible] Philadelphia, Cleveland, Nashville and New Bedford 1 each. From cerebro-[illegible] Worcester [illegible] each, [illegible] Philadelphia, Brooklyn, Milwaukee and Cambridge and Lynn 1 each. From [illegible] Milwaukee and Northampton 1 each. From whooping-cough New York 4, Chicago and Worcester 3 each, Brooklyn, Pittsburg and Cambridge 2 each. From erysipelas Chicago 4, Boston 2, New York and Brooklyn 1 each. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,527,846, for the week ending November 11th, the death-rate was 21.5. Deaths reported 4,254: diphtheria 127, whooping-cough 99, measles 78, fever 73, scarlet fever 66, diarrhœa 50, small-pox (Birmingham 4, Bristol and Bradford 3 each London and West Ham 2 each, Hull 1) 15.

The death-rates ranged from 11.4 in Plymouth to 28.5 in Wolverhampton; Birmingham 27.1, Bradford 20.5, Croydon 13.4, Halifax 15.9, Hull 24.5, Leeds 18.8, Leicester 17.2, Liverpool 23.0, London 21.4, Manchester 21.2, Newcastle-on-Tyne 24.6, Nottingham 22.0, Sheffield 22.6, West Ham 23.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM NOVEMBER 18, 1893, TO NOVEMBER 24, 1893.

Leave of absence for one month on surgeon's certificate of disability, with permission to go beyond the limits of the department, is granted **First-Lieut. Madison M. Brewer**, assistant surgeon, U. S. A.

The leave of absence granted **Major Curtis E. Munn**, surgeon, U. S. A., is extended two months.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 25, 1893.

M. W. Barnum, assistant surgeon, from "Richmond" and to the "Kearsarge."

J. W. Ross, surgeon, from Pensacola Hospital, proceed home and wait orders.

L. B. Baldwin, surgeon, from the "Michigan" and to the Pensacola Hospital.

J. S. Sayre, passed assistant surgeon, to the "Michigan."

A. C. Cabell, passed assistant surgeon, from the "Kearsarge" and leave for three months.

G. P. Lumsden, passed assistant surgeon, from the iron clads, Richmond, Va., and to the "Kearsarge."

F. A. Hessler, passed assistant surgeon, from the "Vermont" and to the iron clads, Richmond, Va.

James F. Leys, assistant surgeon, from the laboratory, Brooklyn, N. Y., and to the "Vermont."

M. R. Pigott, assistant surgeon, from the "Kearsarge" and to the "Richmond."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING NOVEMBER 18, 1893.

Purviance, George, surgeon. To report at Bureau, for temporary duty. November 7, 1893. To inspect Reedy Island Quarantine. November 14, 1893.

Carter, H. R., surgeon. To proceed to Jessup, Ga., for temporary duty. November 10, 1893.

Banks, C. E., passed assistant surgeon. To rejoin station, Portland, Me. November 3, 1893.

Brooks, S. D., passed assistant surgeon. To inspect service at Ashtabula, O., and then to rejoin station at Cleveland, O. November 13, 1893.

McIntosh, W. P., passed assistant surgeon. Granted leave of absence for twenty-three days. November 17, 1893.

Magruder, G. M., passed assistant surgeon. Granted leave of absence for thirty days. November 1, 1893. To proceed to New Orleans for duty. November 15, 1893.

Goodwin, H. T., passed assistant surgeon. Leave of absence extended thirty days. October 24, 1893.

Cobb, J. O., passed assistant surgeon. Leave of absence extended twenty days. November 14, 1893.

Guiteras, G. M., passed assistant surgeon. Granted leave of absence for thirty days. November 14, 1893.

Perry, J. C., passed assistant surgeon. To rejoin station, Vineyard Haven, Mass. November 3, 1893.

Stewart, W. J. S., assistant surgeon. To proceed to Reedy Island and Delaware Breakwater Quarantine Station, for temporary duty.

Strayer, Edgar, assistant surgeon. To rejoin station, Boston, Mass. November 3, 1893.

CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society at 19 Boylston Place, on Thursday, December 21, 1893, at 2 p. m.

Candidates should make personal application to the Secretary and present their medical diploma, or its equivalent, at least three days before the examination.

For further particulars, apply from 2 to 3 p. m., to

James J. Minot, M.D.,
188 Marlborough Street. *Secretary.*

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, December 4th, at 8 o'clock.

Dr. W. E. Fay will report a "Case of Endocarditis." Discussion by Drs. J. J. Minot, W. F. Temple and F. Coggeshall.

Dr. E. J. Forster will report a "Case of Unique Laceration of the Cervix."

Election of associate members.

John C. Munro, M.D., *Secretary.*

Massachusetts Medical Society, Suffolk District. — The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, December 6, 1893, at 8 o'clock.

Appendicitis will be the subject for discussion. Dr. M. H. Richardson will open this discussion with remarks based upon one hundred and eighty-one cases. Drs. H. H. A. Beach, J. W. Elliot, Alfred Worcester, of Waltham, will be present. It is hoped that many who have had experience in the management of this disease will contribute something to the discussion.

Material illustrative of any subject in surgical pathology is of interest to the section.

Charles L. Scudder, M.D., *Secretary*, 1 Marlborough St.

APPOINTMENT.

Arthur P. Chadbourne, M.D., has been appointed physician to Out-patients at the Carney Hospital.

RESIGNATION.

W. Thornton Parker, M.D., of Groveland, Mass., has resigned the Professorship of Climatology in the College of Physicians and Surgeons of Boston.

RECENT DEATHS.

John M. Keating, M.D., LL.D., formerly of Philadelphia, and well known as the editor of the "Cyclopædia of the Diseases of Children," died at Colorado Springs, November 17th. He was the founder of the "International Clinics," and one of the editors of the *Climatologist.*

Dr. Charles Warrington Earle, whose death was noted last week, enlisted in the Federal Army at the age of sixteen. Before reaching his eighteenth birthday he was promoted to second lieutenant, and in this capacity commanded his company at the battle of Chicamauga, where out of forty-five men in the company, thirty-five were either killed or wounded. Official reports of the battle made special mention of his bravery. On retreat of the army into Chattanooga, Lieutenant Earle was captured and sent to Libby Prison. He was one of the men who escaped through the famous tunnel and after a week of wandering through the Virginia woods, reached the Union lines near Williamsburg. Returning to his command, he was promoted to first lieutenant. After the war he commenced the study of medicine and settled in Chicago.

Henry Bronson, A.M., M.D., died at New Haven, Conn., November 26th, aged eighty-nine years. He graduated from the Yale Medical School in 1827. He was the author of a "History of Waterbury," his native town, and a number of pamphlets on political economy. Several years ago he gave $83,000 to Yale University, $20,000 to the General Hospital of New Haven and $10,000 to the Waterbury Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Twentieth Annual Report of the Board of Health of the City of New Haven. 1892.

Annual Report of the Commissioner of Patents for the Year 1892. Washington: Government Printing Office. 1893.

Twenty-fourth Annual Report of the State Board of Health of Massachusetts. Pub. Doc. 34. Boston: Wright & Potter Printing Co., State Printers. 1893.

Transactions of the American Otological Society, Twenty-sixth Annual Meeting, New London, Conn., July 18, 1893. Vol. V. Part 3. Published by the Society. 1893.

Statistics of Public Libraries in the United States and Canada. By Weston Flint, Statistician of the Bureau of Education. Bureau of Education, Circular of Information, No. 7, 1893. Washington: Government Printing Office. 1893.

Original Articles.

REDUCTION OF CERVICAL DISLOCATION: A SUCCESSFUL CASE.[1]

BY G. L. WALTON, M.D.,
[illegible]

THE frequency of cervical dislocation without fatal result, is a subject to which I have already called attention in various articles,[2] the number of cases coming under my observation showing that the lesion is not one of great rarity, although probably frequently overlooked. The discomfort of this disability, even where no paralysis or special pain is present, can hardly be overestimated, and the disfigurement is by no means trivial. Relief of the condition is certainly a desideratum, and such cases as the one I have to report seem to show that such relief is within easy reach when the relations of the parts are thoroughly understood.

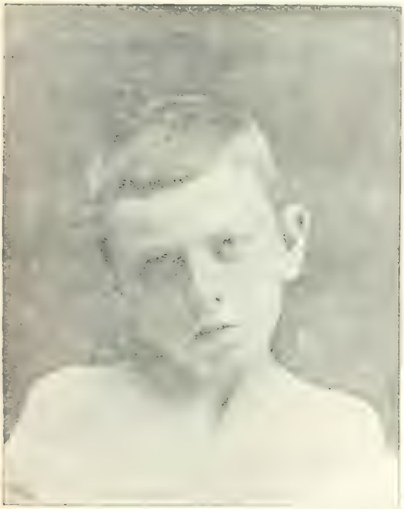

Fig. 1. Before operation.

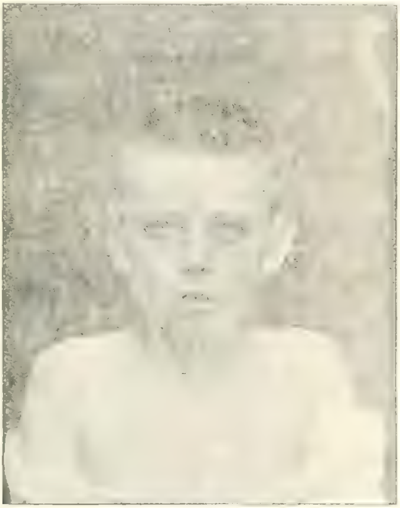

Fig. 2. After operation.

CASE. R. H., a boy ten years of age, fell from a shed about a week before his application to the hospital. He came to the Surgical Out-Patient Department of the Massachusetts General Hospital, in the service of Dr. Mixter, who recognized the trouble at once, and who kindly asked me to see the case.

The boy was fairly developed and well nourished. The head was bent towards the right shoulder, the face turned to the left, and the chin somewhat elevated, the position being that of torticollis from spasm of the sterno-cleido-mastoid on the right. This muscle was, however, lax, while the muscles on the left side of the neck were put upon the stretch. He could not voluntarily straighten the head, although it could be forced around so that the face pointed forward, but immediately relapsed when left to itself. There was a hollow over the spinous process of the fourth or fifth cervical vertebra. Examination of the chest was negative, the respiration was normal (21), the pulse 71, the temperature 98.5°. The gait was normal. There was no paralysis of motion or sensation in either extremity, and no other abnormality, except the displacement of the neck. There was no special complaint of pain, except on lying down (practically impossible), and no special swelling or bogginess of the tissues. The diagnostic features of typical unilateral dislocation were therefore present: namely, immobility and displacement, with the head in the position of torticollis, with laxity of the sterno-cleido-mastoid on the side which would produce such deformity, together with a stretching of the muscles on the other side of the neck.

We decided upon immediate operation, and the patient was admitted to the house for this purpose, in the service of Dr. Beach. Dr. Beach decided, at my suggestion, to attempt reduction by retro lateral flexion and rotation without extension.

The patient was etherized, the vertebræ first unlocked by bending the head diagonally backwards and towards the left, then rotated into place. No force was required. Reduction was immediate and complete. The hollow over the spinous process disappeared. There was no click heard. He was sent to the ward, recovery from ether being good. The next day, all motions of the head were perfect, and no pain was complained of on lying down. The patient was not allowed, however, to raise the head from the pillow. On the fifth day after operation the boy was apparently well, and was allowed to have his clothes. Going into the yard without permission, he ran out of the back gate. He was heard of at intervals after this time, remaining well as far as the head was concerned, although he had an attack of diphtheria in the course of the summer. The second photograph, taken about three months after the operation (the earliest opportunity), shows perfect position of the head.

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[1] Read before the Surgical Section of the [illegible]

[2] [illegible]
Boston Medical and Surgical Journal, [illegible]
International Clinics, [illegible]

This case represents the complete form of unilateral dislocation, the right articular process of one vertebra slipping forwards and falling down upon the pedicle of the vertebra below — that is, into the intervertebral notch, this accident being rendered easy by the comparatively horizontal position of the articular processes in the cervical region. The position of the vertebræ is seen in the cut (Fig. 3).

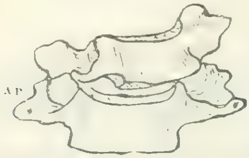

Fig. 3. Anterior view of vertebræ in complete unilateral dislocation, as seen in Fig. 1. A P, articular process of upper vertebra displaced forwards.

Völker considers rotation the essential factor in the displacement, differing from those who regard abduction as also important. Such dislocation is practically impossible in the dorsal or lumbar region without fracture. Fracture of this process also sometimes occurs in the cervical region, together with displacement — a fact which should be taken into consideration before recommending operation. This complication is, however, fortunately rare. The combination was present in one case, however, which was seen by Dr. Richardson, Dr. Hildreth and myself, in which the position of the head was much the same as in the case here reported; but the probability of fracture rendered attempt at reduction dangerous, for fear of producing injury to the cord or nerves, which were hitherto intact. This immunity will be made clear if two cervical vertebræ are placed in the position indicated, it being perceived that the lumen for the spinal cord is little if at all invaded.

Coming to the question of the proper method for reduction, if one attempts to separate the two vertebræ, which have been placed in the position indicated, by direct extension, it will be seen that the vertebræ must be very widely separated at every point in order that the displaced articular process may be elevated. In fact, the separation is so great that it would seem almost incredible that reduction had ever been accomplished in this way were such cases not on record. It is not impossible that in some of the successful cases reported as done by extension, abduction and rotation were added to extension, these three elements constituting practically the plan advocated in the "American Text-Book of Surgery" (1892). The extension may probably, however, be advantageously done away with; especially if retro-lateral flexion be substituted for abduction, the latter movement tending, perhaps, in some cases, to interfere with reduction by bringing more closely into apposition the two articular processes already impinging; whereas the backward movement is practically certain to unlock the displaced upper process. Since advocating this movement and the discontinuance of extension in previous contributions,[3] I find, on further study of the literature, that Richet[4] and Hueter[5] advocated similar plans early in the sixties, Richet[6] proposing abduction and rotation, though not without extension, and Hueter discarding extension. Völker[7] discussed the subject in 1876, considering extension and rotation equally efficacious with abduction and rotation. Hueter's plan seems to have been disregarded in practice, and since his time, as before, extension has been generally, in fact almost invariably, relied on as an essential part of the reduction. I find no reference to Hueter's suggestion in the "International Encyclopædia of Surgery" (1884), where extension is recommended as an essential part of reduction. Stimson[8] regards Hueter's plan favorably in his work on dislocations.

The essential elements in the plan here advocated are, (1) dispensing entirely with extension; (2) using only retro-lateral flexion and rotation. The plan is not, therefore, entirely novel, but is really a reversion to Hueter's methods, with a modification of the direction of the initial movement from simple abduction to retro-lateral flexion.

The extension generally practised seems to me not simply superfluous, but to detract from the best result, in that it tends to draw up the lower, along with the upper segment, and hence only to interfere with the lever movement which really accomplishes the unlocking.

It might be supposed that the tension of the muscles would have also to be taken into consideration in the operation. Apart from the fact, however, that etherization should always be employed in the operation, which would render the muscles lax, experiments on the cadaver show that the muscles may be practically disregarded, the ligaments alone serving to hold the vertebræ firmly in the new position. Such experiments (previously reported) were conducted by Dr. Richardson and myself in the dissecting-room of the Harvard Medical School. In a series of bodies all muscles were removed, leaving the spinal column with its ligaments alone intact. The vertebræ were then displaced in the typical manner. It was found that no moderate amount of traction in a direct line would raise the displaced articular process in the least degree. It was found, however, easy to unlock the displaced articular process by retro-lateral flexion, that is, by bending the head obliquely backwards and to the side — the side opposite to that of the displaced process — that is, in the typical (complete) case, to the side opposite to that in which the head is bent. For this manœuvre it was found that an inappreciable amount of force was required, and comparatively little elevation. Rotation into position completes the reduction. This was the method adopted by Dr. Beach in the case above reported, and with perfect success.

Cases sometimes occur in which the position is not one of the complete variety. As an instance, I will cite the case (already published), of which the photograph is here given, of a boy who fell upon the ice while skating backwards. Displacement with immobility occurred, followed by paralysis of the shoulder and considerable pain in the neck. When seen at the hospital some months later, the condition was that represented in the picture. It will be seen that the head is bent to the left, and that the muscles on the right are put upon the stretch. The position of the head is, however, not that of torticollis, in that the chin is not rotated to the left, nor elevated. The obvious inference in such a case is either that the articular process on the left has slipped backwards, or that the articular process on the right has slipped forwards, but has not fallen into the intervertebral notch. Manipulation of the vertebræ on the skeleton shows that the former dislocation would be an extremely improbable one, at least, unaccompanied by fracture,[9] and that, even if it were possible, the head would not be bent to the left, but, if anything, rather to the right. Displacement of the right articular process in the manner indicated would, however, explain perfectly the position of the head; as this process, if arrested in the course of riding over the articular process below, would be higher than the corresponding process on the left (Fig. 5), and thus cant the head to the left, while turning the face in the same direction. To reduce the dislocation in this case the head should certainly have been bent backwards and to the left, then rotated. It is not, therefore, safe to blindly follow the rule of bending the head, either in the direction opposite to, or towards that in which it is already bent.[10] Paralysis in this case (due probably to stretching of nerve roots), which included the supra- and infra-spinatus and the deltoid, gave us a clew to the height of the displacement. There was also an irregularity in the spinous processes at about the height from the third to the fourth vertebra. It might be supposed that such displacement would always be easily recognized in these cases. This is, however, not the fact. Examination of the spinous processes should always be made, but in many cases will be found unsatisfactory, especially where there is a swelling of the tissues, such as sometimes occurs in comparatively fresh cases.

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[3] Boston Medical and Surgical Journal, September 15, 1892, p. 265. Journal of Nervous and Mental Diseases, September, 1892.

[4] By Richet's original report it seems that strong extension was practised by an assistant; while he, by putting his own hands over those of the assistant, performed the abduction and rotation, adding at the same time something to the extension. This seems to have been overlooked by Hueter, who made an abstract of Richet's article, and who gave him (Richet) the credit, which was rather due to himself, of abandoning extension.

[5] Langenbeck's Archiv., Bd. ix, s. 946.

[6] Gaz. des Hop., 1863, p. 574.

[7] Deutsche Zeitschrift f. Chirurgie, 1876, vi, p. 424.

[8] Fractures and Dislocations. New York, 1888.

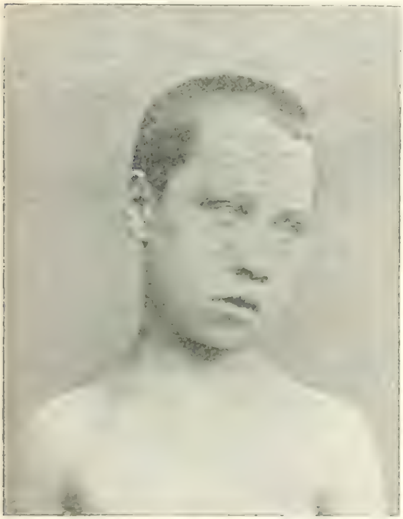

Fig. 4. Incomplete form of dislocation.

Bilateral dislocation, both forwards and backwards, is comparatively rare. I have seen one example of the former and have a picture (given me by Dr. Richardson) of the latter. In the former case the head was displaced forwards, and the face pointed upwards; in the latter, the chin was bent towards the chest. Direct extension in such cases has required extreme force and has not always proved successful. It would seem reasonable, therefore, as Heuter formerly suggested, that the attempt be made to first reduce one articular process, then the other, in the method indicated for unilateral dislocation, extension here also probably hindering rather than assisting.

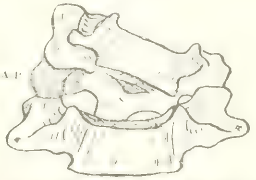

Fig. 5. Anterior view of displaced vertebra in form of dislocation seen in Fig. 4. A P, articular process caught before dropping into intervertebral notch.

This whole subject appears to have received little attention in comparison with its importance; partly, perhaps, because such accidents are erroneously considered extremely rare. In Lidell's elaborate article[11] on the subject the different forms are described with great accuracy, and twenty-nine cases of unilateral dislocations are quoted from Ashhurst's tables. I have already reported sixteen cases of dislocation without fatal result, since which I have seen two more typical cases and several others in which this diagnosis was taken under consideration, but in which the displacement was so slight as to render the diagnosis uncertain. Most of these cases were unilateral. This would seem to indicate that the lesion is not one of great rarity. The subject is renewed here for the purpose of calling attention to the importance of being on the lookout for this condition as well as of renewing the discussion regarding the proper method of reduction, and establishing the success of the method advocated. Operative interference has already proved successful in a large number of cases, as already stated, generally, by direct and forcible extension combined with manipulation of the displaced parts. Dr. Burrell informs me, however, that he has performed the reduction without extension, and I dare say others have done so without reporting the cases.

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[9] [illegible]

[10] [illegible]

[illegible] dislocation, be almost entirely corrected by the sinking back of the [illegible] I have alluded, this form is also apparently taken as the basis, for he [illegible] the head and upper segment of the column (away from the side of the dislocation).

[11] [illegible]

The number of cases of spontaneous reduction observed is striking, in contrast with the cases of operative interference, where extreme force has been necessary. Dr. Beach has forwarded me a communication regarding a case, hitherto unpublished, occurring in his practice, which will serve as an excellent example of spontaneous reduction. The communication is as follows:

> BOSTON, October 10, 1893.
>
> MY DEAR DR. WALTON: With this I forward the notes of a case which occurred in my private work, and may be added to the hospital case if you would like to have it.
>
> In June, 1889, a child between six and seven years of age was brought to me with the deformity characteristic of dislocation in the cervical region of the vertebræ. She had fallen from a hammock a few days before that, and, either in falling or striking, produced the luxation.
>
> There was no contusion or tenderness to indicate the location of a blow, nor could she give any clear idea of being struck in the fall. Upon examination of the spines of the cervical vertebræ, the line from the second to the fifth was concave, the convexity towards the pharynx. An inspection of the larynx disclosed a convexity corresponding to the body of the third vertebra. For the first few days after the injury the muscles of the neck were rigid, and there was lameness on both sides of the neck, not well defined. Very little motion was possible. Rotation began first, and afterwards flexion. With the exception of some difficulty in eating there was no impairment of any function.
>
> At the time of her visit to me, she had lost a certain amount of muscular rigidity and could flex and rotate the head to a limited degree. In view of her improvement, I advised against any extension under ether, and requested that a plaster cast be made to preserve a record of the deformity. Before this could be done, however, a spontaneous reduction took place on the second night after my examination, when, after being much fatigued by her journey, she slept very soundly. On the following morning the cervical vertebræ were in perfect position and she had free motion of the head in every direction.
>
> Yours sincerely,
>
> H. H. A. BEACH.

There was considerable controversy in former times as to whether pure dislocation of the vertebral column was possible even in the cervical region. This point has, however, become so fully established as to require no discussion here. It is certainly true that pure dislocation in the dorsal and lumbar regions is practically impossible; in the cervical, however, it constitutes a large proportion of the cases. Lidell's estimate that dislocations of the cervical vertebræ constitute one-half the cases of vertebral injury met in civil practice, is probably not an over-estimation. Bryant[12] treats this subject as being of comparatively little importance to the practising surgeon. Still, as Lidell has pointed out, the establishment of this fact and the diagnosis of dislocation from fracture, or the combination, is of great importance when we come to consider the question of operation. On this point, namely, the advisability of operation, there has been in the past more or less difference of opinion. Boyer and Dupuytren, for example, object to attempts at operation as dangerous. Erichsen considers the attempt only justifiable where the danger is imminent. Porta, Bryant, Ashhurst, Lidell and others, on the other hand, favor operation. Lidell states that there is a hope that the fatality will be considerably diminished by improved methods. It would seem that successful cases of reduction have been already sufficiently numerous to warrant the attempt, with care, even under the methods commonly employed. Successful cases have been reported, for example, by Gray,[13] Wood,[14] Völker,[15] Hickerman,[16] Schuk,[17] Schrauth,[18] Stout,[19] Aubert,[20] Van Walther,[21] Guerin,[22] and others. Ashhurst, in his list of twenty-nine cases of unilateral cervical dislocation, reports sixteen in which attempts at reduction were made, all but one being successful. It seems probable that this is a rather large proportion, many unsuccessful cases having probably not been reported. Among unsuccessful cases followed by death may be mentioned those reported by Gaitskill,[23] Spencer,[24] and Petit Radel.[25] There have been unsuccessful operations followed by spontaneous recovery.

To recur to Völker's views: this writer has reduced a case of complete unilateral dislocation by extension and rotation (the reduction requiring, however, several attempts for its completion), and argues that this method is equally logical and easy with that which he has credited to Richet — an opinion which seems generally to have prevailed since that time.

With regard to direction of abduction, when practised, there seems to have been some obscurity of expression. Völker quotes Hueter as recommending to bend the head towards the shoulder towards which it is already bent, then to rotate; but rightly comments that in cases of complete dislocation this would be exactly the wrong direction. He substitutes, therefore, the suggestion of bending the head to the side where no projection (Hervorragung) is noted; then rotating. It is not impossible that the obscurity of these directions have been in part at fault for the non-adoption of the method. These arbitrary rules are difficult to remember; but if one attempts to carry any given rule into effect, I should suggest the following: Perform retro-lateral flexion toward the side toward which the face is turned by the dislocation, then rotate back to place. The force of this rule will be appreciated by remembering that rotation must always take place away from the displaced side, except in the case (which may be practically disregarded) of displacement backwards. It is also well to remember in diagnosis, that the face is turned from the displaced process, no matter which way the head is bent.

In some cases, it is true, there may have been so little rotation in the dislocation as to render the diagnosis difficult between dislocation and inflammatory process. Gentle attempts at reduction would, however, as Völker states, be always in order in such cases, to effect the cure, and at the same time to establish the diagnosis.

The ease with which spontaneous reduction takes place in sleep was commented on by Völker as due to relaxation of the muscular strain kept up in the waking hours to prevent pain, such reduction being easily conceivable when it is realized that the part of the articular process which bars the way to reduction is only about six millimetres in height, perhaps less.

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[12] Practice of Surgery, Chapter xviii.

[13] Annals of Anatomy and Surgery, February, 1882; also, American Journal Medical Sciences, April, 1882.

[14] New York Medical Journal, January, 1857, p. 13.

[15] Loc. cit.

[16] Buffalo Medical Journal, vol. x, p. 702.

[17] American Journal Medical Sciences, July, 1841, p. 207.

[18] Hamilton: Fractures and Dislocations, 1880, p. 606.

[19] University Medical Magazine, 1891-2, iv, p. 296.

[20] Contrib. à l'etude des Luxations des vertèbres cervicales: Quelque cas hereux de reduction, Paris, 1889.

[21] J. der Chirurgie und Augenheilkunde, Berlin, 1822, iii-i, p. 197.

[22] Revue Medicale, 1840, p. 276.

[23] London Repository, vol. xv, p. 282.

[24] Boston Medical and Surgical Journal, vol. xv, No. 11.

[25] Note to Boyer, Malad. Chir., vol. v, p. 118.

The advisability of using ether in all attempts at reduction is too apparent to require mention.

With regard to the method usually advised and followed, Lidell says (loc cit.) p. 723:

"Had I this case now to treat, I should, as soon as it became clear that the man would not recover under an expectant line of treatment, that is, on the second morning after the accident, relax his muscles completely by administering an anæsthetic, and then by carefully made *extension and rotation, etc.*,[26] try to restore the dislocated bone to its normal position."

He quotes Ashhurst (p. 729) as saying: "In the treatment of dislocation of the cervical region, the mortality has been nearly four times greater when constitutional or general treatment has been relied on exclusively, than when attempts have been made to reduce the dislocation by *extension, rotation, etc.*"[26] Lidell continues: "It seems to me that the inference is fairly warranted from the foregoing considerations that *extension*[26] (combined, of course, with rotation or pressure, as required) should be employed in every case of spinal dislocation or of spinal fracture with dislocation where the spinal functions are disturbed.

Looking more closely into the order of procedure, we find that one plan seems to have been to first rotate in the direction in which the head is already turned, then to extend and rotate the head back to place (Maxson,[27] Wyeth[28]); another method has consisted of extension followed by rotation (Rathburn,[29] Gray,[30] Perisot, Berthold,[31] Lucas[32]); another, suspension of the head and rotation of the body (Morton[33]); another, as extension and manipulation (Van Walther). In bilateral dislocation steady extension, followed by direct replacement without rotation, has been adopted (Ayers[34]); with slight rotary movement (Stout); extension with rocking movement, and finger in the pharynx (Carter[35]).

With regard to the degree of force used in extension, this seems to have been in most cases very considerable: Suspension of the head between the hands (by Morton); strong extension (by Wyeth); a considerable amount of force — "all, I believe, I was capable of exerting" (by Carter); chin and occiput held by the hands of the operator covered by those of another, strong traction being employed with counter-extension by folded sheets around the shoulders, a third physician placing the hands under those of the other two, to aid replacement (Ayers); "steady pulling, gradually increasing" (Thon[36]); three pull the head and one the shoulders with the whole weight (Schrauth); place the knees on the shoulders, drawing the head, then turning it into position (Erichsen); a hand on the forehead and on the occiput covered by those of an assistant, counter-extension being firmly maintained (Gray).

Even the degree of force indicated has not always proved successful, as in the case of Warren, in which subsequent spontaneous reduction pointed the way to direction rather than force as the key to the situation.

It is certainly in the line of advance (notably illustrated by Bigelow's brilliant exposition of hip-joint reduction) in other dislocations to do away with this excessive force, and to follow backwards as nearly as possible the movements made in dislocation — an object which we are here aided in accomplishing by the use of the fulcrum.

The question naturally presents itself: After how long a time shall we advise operation? Gray's case was successful after four months. The spontaneous reduction in Warren's case, already alluded to, took place after nearly as long a period. Guerin reduced a case after seven months. We should err on the side of caution when any question of fracture is present, or where great force is to be used, even in simple dislocation; but when we consider how little force is necessary by the method advocated, as shown by Beach's case, there seems little or no risk in attempting reduction after a considerably longer period than four months has elapsed, though the exact length of that period it would seem premature to determine without further experience. Attempts should be abandoned if the displacement is not easily reduced.

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[26] [illegible]
[27] [illegible]
[28] [illegible]
[29] [illegible]
[30] [illegible]
[31] [illegible]
[32] [illegible]
[33] [illegible]
[34] [illegible]
[35] New York Medical Record, 1885, xxviii, p. 257.
[36] [illegible]

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SALINES IN APPENDICITIS[1]

BY S. C. GORDON, M.D., PORTLAND, ME.

Dr. M. H. Richardson, in his article published in the Journal of September 28th, objects very strongly to the use of salines in appendicitis, especially in the early stages; and inasmuch as this is the time when in my opinion they are the most required and will do the most good, I cannot allow some of his positions to pass without comment, particularly as I am one who has "advocated" the prompt and free use of this method of treatment.

In the first place, I think Dr. Richardson does not fully state the case when he says: "The theoretical action of cathartics in peritonitis, as given by various men, consists in an absorption and removal by intestinal drainage of the toxic products of certain micro-organisms which, multiplying in or near the peritoneal cavity, endanger life." Now while this is true, it does not express the whole truth. I am just old-fashioned enough to believe that general bleeding oftentimes does an immense deal of good in the sthenic form of inflammation, not by removing "toxic products" alone, but diminishing the volume of blood in the general circulation, thus unloading the distended vessels in the part inflamed, and facilitating absorption of the liquid exudate, before any purulent degeneration takes place in it. I believe and know from "very considerable experience" that leeches will almost invariably stop the inflammatory process in orchitis and many other local inflammations, for the same reason. It is not simply the removal of "toxic products," but in the case of appendicitis it is more the removal of exudate while in a liquid state, in order to prevent the "toxic" elements from the intestines poisoning it and thus producing pus.

When we are called to the case there is a beginning or well-advanced peritonitis, caused by septic matter

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[1] A reply to Dr. [illegible]

that has escaped from the appendix (in the cases where perforation has occurred), all the blood-vessels in the vicinity are enormously distended, and exudate is being poured out in the intervascular spaces. The *prompt* and *free* use of salines unloads these distended vessels, and promotes absorption of the exudate, before it is converted into pus. By thus promptly relieving the congested vessels, and removing pressure, pain and fever are both relieved, and in nine cases in ten, in my "considerable experience" the case is practically ended for that time. Other and similar attacks may follow soon or late, unless operation for removal of the diseased organ is made in the interval, which I always advise.

Again, Dr. Richardson says: "I do not object to carrying out this theory after the appendix has been securely tied, or after it is clear that there is no danger of rapid extravasation, but in the first forty-eight hours of appendicitis, I look upon the administration of salines as extremely dangerous, and as a not infrequent cause of general peritonitis and death. The reasons for this lie in the pathological conditions that exist in a very considerable percentage of cases. If in a given case there is a perforation in an appendix of large lumen, salines by liquefying the fæces and increasing peristalsis, *will cause an immediate and almost invariably fatal extravasation.*"

My answer to this is: First, the septic material has already escaped from the appendix and produced the peritonitis, and removing the "shell" which is left does not remove the *cause*, for that has already "gotten in its work" and done all the harm it can. It is the *condition* we are called upon to treat, and not the "tenement" that once held the toxic element. *Removing the former habitat of the cause does not remove the cause or the effect*, but it does add traumatism to an already serious matter.

Again, in my "very considerable experience," I have never seen a case, with one exception, where any fæcal matter has existed in the "lumen" of the appendix, no matter how "large" the lumen. The effect of inflammation is to close the end nearest to the cæcum, so that no material escapes from the bowel. Salines do not, therefore, cause "extravasation" from the intestine. In the single exception alluded to, there was simply the *color* of fæcal matter, and not any substance, that had escaped, and the proximal end was closed, so that no more could escape.

Dr. Richardson says in a subsequent paragraph, "There is the same objection to the use of salines in gunshot wounds of the intestines, in perforation of typhoid fever, or in perforating ulcers of the intestinal tract generally." I agree that there is a most decided objection to the use of salines in the pathological conditions named, but I fail to see wherein the analogy lies between these conditions and those usually found in appendicitis. In the latter there is a perforation through the appendix only, which allows some septic material to escape, while the opening to the bowel is practically shut up. While in the "gunshot wounds, etc.," there is a direct opening into the bowel itself. While the "same objection" may apply in the latter condition it fails to apply in the former, simply from the fact that the conditions fail to be the same. In "catarrhal appendicitis without perforation" I agree fully with Dr. Richardson that it is the "mildest of diseases" (of the kind), *if you always know it when you see it.* But even that is attended with a certain amount of peritonitis: and salines can do no harm, but can, and do accomplish much good by terminating the case by rapid resolution, thus preserving the integrity of the tissues, so that perforation is much less liable to occur, and "general spreading peritonitis" is prevented. I am fully in accord with Dr. Richardson when he says that these cases of "general spreading peritonitis, far from being curable by salines, are, in my opinion and experience, beyond relief even by the most radical surgical measures, except in very rare instances." I know of several instances, however. I do believe also if the rule should be established in the profession, that at the *very earliest symptoms* of appendicitis salines should be promptly and effectually used, a large number of these cases could be prevented.

When we consider the percentage of natural cures reported, we should hesitate long before operating in the acute stage. Ranvers reports 2,000 cases in the Prussian army with 96 per cent. of cures without operation; Charité Hospital, Berlin, 54 cases with three deaths; Nothnagel's Clinic, Vienna, 65 cases and three deaths, etc. But I do believe strongly in operation after a well-marked attack is convalescent. There is always danger of relapses, and the danger of operation in the interval is, in my opinion, very small — one or two per cent. possibly.

Since June 14, 1892, I have operated nine times in the interval of attacks (none less than two, and one eight attacks). Seven of the nine I treated through the acute stage by salines. During that time I have also treated four others without operating afterwards. All recovered without any serious symptoms following the operation. No one of the four has yet had relapse. Some of these cases I did not see until pus had formed (as the operation afterward showed), and yet I preferred to risk medical rather than surgical treatment until convalescence was established. I think the result proved the wisdom of my course. Results are, after all, what we work for; and while statistics are often fallacious, yet we are governed by them in a measure in our own line of work.

I am not prepared to say that I should refuse to operate in the acute stage, where there is clearly an abscess to be drained, or a "general spreading suppurating peritonitis"; but I shall in the future be governed by my "very considerable experience," and treat all cases in the *early stages* by salines.

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THE SYMPTOMS OF SENILITY IN PARALYSIS AGITANS.[1]

BY THEODORE DILLER, M.D.,
Visiting Physician to the Insane Department of St. Francis Hospital, Pittsburg, Pa.

THE recent investigations of Dana[2] and Ketscher,[3] throw a flood of light on the morbid changes which produce the symptom-complex known as paralysis agitans. These changes, confined chiefly to the cord, consist in dilatation of the blood-vessels, infiltration of round cells with marked degeneration and pigmentation of the nerve cells. Ketscher found miliary aneurisms and hæmorrhages throughout the cord. Both these authorities unite in saying that the primary change occurs in the blood-vessels, and that the nerve changes are secondary. Indeed, the results of their studies are so concordant throughout, that it would seem that we could (as Dana remarks) take paralysis agitans from the list of functional diseases and place it in that of organic diseases.

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[1] Read before the Pittsburg Academy of Medicine, December 4, 1893.

[2] Journal of Nervous and Mental Diseases, May 1, 1893, pp. 359, 360.

[3] Neurolg. Centbl., No. 5, 1893 (quoted in Journal of Nervous and Mental Diseases).

Ketscher further examined the nervous systems of ten old people who had never suffered from shaking palsy, and found almost identical changes with those he had discovered in paralysis agitans, save that they were less pronounced. He concludes that shaking palsy is nothing more than a pronounced senility occurring prematurely.

Two men, one forty, the other forty-five years old, and one woman, aged fifty, suffering from paralysis agitans, have come under my care recently. In all three of them I noted the unmistakable signs of senility, and desire to record a clinical symptom which may have some weight in supporting the deduction which Ketscher makes from his pathological investigations of the disease. Moreover, the symptom, from a clinical standpoint alone, is, I believe, of considerable diagnostic significance. All three of my patients spoke of having rather suddenly become aged. They had lost their vim, vigor and enterprise. This symptom of aging had been noticed and remarked upon by friends of these patients. It was both objective and subjective.

In two of my cases, the disease is yet in its early stages, the tremor being confined to a single hand. Both presented the "bread crumbling" position of the hand; in one the *facies* were rather suggestive. But the attitude, voice and symptom of festination were absent. It is in cases such as these that this early symptom of aging will be of diagnostic value. The fully developed disease is so characteristic that it may be most easily recognized even apart from the symptom of senility.

None of the recent text-books speak of this sudden aging as an early symptom of the disease. Only the piping voice and the general appearances of senility in the fully formed disease are spoken of.

How constantly this symptom of sudden aging may be observed in the early stages of paralysis agitans will, of course, require many more observations than the few I have made to determine. I trust they will be forthcoming.

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Clinical Department.

A CASE OF DYSPHAGIA WITH DILATATION OF THE ŒSOPHAGUS, AND PNEUMATOSIS.[1]

BY GUSTAV LIEBMAN, M.D.

Miss S. S., fifteen years of age, had been always well until the catamenia set in two years ago, when she flowed excessively during eight days; after a pause of three weeks the menorrhagia commenced once more and lasted another week. There have been no signs of a menstrual flow since. While having had some dyspeptic symptoms before that time, no difficulty in deglutition was known to the young patient; but this made its appearance coincidently with the cessation of the metrorrhagic flow. As in most of these cases the patient at first met with difficulty in swallowing solids; soon she had the same trouble with semi-solids; and after the lapse of a few months she was only able to swallow fluids, and with great difficulty at that. A few weeks after the appearance of the dysphagia our patient acquired the habit of sucking air into the œsophagus, in order, I think, to force the liquid food down into the stomach. The air would enter with a rumbling noise; and this very rumbling, which she located, as she does still, over the whole length of the sternum, was, as it is still, a source of great distress and no end of complaint. The act of swallowing became more and more difficult; she sucked greater quantities of air, until the whole abdomen would swell up like a balloon, producing a distressing feeling of bloating and oppression. This sense of oppression would last until some of the gas was expelled through the cardia or by rectum. The liquids having hardly reached the stomach — or what the patient thought to be the stomach — vomiting would set in; and of a cupful of malted milk but a very small portion would be retained. The child was treated for some time in the Massachusetts General Hospital, where she improved somewhat under a diet of peptonized milk taken per os, and milk and eggs given through the feeding-tube; but she grew worse after having been at home but a few days.

The clinical picture has remained unchanged ever since with the exception of a short period of improvement, to be mentioned later on. The patient lost flesh to the point of emaciation, and was most of the time unable to leave her bed. Sleep was poor; the bowels constipated; and the vomiting occurred no matter whether the patient *drank* her liquids or had them put into her stomach by means of the tube. This was the condition when I first saw the patient, October 30, 1892. The following *status presens* appeared then:

A young girl, fifteen years of age, of anxious expression, intelligent, four feet and seven inches in length, emaciated. The integuments are dry and sallow, not elastic. The urine is of 1,015 specific gravity; no albumen; no sugar. The heart, lungs and bronchial tubes are healthy. The gastric region and abdomen are enormously distended — drum-like; and the stomach and colon sounds not to be differentiated upon percussion. Meteorism extends to the symphisis pubis on the one hand, and to eight right and left intercostal spaces on the other. Liver dulness is abolished, but discernible further up in the middle axillary line, between eighth and ninth ribs. There is vomiting after the taking of any kind of food. Of the three cupfuls of food (consisting of milk and egg) put in the stomach through the tube, one cupful stays. There is at present a continuous swallowing of air, even when no food is taken. When fluids are taken there is considerable effort to press them down, but there is no pain. Instead of the first deglutition murmur (*Durchspritzgeräusch*) there is a pharyngeal sound transmitted along the whole œsophagus. After a few seconds there is a second sound, though this cannot be heard at all times.

I ordered the patient to drink a glass of water; she succeeded in taking from forty to fifty cubic centimetres. This was regurgitated in less than five minutes; and upon introducing a stomach-tube to a distance of sixty centimetres, but a few drachms of water escaped through it. There was no obstacle to the entering of the tube through the cardiac orifice. Washing out the stomach followed this procedure; washings clear and limpid. Patient dwelt with a great deal of volubility upon her suffering from the "rumbling," rolling gases in her throat and along the œsophagus. Ordered daily irrigations of stomach, and bromide of strontium.

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[1] Read before the Suffolk District Medical Society, October [illegible], 1893.

November 2d. Patient swallowed some tea and milk, also some beef-tea (bovox), and vomited about all some five minutes afterwards. This specimen was not changed at all in appearance. Reaction was neutral; there was neither peptone, propeptone, dextrine nor sugar.

Three days afterward I obtained a specimen through the tube, the examination of which showed the following:

Reaction, acid.
Acidity = 3 %, that is, it takes 30 c.cm. of normal one-tenth soda solution to neutralize 100 c.cm. of gastric juice.
Hydrochloric acid, –
Lab (rennet), +
Erythrodextrine, –
Syntonin, +
Peptone, propeptone, –

November 8th. Direct faradism by Dr. Gertrude Van Pelt.

December 18th. Has had no irrigations for over a month, but two internal faradizations twice a week. Some little improvement. Acting upon my earnest solicitation, patient succeeded in stopping the air-sucking; and in order to confirm this more fully, feeding through the *tube* only was ordered.

December 23d. Patient feeling better in every respect. Abdomen softer and small; stools freer. Sleeps sounder. Vomiting has stopped.

February 2d. Still better. Tympanites in gastric region gone, also in abdomen, but still present over left false ribs. Stomach contents, acid; but hydrochloric acid still lacking.

March 10th. Things do not look so well; more meteorism and some vomiting; although patient is able to sit up occasionally. Ordered her to resume direct faradism, that had of late been neglected. So far I had been loath to blow up the stomach with air, deeming it a cruel procedure under the circumstances; but I did it to-day, the distension being still very much less than two months ago. Lower border of stomach was found two finger-breadths below umbilicus. I also blew up the lower part of the œsophagus; while doing so, I found increased tympanites on left front and side, but indistinctly so on back (both sides of vertebræ).

April 6th. Prognosis unfavorable, although the swallowing seems to be easier. Direct faradism insisted on.

CONCLUSIONS.

We have then to deal with

(*a*) A very distressing case of dysphagia.

(*b*) A fusiform dilatation, to a slight degree, of the œsophagus.

(*c*) Pneumatosis — an aggravated distention of the stomach with air (drum disease).

As regards the dysphagia, it would appear that its first occurrence was synchronous with the two first and only efforts of nature at menstruation, and that the great loss of blood might have had considerable to do with it.

My reasons for supposing a fusiform dilatation of the œsophagus are:

(1) The vomiting or regurgitation of unchanged liquid food, of neutral reaction, if *swallowed* by the patient, and not put down into the stomach with the feeding-tube.

(2) The great distance to which the stomach-tube had to be introduced — almost its entire length — to reach the cardia and the fluids contained beyond. While the distance from the incisors to the cardia in *adults* is estimated at forty centimetres, that in the case of our child-patient is far in excess of that figure. This strange fact can only be explained by the suggestion of a distention of the œsophagus and the consequent formation of a semicircle by the tube in gliding over the distended wall. That the dilatation is of the spindle-shaped variety I infer from the fact that there is no accumulation of fluids in the lower œsophagus to be met and discharged through the searching-tube, as would be the case in the sacculated variety; and from the fact that I was able to blow a considerable amount of air into the œsophagus before the patient made complaint about it, and that the resonance in both the back and front increased thereby — in front I must admit much more so than in back on both sides of the vertebræ.

From the text-books we learn very little about those dysphagias not depending on *anatomical* stenosis. As their probable causes, may be mentioned:

(1) Spastic contractions of the œsophagus (œsophagism) due to hysteria.

(2) Paralysis of œsophagus (Ziemssen), or fatty degeneration of its muscular layer (Bartholow).

(3) A lack of reflex relaxation (opening) of the cardia during the act of deglutition (Meltzer, Einhorn).

(4) Spastic contraction of the cardia.

Œsophagism I eliminate because there is absolutely no obstacle to the insertion of an instrument within the œsophagus, and because the general mental habitus of the patient is not that of an hysterical person. There is much volubility of tongue, to be sure; but what a sufferer the poor girl is! Moreover, there is neither hyperæsthesia, paræsthesia nor hemianæsthesia. Paralysis we must exclude, as no infectious disease like diphtheria had preceded the dysphagia. Nor is there anything like a bulbar affection of the larynx or pharynx. A fatty degeneration of the muscular layers is not impossible, but cannot be proved. The theory of a spastic contraction of the cardia would best explain the origin of the pneumatosis, inasmuch as the spasm of the cardia (and eventually the pylorus) would naturally cause retention of gas within the stomach. But we must exclude also this explanation, because there is no resistance to the stomach-tube within the cardia, and because of the ease with which the act of vomiting takes place.

There would then remain, as the only possible explanation of the dysphagia and the resulting dilatation, a lack in the reflex relaxation of the cardia during the act of swallowing. Einhorn says: "Meltzer has shown that with every act of swallowing the cardia opens by way of reflex-action. Supposing that the centre or the circuit of this reflex-action is in any way disturbed so that the cardia does not relax during swallowing, there will necessarily result a slight difficulty in transferring the food from the œsophagus into the stomach."

That, in our case, the great loss of blood at such a tender age might have affected the nerve centres in general, and the one presiding over the reflex opening of the cardia in particular, is a probability with which, as a causal factor of the dysphagia, we have to reckon. The pneumatosis (the filling and distention of the stomach with gas) is without doubt due to the sucking of air on the part of the patient. This proposition is borne out by the improvement following the use of direct faradization, the abstention from swallowing air, and the feeding of the young girl with the feeding-tube only. To this mode of feeding, doing away with deglutition, the largest share of the temporary improvement was due. Still some of the good result may be ascribed to the tonic effect of the intragastric current upon the vagus as well as to its moral influence exerted upon the will-power of our patient.

May 5, 1893. Although deglutition is still much improved (forty c. c. of milk swallowed by patient and vomited five minutes later were changed in appearance, curdled and of acid reaction, a proof that the milk had reached the stomach) and although the pneumatosis is much less conspicuous, the patient is worse and extremely emaciated. There is bronchial breathing and delayed expiration, but no cough or expectoration.

July 11th and 12th. Great pain in left front, making the administration of one-twentieth of a grain of morphine necessary.

July 15th. Death.

DISCUSSION.

Dr. Van Pelt: I had the pleasure of seeing this very remarkable case. I never saw anything like it before. In a few moments as I watched it, the stomach became so distended with air as to look like an enormous tumor. One could easily hear the air rushing in.

Dr. F. C. Shattuck: [illegible], the patient whose remarkable case Dr. Liebman reports was under my care twice at the Massachusetts General Hospital. The first time was for only a few days after a change of service. Some weeks later she re-entered and I did my best to help her. There was then no vomiting and the constant complaint was that she could not swallow, although she swallowed air in large amounts and the largest-sized stomach-tube encountered no resistance. She was an undeveloped girl, and weighed only fifty-six pounds. Under feeding through the stomach-tube and by the rectum she gained seven or eight pounds in a few weeks and improved decidedly in appearance. She then began to vomit, and I could do nothing further with her by moral or other treatment. [illegible]. Last winter I saw her at her home at her father's request. She was in a pitiable condition, emaciated to the last degree, with the lips drawn tightly over the teeth, and a belly distended to the last degree with air. The case seems to me to be one of those rare instances of fatal hysteria, the dilatation of the stomach and œsophagus being purely secondary to over-distension from the air which she swallowed.

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REMOVAL OF FOUR INCHES OF THE RECTUM FOR CANCER: ANASTOMOSIS BY MEANS OF THE MURPHY BUTTON.[1]

BY [illegible]

W. S., aged forty-six, merchant. In good health until the early part of the summer of 1893. First noticed a slight tenesmus and pain at stool, with a little bloody mucus, some time in June. Was first seen by me in July. Quite two inches above the anal aperture, upon the anterior wall of the rectum, was a well-defined mass of infiltrated tissue, of irregular ovate shape, an inch or more in its longer diameter, the upper border of which was reached by the finger with considerable difficulty. The diagnosis appeared all too evident, but its location rendered surgical interference seemingly unwarranted.

Upon my return to the city in the early part of September, I found that the growth had been so rapid that the entire circumference of the rectum was invaded, and much suffering was experienced on account of the stenosis. Blood in considerable quantity was daily lost; and it seemed a plain duty at once to advise colotomy. He accordingly entered the hospital on the 12th of September, left inguinal colotomy being performed the same day. He was discharged the 26th, much improved, free from pain, but still losing daily a considerable quantity of blood.

Notwithstanding various measures were tried to control the hæmorrhage, it gradually increased to such an extent that danger to life from this cause alone seemed immediate and imminent. He was readmitted to the hospital on the 17th of October and a modified Kraske operation was undertaken for the removal of the diseased portion of the rectum. To this end an incision was made posteriorly, commencing about an inch from the anal outlet and carried upward on the median line upon the sacrum. The coccyx and two-fifths of the sacrum were removed, allowing room to dissect the rectum from its attachment, dividing posteriorly the meso-rectum and entering at once into the peritoneal cavity. In this way sufficient length of the bowel was brought down for easy manipulation. The rectum was now divided two inches above the anus, and the constricting diseased portion split open upon its posterior border, for the double purpose of ascertaining the limitation of the disease, and to aid thereby the careful separation of the bowel from its anterior attachments, which to the base of the bladder were everywhere pronounced. The rectum was then divided above the growth, the disease having invaded about four inches of the bowel. Quite a number of vessels were divided in the section, but they were easily secured. During the summer, I had profited by the experiences and instruction of Dr. Murphy, of Chicago, in the use of his anastomosis button. These were reinforced by my own experimental studies upon animals. I had been indebted to Dr. H. O. Walker, of Detroit, only a few days previous to the operation, for the suggestion that the button might be used advantageously in the restoration of the continuity of the rectum, although it had never been applied for this purpose. The ends of the larger-sized button were adjusted in the divided extremities of the bowel and compressed. Owing to the thickness of the rectal wall (the muscular coat of the upper portion being markedly hypertrophied) I reinforced the parts with a continuous suture. I closed, also, the opening into the peritoneum of the pelvic floor with a continuous suture, in order to prevent the prolapse of the small intestine which had appeared in the wound, as well as to cut off the peritoneal cavity from possible subsequent infection. The posterior wall of the bowel was re-attached to the divided tissues, and a large part of the wound was closed by several lines of buried sutures. An iodoform-gauze drain was inserted and the dressing applied.

Convalescence was rapid and uneventful, the temperature scarcely reaching 100°. The button was removed the twelfth day with a little difficulty, not having freed itself quite entirely from its attachment; but its removal was hastened, because pressure of the button upon the neck of the bladder caused discomfort and some difficulty in urination. There is a fistulous opening posteriorly at the site of the union of the bowel connected with the yet unclosed wound. The only ill effect noticed from the necessarily free opening of the sacral canal has been a marked hyperæsthesia of the cutaneous surfaces for a considerable distance above and upon either side of the wound. The patient has improved rapidly in his general condition and in restoration of color, and has been sitting up and walking about his room for a week. He was discharged from the hospital November 5th, the twentieth day after the operation.

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[1] [illegible]

It will be interesting to note the subsequent history of the patient, the cicatricial closure of the wound with the patency of the bowel maintained, and the possible return of the disease. So far as I am able to determine, the disease was limited to the intestine, and no enlarged glands were found.

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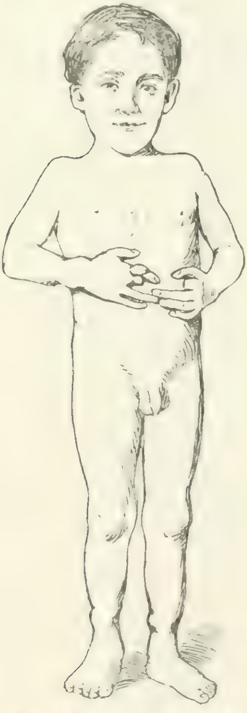

A POSSIBLE CASE OF MATERNAL IMPRESSION.

BY JOHN LOVETT MORSE, M.D.

Willie M., three and one-half years of age, was born at full term after a normal labor. About the middle of her pregnancy, his mother was very much shocked at seeing a relative who, unbeknown to her, had had both legs amputated after an accident. All her other children have been well formed and there is no history of such malformation in the family. The constrictions involve bones as well as superficial structures. The use of the limbs is, however, perfectly normal. The case seems suggestive, at least, of maternal impression.

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A BAD FAMILY RECORD.

BY O. T. HOWE, M.D., LAWRENCE, MASS.

A young lady, sixteen years of age, came to me recently for hæmorrhage from the lungs, and gave the following family history:

Her grandfather, Mr. D., died when middle-aged of phthisis. He left six children. Mary Eliza died when three years of age, Alice and Katie when twenty, and Mark (her father) when thirty-two, all of consumption. Another daughter, Margaret, is now sick with the same disease. The grandfather had one brother, who died when middle-aged (cause not known), and left eleven children. Of these, five have already died from, or are now in, consumption, and one is subject to hæmoptysis. Of these twelve cases I have known personally quite a number. They were fine, healthy subjects and one (Mark) an athlete. Almost all these cases developed after the children had left home, and when they were not exposed to any contact with the disease.

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Medical Progress.

RECENT PROGRESS IN LARYNGOLOGY.

BY A. COOLIDGE, JR., M.D.

PACHYDERMIA OF THE LARYNX.

McBride[1] gives a very good description of this rather rare condition, so rare that until the illness of the Emperor Frederick of Germany it attracted little attention. At that time Virchow described symmetrical elongated swellings of oval shape, found in the region of the vocal processes. In association with these swellings the epithelium of the vocal cords is generally found thickened, and sometimes a very marked development of epithelium is found in the interarytenoid region. Later, Fraenkel described the swellings on the vocal processes, often showing in their centre a pit or hollow, and often of a whitish-rose or red color. The microscope shows great thickening of the epithelium, horny changes in the outer cells and multiplication of papillæ. Sometimes the swelling appears upon one vocal process only, and a corresponding pit or depression is seen on the opposite cord. Another position in which pachydermia may occur is in the interarytenoid space, the position which, as is well known, is frequently the seat of incipient tubercular infiltration. Several cases have now been collected from different authorities, describing these tumors in both of these situations. Many of those in the latter position occurred in tubercular subjects, and should consequently be classified as phthisical pachydermia, as distinguished from idiopathic pachydermia. The difference in diagnosis between these two conditions is thus made by McBride: In the idiopathic variety the swelling rises gradually without any very definite margin so far as shape goes, although the color is distinctly defined, being of a whitish-gray with just a tinge of pink. The outline is smooth or finely granular, with sometimes a furrow or cliff. In the interarytenoid tumor of phthisis, on the other hand, the swelling is distinctly a tumor with more or less defined margin. The color is usually pink or red and the outline may be smooth or coarsely papillary. The posterior wall of the larynx seems to enjoy special immunity from neoplasms, consequently any distinct swelling in this position is rightly considered as suspicious of tuberculosis. The microscopic structure of benign pachydermia is almost identical with that due to phthisis; the latter is by far the most common. The author reports five cases, two situated in the interarytenoid space, two upon the vocal processes, and one upon the anterior third of both cords.

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[1] Edinburgh Medical Journal, April, 1893.

THE FREQUENCY OF TUBERCULAR AFFECTIONS OF THE LARYNX.

Although containing but little that is new, the conclusions of Kidd[2] being based upon the post-mortem material of the London Hospital, are interesting and instructive. The hospital records show that tubercular disease of the larynx is found in at least fifty per cent. of all patients dying of chronic pulmonary tuberculosis. On the other hand, in only about twenty per cent. is the presence of laryngeal tuberculosis found during life. This discrepancy in the clinical and pathological statistics depends mostly upon the fact that the larynx is frequently not affected until late. Both sexes are equally liable to the disease, and the greatest number of cases is found among young adults. There is good reason for believing that in the immense majority of cases the larynx is infected by the pulmonary sputum, but a few cases of undoubted primary tuberculosis of the larynx have been reported. The lesion may be either an infiltration or an ulceration; the infiltration may be either diffuse or circumscribed. The former is by far the commoner, consisting of aggregations of miliary tubercle, or of widespread cellular growths. In exceptional cases masses of considerable size project into the cavity of the larynx. On the vocal cords ulceration is the most constant lesion, although this condition is generally preceded by a localized infiltration. In some cases there is found a circumscribed or diffused infiltration of the cords, which assume a semi-transparent, fleshy, thickened appearance. In advanced stages the cord may become completely effaced by ulceration. On the posterior wall of the larynx submucous infiltration and swelling is very common, though ulceration generally co-exists. The thickening of these parts may attain to great dimensions. Next in order of frequency come lesions of the epiglottis, consisting commonly of shallow, multiple, roundish ulcers, or of diffuse tubercular infiltration. Ulceration generally attacks first the laryngeal surface. Extensive destruction of the epiglottis, sometimes erroneously considered to be pathognomic of syphilis, is occasionally the result of tuberculosis. The ventricular bands are less liable to affection, the other parts of the larynx even more rarely. The author found the vocal cords affected in sixty-eight per cent. of the cases of laryngeal tuberculosis; the posterior wall in sixty-one per cent., the epiglottis in twenty-seven per cent., and the ventricular bands in twenty-five per cent. Of the cartilages the arytenoids are particularly prone to become affected by extension of the process of the parts around them, though the other cartilages occasionally become necrosed. Some degree of repair is by no means infrequent in the floor and edges of the ulcers, but healing is rarely more than partial or temporary. An actively secreting and exuberant ulcer may spontaneously transform into a granulating [illegible] surface. In [illegible] cases of spontaneous healing the amount of cicatrization is slight.

DIPHTHERIA AND OTHER MEMBRANOUS AFFECTIONS OF THE THROAT.

During the past year much practical advance has been made in the early recognition of diphtheria by ascertaining the presence of the Klebs-Lœffler bacillus in the throat. In some cities the local boards of health have already completed arrangements by which cultures from suspected cases may be made for purposes of diagnosis. The practical application of this work, especially at the Boston City Hospital, forms the subject of an interesting and concise paper by Dr. F. H. Williams.[3]

The Klebs-Lœffler bacillus is often found with other organisms, chiefly various forms of cocci. These latter may be found in the throat without the bacillus, and associated with appearances that often cannot be distinguished from those accompanying the bacillus except by the aid of a microscope. These cases are often designated as pseudo-diphtheria. In connection with other infectious diseases, notably scarlet fever, measles and typhoid fever, membranous throats are found. Of these some are associated with the bacillus of diphtheria, others are not. The proportion of fatal cases in which the Klebs-Lœffler bacillus is found, is much greater than in cases in which it is not found. In some cases the bacillus was found without, or before, the appearance of a false membrane, a fact which adds to the importance of early bacteriological examination. Cultures are not always infallible for some reason, such as the presence of a small amount of corrosive sublimate in which the bacillus will not grow when planted and therefore must be sought in the original specimen. But with all the sources of error, we now have at our disposal a method of diagnosis better than anything we have ever had before.

In the discussion of Dr. Williams's paper, Dr. W. T. Councilman describes the pathological anatomy of diphtheria and other pseudo-membranous inflammations of the throat. In conclusion, he says that of late considerable attention has been given to the pseudo-diphtheritic or diphtheroid affections of the throat, that is, other inflammations of the throat in which the appearances similate a pseudo membrane. Too frequently a sort of white deposit and discoloration in the pharynx is regarded as a membrane. The membrane found in the membranous inflammation is perfectly distinct anatomically, it is always tense and firm, and is made up of fibrin and degenerated cells. In the diphtheroid inflammations we may have masses of detritus consisting of cast-off epithelium, mucous and masses of bacteria collected on the surface of the mucous membrane and frequently extending into the follicles. This can be easily told from the membrane because on touching it with the needle, the needle sinks into it and it can be removed, not as a membrane, but as a more or less granular mass. Sometimes these deposits are accompanied by considerable swelling, irritation and other evidences of inflammation, and when removed, there may be, here and there, a very slight fibrinous inflammation beneath them. It is not uncommon to have a high fever and considerable constitutional disturbance in these cases, but the condition runs its course in a few days and is attended with little danger.

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[2] Medical Press, February 1st.

[3] Read before the Massachusetts Medical Society, June [illegible]

HAY FEVER.

Under the title of "Periodical Hyperæsthetic Rhinitis," including hay fever, rose cold, rag-weed fever and similar disorders, Sajous[4] gives his recent conclusions concerning the etiology and treatment of this disease, which differ in some respects from those previously given by the same author. The symptoms he believes to be the sudden cessation of the inhibitory functions of the nerve-centres, presiding over the physiological processes of the upper respiratory track. The most marked symptom of this nervous disturbance is hyperæsthesia, and there is a liability of the nasal mucous membrane to become unduly influenced by certain irritants, which irritants differ in different subjects. For a more detailed account of the nervous conditions and the appearance of asthma, we must refer to the original article. As regards the different results obtained from local treatment and cauterization of the nasal mucous membrane, they are ascribed to the great variations existing in the systemic and local conditions, capable of giving rise to the central adynamia. Of all local applications he prefers glacial acetic acid, and has obtained much better and more lasting effects than by the use of the galvano-cautery. The mucous membrane at varying times, after local treatment has been applied to it, tends to return to its former hyperæsthetic condition, and consequently renewed cauterizations, in connection with treatment directed to the central nervous adynamia, are the most satisfactory methods of treating the conditions, with hope of ultimately restoring both to their normal functions. In this way, also, the element of habit, a not unimportant feature of these cases, is eliminated. He condemns the advice given by some authors, to avoid local measures after the annual paroxysm has begun. Many cases are benefited by beginning within the month preceding the attack, or even during the attack. Some cases are permanently cured, some more, some less benefited. As palliative treatment, he suggests contracting the nasal mucous membrane by a solution of cocaine, applied by the physician, once every other day, and maintaining the effect by means of a ten-per-cent. solution of menthol in almond oil, preferably to mineral oils, and by the internal use of atropia, one two-hundredth of a grain every four hours the first day, then every six hours.

THE SURGERY OF THE FRONTAL SINUSES.

Collier[5] describes empyema of these cavities and an operation for opening them. Distension causes the walls to yield in their weakest spot, which is generally through the roof of the orbit, more rarely anteriorly. Where the opening into the nasal cavity is not occluded, pus may make its escape periodically through the nostril. The etiology is often undefined and cannot be associated with any corresponding disease in the nose. Headache at the root of the nose is a common symptom, often more annoying from its persistency than from its intensity. It is often more marked in the recumbent position and on waking from sleep. Dull and rainy weather often increases the headache, also bending forward and stooping, but high altitudes and dry atmosphere decreases it. The diagnosis is often difficult, unless pus is found issuing from the opening of the passage into the nose. To open the frontal sinus, except where there is bulging in the orbit, the author shaves the eyebrows and opens in the exact spot of the middle line on a level with the upper margin of the orbit. An incision is made commencing at the root of the nose, and carried upward about two inches. A hole, three-quarters of an inch in diameter, is trephined, care being taken not to lacerate the lining membrane of the sinus. Some difficulty is found in removing the button as a whole, on account of the bony ridge dividing the sinuses. The diseased sinus is then opened by a scalpel and scissors, any secretion or polypus removed, and an opening is made into the nose, a drainage-tube inserted and maintained in position. The pericranial aponeurosis as well as the skin is separately and accurately sutured. By this method the author obtains healing of the wound by first intention, an insignificant scar and an avoidance of the danger of a fistula. In cases characterized by protrusion and lateral displacement of the eyeball, an incision parallel to the eyebrow at the most prominent part of the swelling, is made, and in this case also, communication of the nose is established.

THE INFLUENCE OF WEATHER ON TONSILLITIS.

Lennox Browne[6] in criticising some recent opinions on this subject, concludes from his hospital records that the epidemic wave of acute tonsillitis is greatest when the first rainfalls, after a lengthened period of dry weather, being but slight, are sufficient to stimulate to activity the dry and comparatively inert organic matter, and it only passes away with the thorough flushing of the sewers after heavier rain. Although dust plays a part in the production of throat diseases, long-continued drought and heat only become seriously noxious factors on occurrence of a change.

THE FREQUENCY OF LYMPHOID HYPERTROPHIES IN CHILDREN.

This subject has, up to this time, not received the amount of attention which its importance deserves. An attempt, on a small scale, to ascertain the condition of the upper air-passages in the throats of children who were supposed to be healthy has been made by Vinton,[7] who finds that out of 550 children, in the New York public schools, only 20 per cent. can be classed as normal; 60 per cent. had more or less adenoid vegetation; 20 per cent. enlarged tonsils, and 12 per cent. had both combined. Fuller statistics of this kind will be valuable in determining the advisability of operating for these hypertrophies in the absence of any symptoms due to their presence.

NASAL POLYPUS.

Marmaduke Sheild[8] describes the common gelatinous polypus of the nose and its proper treatment. While containing nothing new, the paper states clearly the modern method of treating this disease, which is often not sufficiently understood by the general practitioner. The polypi are mostly composed of loose connective-tissue distended with mucin and covered with ciliated epithelium. They are also most always multiple, and swell up in damp weather. In the majority of cases they spring from the mucous membrane, covering the outer wall of the nose, either over the middle turbinate or the mucous membrane of the outer wall under it, rarely from one of the accessory cavities. For their diagnosis and treatment, a speculum and a good light are required. It is important to remove all of the growths, which is best done by means of a cold wire snare, previously bathing the parts with cocaine. It is important to detect and destroy the very small growths, for it is the continued growth of these which leads to such rapid reproduction of the disease. After they have been removed, the mucous membrane, in the situations of the former growths, should be destroyed with a cautery or caustic.

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[4] University Medical Journal, September.

[5] British Laryngological Association, December 11, 1892.

[6] Journal of Laryngology, August.

[7] Medical Record, June 17th.

[8] Clinical Journal, August 2d.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, November 1, 1893, Dr. Abner Post in the chair.

Dr. George L. Walton read a paper on

REDUCTION OF CERVICAL DISLOCATION: A SUCCESSFUL CASE.[1]

Dr. H. H. A. Beach: Dr. Walton has certainly given the subject a most careful investigation. I wish to express my indebtedness to him also for suggesting the method of reduction to which a successful result is due. I do not think that one can appreciate the ease with which such a reduction can be accomplished without seeing it. There is as much difference between the method employed and the ordinary way by extension and counter-extension, which I have commonly used and seen employed in the treatment of spinal cases, as there is between the old way of reducing hip-joint dislocation by the pulleys and that by flexion and rotation. Dr. Walton has cleared up the haze and uncertainty enveloping the directions for reduction prescribed in standard text-books, by his explanation of the mechanism of the articulation and by demonstrating conclusively how and for what purpose the force employed should be applied. An interesting point suggested by my experience in the treatment of this case is the importance of the ligamenta-sub flava as an obstruction to reduction. Under the complete relaxation afforded by ether, the deformity persisted; eliminating, so far as one case could supply evidence, the muscles as a factor in maintaining the deformity of dislocation. This estimate of the muscles as an opposing force in reduction is strengthened by Dr. Walton's experiments with Dr. Richardson on the cadaver, the muscles having been removed from the neck before producing dislocation.

If the muscles are excluded as the factor in maintaining dislocation, what is there to explain the condition? Only the ligaments are left, as Dr. Walton has stated. Of these it seems to me that we may eliminate those that connect the skull with the atlas, the atlas with the axis, and the latter with the third vertebra, in view of the fact that fractures or dislocations there are inevitably followed by rapidly fatal results. The supra-spinous, the inter-spinous and the inter-transverse ligaments may be excluded, as being imperfectly or barely represented in the cervical portion of the vertebral column, leaving only the anterior common ligament and the posterior common ligament [illegible] connecting the bodies, and the capsular ligament surrounding the articular processes, the latter permitting the greatest amount of mobility and need not be considered in the matter of reduction. Last of all let us recall the origin and insertion of the ligamenta-subflava, a strong and tough structure composed of yellow elastic tissue, connecting the laminæ of the vertebra above with its fellow, below, and extending from the root of the articulating process of each side to the point where the laminæ converge to form the spinous process. It is rational in the consideration of luxation to admit the importance of so powerful a ligament, which by its close attachment to the roots of the articulating processes holds them firmly together. I must confess that no other explanation so satisfactorily accounts for the firmly locked vertebræ in their misplaced position, even after the patient is etherized; or for the elastic resistance experienced by the operator during the tension necessary for lifting the superior articulating process enough to permit its rotation to the normal position.

In short, the method provides a carefully planned manœuvre, executed without doing violence to the ligamentous structure, and well calculated to lift the articulating process of a dislocated vertebra by leverage about one-third of an inch, after a considerable resistance is perceptible, and by a slight rotation, remedy a dangerous lesion. Even with fracture I should think that if it were done carefully there would be no impropriety in an attempt at reduction.

Dr. M. H. Richardson: The work that Dr. Walton has done in this subject is, I think, of great value. Even if this method was tried early in the sixties none of us have been familiar enough with it to apply the principles. Cases of dislocation of the neck are certainly not infrequent. They are certainly as frequent as dislocations of the hip. The results are quite as serious as dislocations of the hip, even where the cord is not pressed upon. In the experiments which were made at the Medical School, as I remember them, I was convinced that the trouble with the former methods of extension and counter-extension was in traction upon the wrong ligament. In the old method of traction on the hip with extension and counter-extension, you pulled on the ligament and had to rupture it. I think the same thing is true in these unilateral dislocations, and for that matter in bilateral dislocations. Certain ligaments were put upon the stretch, and that is one reason why in dislocations there is impaired mobility. The ligament is put upon the stretch, and to reduce it by extension or counter-extension you must tear that ligament in two, whereas if you understand exactly the way in which the bones are locked together, by this manipulation the ligament is relaxed which keeps the bone in position, and the thing is lifted into place with the greatest ease. I believe also that the muscles have a good deal to do in keeping this dislocation unreduced. When the muscles have all been removed, as in the dissecting-room, it is very hard to keep that dislocation unreduced of itself. Of course, the force which produces the dislocation tears the ligaments which bind the bones together in normal position, and to reduce that dislocation these ligaments do not stand in the way. That is the reason why by proper manipulation, by going through reversely the same course by which

[1] See page [illegible] of the Journal.

the bones got out of place these ligaments do not stand in the way. Even under ether there is always a contraction of the muscles which keep the bones in that dislocated position; and I believe that whatever force is necessary is in overcoming that muscular contraction, and not in any opposition offered by the ligamentous structures. I have seen the method of counter-extension tried. I think that must be Dr. Warren's case that Dr. Walton referred to. I was not aware of any spontaneous reduction. Two or three of us were at one end of this man, and two or three at the other. We pulled as hard as we could, and it produced no effect whatever. This man was discharged, and sent to Tewksbury to die. I think he had pressure on the cord. I saw him some months or years afterwards running an elevator in Jordan & Marsh's. I do not think there was any reduction of the dislocation. He held his head in the same peculiar position afterwards as before. It certainly seems to be our duty in cases of dislocation without pressure on the cord, and in fact even with pressure on the cord, to go through these manipulations. If any one has a clear understanding of the lesion, I do not believe there is danger of doing harm. If you do not understand the condition of the two bones, you will be increasing the amount of displacement and encroaching upon the spinal canal sufficiently to press the cord. I feel very much indebted personally to Dr. Walton for his paper.

Dr. G. L. Walton: The suggestion of Dr. Beach's I think is a very valuable one regarding the ligamenta-sub-flava, and explains what seems rather difficult to explain without bringing into consideration a ligament which is elastic. It is a point that had not occurred to me at all. Dr. Beach and Dr. Richardson have given me a great deal of credit, but both have aided me much in reference to the anatomy of the parts and their relations, and I have to thank Dr. Beach for allowing me to publish this case. I think a great deal of credit is due to the surgeon who has the courage to attempt the reduction of these dislocations. In reference to the case Dr. Richardson has alluded to, I suppose this is the one which Dr. Warren asked me to see and from which my study of this subject dated. This man's head was bent backwards so that the face was pointed upwards, both articular processes having slipped forward. There was such pressure on the cord that he had a spastic gait, clonus, and exaggerated reflexes and numbness up to the chest. He got steadily worse and was finally unable to get about. He was sent to the Convalescents' Home, I think. While there they were giving him a warm bath and pouring cold water down his back at the same time. He experienced a shock like an electric shock and the bones slipped into place, excepting that the head was held somewhat stiffly afterwards; but it was not in the original position. He certainly could not have recovered the use of his limbs unless there had been a reduction.

Dr. Richardson: We are not speaking of the same case. The man to whom I alluded did not hold his head up as Dr. Walton has described.

Dr. Beach: I am not quite sure that Dr. Walton referred to Ashhurst's table of twenty-nine cases, which furnish an additional argument for a trial in any case. There were twenty-nine cases altogether, twenty-one of which were successful. Extension was employed in fifteen of the successful cases. Of the eight fatal cases one only had extension.

Dr. Walton: I mentioned the cases, but did not mention that fact.

Dr. Fred B. Lund read a paper entitled

A STUDY OF TENDON SUTURE: A FEW CASES OF INTEREST.

Dr. Richardson: This subject seems to be one of the greatest interest to surgeons generally and to the general practitioner. I think some of the members may remember the celebrated suit for malpractice many years ago, in which a physician near Lowell was sued for malpractice for not sewing together the tendons. That was long before the antiseptic days and before any tendon suturing could have been performed with much chance of success, an operation depending so much upon aseptic methods. In this case it was contended by those physicians who were willing to testify against their brother practitioner that the tendons ought to have been sutured. All the tendons in the wrist were cut. In the accident-room the house-surgeons are constantly called upon to make this suture, and, as Dr. Lund says, there is no more important thing. Men come in with clean cut wounds; are practically disabled; the usefulness of the hand is very much impaired. I had considerable experience in tendon suture at first when we were called upon to see these hands; and one of the most successful of the early cases was one that occurred when Dr. Edward Reynolds was house-officer. The woman was leaning on the handle of a bread-knife, the hand slipped and the tendons of the palm were cut off. I sutured the flexors (superficial and deep) of the palm of two fingers and a half. The result was very gratifying. The repair of tendons where is loss of substance is interesting. In all secondary sutures the contractions of the flexor bellies or the muscular bellies cause a wide separation, and in some instances the tendon is destroyed by the accident. A day or two ago, I had a case in which a young man had one of the flexors cut, with the median nerve and one or two muscles. I split the tendon and turned down. The great difficulty in that was caused by the same cause that we have of difficulty in suturing, that is, that the parallel fibres of the tendon are very easily separated, and you cannot get any longitudinal pull except by some such method as described, but this made a very satisfactory lengthening of the tendon, although no force could be applied at the point where the reflection was made. I have always used silk and I suppose that is one of the best methods of suturing. I have had considerable experience with this, and there is nothing so satisfactory as a clean tendon suture, and I do not know of any subject of more practical importance than this. Take this young man, who was practically disabled without a tendon suture; the physician where this happened merely brought the wound together, and the whole palm and the wrist was a mass of cicatricial tissue, and in the midst of the cicatrix were the ends of the median nerve. I referred this case to Dr. Walton for study. He advised immediate liberation of the nerve, and we made suture of the nerve and of the tendon. I feel very much encouraged in the prognosis from what Dr. Lund has said. I should not expect any return of sensation for a long time. I think that every one ought to be familiar with these methods of suture, especially in general practice in manufacturing towns.

In the case just mentioned there is motion in the fingers, but I think it is done by the interossei. Another thing that occurred to me is that a good deal of the motion in the hand in the successful cases must be aided very materially by the great development of the interossei. You can get very good extension of the interossei, of course aided by the lumbricales. The operation referred to was done only Saturday.

Dr. H. O. Marcy: It is a pleasure to listen to such an exhaustive and carefully-written paper upon a subject of much importance. The coaptation of the divided, separated ends of a tendon is often difficult, because the transfixing suture tends to split the parallel fibres held together only by the cement substance, and will permit of very little tension. I have advised the following method as possessing advantages over any which has come to my knowledge: The divided ends having been brought into view, with a fine tendon suture — for this purpose much to be preferred to silk or catgut — fix the side of the retracted tendon with a loop knot, at a little distance from its division. Then insert the needle into the opposite end of the tendon at right angles to its long axis, and when the ends of the tendon have been approximated, fixing the suture by a half-reef knot. This is repeated one or more times as may be deemed desirable. A continuous fixation suture thus applied with a fine, round needle, minimizes the damage to the tendon, holds it securely in its grasp; and when impossible to make complete coaptation, it serves as a ladder to bridge the gap with material of identical histological structure. It remains also unchanged for a much longer time than catgut.

CANCER OF THE UTERUS.

Dr. M. H. Richardson: This uterus I removed yesterday from a comparatively young woman for marked cervical disease. She had been suffering for some months with the usual symptoms of cancer. Early this summer I curetted and cauterized the mass with great care, preparatory to an extirpation of the uterus. She was so much improved by this operation that she returned home, and did not present herself for the more radical operation until two days ago. There was an extensive ulceration of the cervix, with thickening. No metastases could be discovered.

The patient was prepared for a combined abdominal and vaginal hysterectomy. After making the vaginal cut, the uterus was found to be so movable that I finished the operation by that route. The whole operation took ten minutes. The broad ligaments were easily, and apparently securely, tied. Great care was taken not to infect the abdominal cavity, and the parts were irrigated and cleansed most thoroughly after the operation. She rallied from the ether well.

During the afternoon and evening she showed signs of internal hæmorrhage. The pulse gradually rose to 120. In my absence, Dr. Scudder was called. Before he got there the pulse had risen to 160, and there was a subnormal temperature. He removed the packing and found a continuous ooze from the left side. The lower abdomen was freed of blood clot and fresh packing put in high up above the wound into the abdomen. No vessel of any size could be found and no ligature could be applied.[2]

This — the chief danger in a hysterectomy by the vaginal route — has never happened before in my experience. At the close of the operation the wound was perfectly dry, the ligatures were tight, and the case looked as promising as any that I have ever had. In a few hours, in spite of all the care that had been taken, the patient passed from a condition of comparative safety to one of the utmost danger.

In the past four weeks I have removed the uterus, for various causes, six times. In every case I selected the abdominal route. All the cases were septic — either from ulcerating cancer or from a sloughing fibroid. The dissection was carried on — the patient being in the Trendelenburg posture — with the greatest ease. The floor of the pelvis was covered, after the removal of the uterus, by sewing the peritoneum together with a continuous Lembert stitch. All recovered without complications.

It seems to me that, on the whole, the abdominal route is preferable in most cases of hysterectomy.

This specimen shows the great limitations of this procedure in cancer. The disease has been removed by a very narrow margin — a margin that would seem utterly inadequate in cancer of the lip or cancer of the breast. In spite of the advanced stage of this disease, there was no evidence of infiltration in the broad ligaments.

Dr. Marcy exhibited a cancerous uterus of extraordinary size removed by vaginal hysterectomy. The specimen possessed additional interest because of the enlargement of the right Fallopian tube, which was distended with a dark-colored fluid, and where it presented in the wound resembled a loop of small intestine. The removal had been effected with the unopened tube still attached to the uterus.

TUMOR OF THE PAROTID.

Dr. Richardson: This specimen shows macroscopically the characteristic appearances of the more common parotid tumor — myxochondroma. Clinically, the case presented features of great interest. The patient, Mrs. T., a woman fifty-four years of age, had had for about two years a swelling in the left parotid region. There had been no pain, except an occasional pressure symptom in parts remote from the tumor. The general health had been very good. The tumor presented itself below the left ear, at the lower angle of the parotid. From this point it extended inwards, half filling the pharynx. She was sent to me with the diagnosis of cancer, and the case was supposed to be inoperable. The irregularity and hardness of the mass suggested strongly to my mind a cartilaginous tumor; but the more I examined it, the more uncertain seemed both the diagnosis and the possibility of its removal.

This morning, under ether, I cut down upon the mass, and found it — to all appearances — an enchondroma. It was distinctly encapsulated, and extended behind the angle of the jaw well into the pharynx, pressing upon the tonsil. It was attached superiorly to the pterygoid plates of the sphenoid; posteriorly it pressed upon the styloid process. The mass was enucleated without difficulty, and with very little hæmorrhage. Great care was taken not to injure the facial nerve, though I had told her that, on the chances, it would be impossible to avoid total facial paralysis. The facial nerve was exposed during this operation, and held one side, and apparently is uninjured. The tumor itself was friable, and came to pieces in its enucleation. In parts it is distinctly cartilaginous; other portions suggest a myxomatous condition.

Dr. Councilman, on seeing the tumor, without knowing its origin or history, at once pronounced it a myxochondroma of the parotid. This opinion has been verified by microscopic examination.

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[2] [illegible] discharged from the hospital.

DR. MARCY: Dr. Richardson's cases are of much interest. I would like to ask him, or any member of the Society, the explanation of the very high temperature which occurred in a case recently operated upon. An enormous pus-tube was everywhere adherent — to bladder, intestine and pelvic walls. It probably contained nearly a quart of very offensive pus, and unfortunately broke on removal. The utmost care was exercised in cleansing the pelvic basin, and a packing of iodoform gauze was applied. Soon after being placed in bed the temperature was 102°+, and it rose steadily to 108°+ before her death, which occurred in thirty hours. The pulse was small and frequent; little pain; mind clear and active to the last. The autopsy, as might have been expected, showed no evidence of peritonitis. Time for septic poisoning by germ development was wanting. Why the remarkable elevation of temperature?

Dr. Marcy also reported a case of

REMOVAL OF FOUR INCHES OF THE RECTUM FOR CANCER: ANASTOMOSIS BY MEANS OF THE MURPHY BUTTON.[8]

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THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON GENERAL MEDICINE.

STATED MEETING, November 21, 1893, CHARLES E. QUIMBY, M.D., chairman.

DISCUSSION ON THERAPEUTIC INSTABILITY, ILLUSTRATED BY PNEUMONIA AND TYPHOID FEVER, WITH SPECIAL REFERENCE TO DIETETICS AND SPECIFICS, CARDIAC AND GENERAL STIMULANTS, AND ANTIPYRETICS.

The discussion was opened by DR. WM. L. STOWELL, who read a paper entitled,

STATEMENTS IN LEADING WORKS ON MEDICINE OF THE PAST TWENTY-FIVE YEARS.

DR. WM. H. DRAPER said he did not think the changes in treatment described in the paper just read were really as great as one at first sight might suppose. If we were to crystallize the various opinions expressed by the different authors referred to, we should find that while the means employed were numerous, the principles involved were very few. Instability was, perhaps, rather an opprobious term; yet it would certainly have been very unfortunate if there had been stability in the matter of therapeutics, since instability represented progress.

As regards pneumonia and typhoid fever, it was doubtless within the recollection of many of those present that pneumonia was considered a purely inflammatory disease; so that the older practitioners treated it by bleeding, purging and sweating. In the same way typhoid fever was looked upon as an affection in which the intestinal lesion was really the important and essential feature, and it was therefore treated with remedies intended to exorcise the disease from this part. The great revolution in therapeutics which had come about within his recollection, was based on a study of the pathology of the disorders in question. This determined the fact that both pneumonia and typhoid were essential fevers of limited duration which ran their course in a definite period. Therefore, they were now treated symptomatically. While it was true that we could not abort or "cure" them, their whole treatment was revolutionized. He did not mean to say that during all this time many so-called specifics had not been brought forward and tried. The great revolution in the treatment, however, was due to the knowledge that had been acquired of the natural history of these diseases, rather than to any essential specific method of dealing with them. He believed that they were treated much more successfully than was the case thirty years ago, simply for the reason that they were now allowed to run their course without any damaging interference on the part of the medical attendant.

He did not think that in our time we should meet with any specific for either pneumonia or typhoid fever. The researches of scientific men in regard to the germ theory up to the present time did not offer any such hope. If we even did succeed in finding a specific treatment, it would doubtless be based on bacteriology, but thus far no agent for destroying the disease germs had been discovered which would not also destroy the life of the patient if employed in such a way as to accomplish the former result.

In regard to the matter of dietetics, no special changes had come about within the last four years. The revolution in this field had taken place before his time, in the days of Graus and Stokes. When the former expressed the desire that the words "He fed fevers" should be inscribed upon his tomb-stone, he struck a note which at once resounded throughout the civilized world, and everywhere met with a warm response. It seemed to him, however, that for a number of years after the time of these great men the pendulum had swung too far in the other direction. Murchison was, therefore, correct in stating that fever patients were, as a rule, overfed. In our desire to sustain the strength, we frequently give more nourishment than could be assimilated. The introduction of milk as a food in fevers was a great improvement on the old beef-tea diet. As Flint said, beef-tea was perfectly worthless, except to supply the system with fluid. It was a well-ascertained fact that albumen was not well digested by fever patients. It was not best, therefore, that we should give them albuminoids to any extent. He felt sure that every one present had at times observed difficulty in the digestion of milk, on account of the albumen which it contained. In the febrile condition it was utterly useless to attempt to give any amount of albuminous food. Fatty matters, cream and the sugar of milk, with sufficient water, were much more satisfactory. One of the greatest improvements that had been made of late years had been the establishment of milk laboratories in New York and Boston, for which we were indebted to Dr. Rotch, of the latter city. From these could be obtained for infants and invalids milk with a diminished percentage of albuminoids, the preparation of the milk being varied in different cans according to the prescription of the physician. During the continuance of the fever we could not expect to nourish the albuminous tissues.

Dr. Draper went on to say that there was another point in regard to which his experience did not show any very great variability. When he entered Bellevue Hospital, enormous quantities of alcohol was given to fever patients, although one, at least, of the attending physicians, the late Professor McCready, did not sanction this practice, always protesting that it was "a great waste of good whiskey." At this time it was very common to administer from a pint to a pint and a half of this stimulant in the twenty-four hours to those suffering from typhoid and typhus fever, particularly the latter. As with the matter of feeding, so he believed that there was over-stimulation in those days. Murchison laid down some very good rules in regard to the use of alcohol in fevers, but he did not think they were any better than those of Stokes, which he had always found admirable in practice. So long as alcohol diminished the frequency and improved the force of the pulse, so long as it rendered the tongue less parched and dry, so long as it diminished subsultus and delirium, there could be no question that it was doing the patient good. But when it seemed to increase the frequency of the pulse, to render the tongue dry, and to increase cerebral excitement, it was causing mischief. This mischief was explained by the fact that an excessive quantity of stimulus was being given; the alcohol circulating in the blood as alcohol, and not being consumed. There was always an active controversy going on as to whether alcohol was a food or merely a stimulant; but when we found that a patient was taking a pint of whiskey in the twenty-four hours, and yet no odor of it whatever was perceptible in his breath, it certainly looked to him as if the alcohol must be consumed, or at all events gotten rid of very quickly by the system. It was either split up and consumed, or else was eliminated by the kidneys and skin with such rapidity that it did not intoxicate the individual.

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[8] See page 561 of the Journal.

Dr. A. A. Smith said that he wanted to have more hope than his friend, Dr. Draper, in regard to the successful treatment of pneumonia and typhoid fever. He had passed from the time in his very early practice when he learned that there was those who believed that the course of these diseases could be shortened. Now we knew that this was impossible. At the same time, he believed that the time would come when we would be able to shorten them, though not by destroying the germs giving rise to them. Recent investigations founded on Koch's discovery of tuberculin, (although the latter, used in the way in which it was had proved a dismal failure,) seemed to indicate this. His memory or experience did not go back as far as Dr. Draper's; but of all the remedies which were in use when he commenced to practise, twenty-two years ago, alcohol was the one, *par excellence*, which had held its own. At the time to which he referred, it was given unstintedly from the beginning to the end, and its administration was largely a question of how much of it the patient could hold. At Bellevue Hospital, as at the period mentioned by Dr. Draper, alcohol was used as the standard treatment. More recently there had been a change in this respect, and he would venture to say that, while it was perhaps given in as many cases at the present time, it was prescribed in much smaller quantities than formerly. From his personal observation, therefore, he would place it first among tonics and stimulants.

The second place in this respect he would give to opium, and particularly in the treatment of pneumonia. He placed it among tonics and stimulants because he believed that was where it truly belonged. If it were an agent acting alone upon the heart, it could hardly be classed among them; but if we regarded it from the standpoint of its action on both the nervous system and the heart, opium would be found to hold an important place as a tonic and stimulant. Especially was it valuable in pneumonia if there was much pleurisy present, with considerable pain and a great deal of disturbance of the nervous system, and if the cough was troublesome. It gave the patient an opportunity to oxygenate his blood. It should not, however, be used in too large quantities or for too long a time.

As to quinine, when he was an interne at Bellevue Hospital he was instructed by the visiting physician to give, as a rule, from sixty to eighty grains a day to patients suffering from pneumonia, and was taught that it acted as a heart tonic and nervous stimulant, sustaining the patient, reducing temperature a time, and shortening the disease. In many cases he believed that these large quantities of quinine did shorten the disease, though it was only by shortening the patient's life. Of course, a large number of the patients recovered, but he had no doubt that it was in spite of, and not on account of, the good effect of the remedy. He would venture to say that no one at the present time would think of giving eighty grains of quinine a day in a case of lobar pneumonia to-day. In small doses, however, (say from six to eight grains a day,) it was an efficient tonic and stimulant, and still held a useful place in our armamentarium.

Ammonia. — Twenty-two years ago the preparations of ammonia occupied a prominent place in the treatment of pneumonia. Following the lead of Richardson, who claimed that they lessened the coagulability of the blood, our medical men gave carbonate and muriate of ammonia freely to every patient. Whether they did good or not, he was impressed with the fact that these agents almost invariably produced disturbances in digestion. At the present day they were not used nearly so much as formerly. There was one preparation of ammonia, however, which was not open to the same objection, and which often acted very well, namely, the aromatic spirits.

Digitalis. — Digitalis was not so much used as formerly. It held its place well for a number of years, and then lost ground. At the present time, however, it seemed to be again gaining in favor. Personally, he employed it more than he did twelve years ago, but not to as great an extent as he did twenty years ago. As to convallaria, it had flashed out brilliantly for a short time; but its day had gone by. Strophanthus was not equal to digitalis as a tonic and stimulant, but was still used by many practitioners. There was a doubt in a good many minds, however, whether either strophanthus or digitalis was ever called for in typhoid fever or pneumonia.

Strychnia. — This was one of the best, if not *the* best, heart and nerve tonic on our list of drugs. Twenty years ago it was scarcely used at all; but it now occupied a very prominent position. Along with strychnia there was another agent which deservedly held a very high place. Glonoin had of late grown in favor in the treatment of pneumonia. There was much diversity of opinion in regard to it, and it was exciting a considerable amount of discussion; but it seemed to him destined to hold its place.

Baths. — It was only within a few years that baths had become so popular in this city and country, and he thought that they properly came under the classification of tonics and stimulants. He was glad to agree with those who were enthusiastic as to their efficacy, and believed that where they were employed the ordinary tonics and stimulants were not nearly so much called for as otherwise.

The ethers and camphor had not held their own at all, although ether might occasionally be used with good effect in an emergency. If oxygen was classed among the tonics and stimulants, it was only because it acted in the capacity of these in an indirect way. Twenty years ago it was much employed. Then it fell into disuse, and now again was gaining in favor.

Dr. Alfred L. Loomis was to have treated of the subject of Antipyretics, but was prevented by illness from attending the meeting.

Dr. George L. Peabody spoke on the

ACCEPTED TEACHINGS OF TO-DAY.

In regard to pneumonia, he said he thought that we had entirely a matter of intelligent, expectant and symptomatic treatment. There was no routine treatment that could be applied to any considerable number of cases, because the cases varied so greatly in character. For the treatment of the cough in some patients, inhalation of chloroform in small quantities was found beneficial. Five or six drops were enough for this purpose, in a wide-necked bottle covered with cotton. By this means the reflex irritability of the pharynx was not infrequently relieved. Inhalations of the hot vapor of water were also valuable in alleviating cough and loosening and promoting the discharge of matters from the upper air-passages. While some patients were greatly annoyed by coughing, others obtained relief only by this means.

Pain often called for treatment. In the minds of many practitioners, however, there was a bitter prejudice against the use of opium and its alkaloids in pneumonia. This, no doubt, had its basis in the old idea that these agents depress the respiratory centres and were therefore contraindicated. He knew of one very prominent physician, of large hospital and private experience, who was especially outspoken in opposition to the use of opium in any form and would not prescribe even the one-sixteenth of a grain of the drug in a cough mixture. Personally, however, he believed that we were amply justified in giving one-sixth of a grain of morphia subcutaneously, as circumstances required, provided the patient was carefully watched. Occasionally, the pleuritic pain was readily relieved by external applications of heat or cold. Both heat and cold seemed to act equally well in this respect, and this was, no doubt, because they both produced very much the same effect locally.

For the relief of insomnia we frequently had to resort to the use of hypnotics, and here he preferred the use of such agents as sulphonal to opiates.

Dyspnœa, if not due to involvement of a very large amount of lung tissue, but to venous congestion, could often be successfully relieved by the temporary withdrawal of blood from the parts by means of ligatures placed upon both the upper and lower extremities. These could be allowed to remain with perfect safety for from an hour to an hour and a half. Of course, if the urgent symptoms were due to very extreme involvement of lung parenchyma, such ligatures were of little or no value. Under these circumstances came in the efficacy of oxygen; but except such a condition were present, he did not think the use of this agent was called for.

Stimulants alone were often of great service. Among these caffeine ranked high, but it was important that we should have a reliable preparation of the drug. Most of the citrates of caffeine sold were worthless, and he therefore advised that caffeine itself should be used. It was true that caffeine was insoluble in water, but it was readily soluble with citric acid, and under the circumstances it was best for the physician to make his own solution.

In croupous pneumonia, hyperpyrexia should be treated exactly as in typhoid fever, namely, by means of cold baths after the Brandt method. With a temperature of from 103° to 105° it was perfectly satisfactory to put the patient in a bath of 65° every three hours, if necessary, and frictions to the body could be more thoroughly applied in pneumonia than in typhoid fever, for the reason that in the former it was not necessary to spare the abdomen. Sponging was of much less value. The use of antipyretic drugs he believed to be absolutely unjustifiable in pneumonia, that is, if given for the purpose of reducing the temperature. It was true that in a strong, robust patient such agents as phenacetine might occasionally be used with advantage; but they should never be given in antipyretic doses. In this disease it was important that the heart should be sustained in every possible way, and it should be urged that the patient be kept constantly in a recumbent position.

The food should be simple and nutritious, and nothing was better than some form of milk, predigested or fermented. As regards stimulants, alcohol was better than anything else. Digitalis, while inferior to alcohol, was still a serviceable agent, and it was a matter of some importance to know that we now had a perfectly reliable preparation of that drug in digitalin. The dosimetric method of medication, recently introduced from France, was now used to some extent in our hospitals. It was the practice to administer one one-hundred-twentieth of a grain of aconitin, one sixty-fourth of a grain of digitalin, and one one-hundred-thirtieth of a grain of arseniate of strychnia every hour, as long as the pulse remained above 100. When he commenced the use of this treatment he felt convinced that his pneumonia patients were materially benefited by the remedies employed, but more recently he had been so frequently disappointed in the results obtained, that he did not now employ the dosimetric system as much as before.

As to drugs in the treatment of typhoid fever, the modern teaching was practically this, the fewer the better. The systematic cold bath, as prescribed by Brandt, he believed to be rapidly superseding all other methods of treatment, and in his opinion it was worth more than all the other means employed in the last twenty years. He wished to say, however, that he did not think the matter of intestinal antisepsis as yet a finished chapter, but still hoped that something would come of it. Of course, we could not expect to destroy the germs in the intestines and elsewhere, but whether it might not be possible to antagonize the septic alkaloids resulting from them was still an open question. Some time ago he had treated quite an extensive series of typhoid fever cases by means of beta-naphthol and resorcin, and the results seemed so satisfactory that he was inclined to believe that an important advance had been made; but when he came to compare his results with those of other physicians who had not employed either of these agents, he found that they were equally satisfactory, and he was therefore forced to the conclusion that the success noted was due, not to the remedies employed, but to the comparatively mild character of the disease prevailing at that time.

Dr. Simon Baruch said that the stability of a remedy must be judged by the length of time in which it had been in use. He found that some of the remedies which had been most highly commended by the speakers this evening were mentioned by Hippocrates. These were the hygienic remedies, dietetics and baths. In fact, they were the only ones thus commended which were to be found in the writings of Hippocrates.

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Recent Literature.

The Meaning and the Method of Life: A Search for Religion in Biology. By George M. Gould, M.D. New York: G. P. Putnam's Sons. 1893.

"One of the saddest things in man is his willingness to be ignorant and incurious of the mystery that he is, and by which he is surrounded. . . . All things are divisible into living and lifeless things. To identify matter and the living intelligence shown in every cell and organism by any system of theology or materialism is to do violence to logic."

These extracts from the introduction suggest the lines of thought into which Dr. Gould leads the reader. Dr. Gould is a thorough physiologist, too thorough, we suspect, to be readily followed by non-medical philosophers; and he is certainly too thorough a metaphysician to be easily followed by most medical men. In spite of this the book is fascinating, and will be especially so to those whose religious belief, or whose atheism does not force them to disagree with the reasoning from the start. The key-note of the method and meaning of life lies in a God who is not omnipotent, whose manifestation appears in life, and whose implement is the living cell. Belief in an omnipotent and absolutely good God leaves, to many minds, much unexplained in science and in religion. Dr. Gould's Biologos, or God working through the cell, shows unbounded goodness and love and beauty. He encourages every thing good and combats every thing bad. Badness, when it occurs, is contrary to his wish, but beyond his control. He has no power over matter except indirectly through his living structures.

It is impossible for us to enter deeper into the book without being urged on still farther. We recommend it to our readers with the belief that they will find much in it worthy of thought.

Hand-Book of Public Health and Demography. By Edward F. Willoughby, M.D. London and New York: Macmillan & Co. 1893.

Solomon's often-quoted aphorism, "Of making many books there is no end," applies with unusual aptness to the numerous works upon public hygiene which have been published within the past two years. This recent work by Dr. Willoughby, is one of the better books of its class, and in its main points constitutes a trustworthy and valuable hand book. The author's classification is as follows: The health of man, embracing dietetrics, clothing and personal hygiene, habits, exercise and rest; the health of the house, including air, warmth, light, ventilation and general sanitary arrangements; the health of the city, including water-supply, disposal of refuse and excreta, river pollution, and disposal of the dead; the health of the people, treating of preventable diseases, school hygiene and health of the workshops; demography; meteorology. An appendix is added, containing a digest of English health laws, with the metric system and other useful tables.

The author's classification is worthy of careful study, and suggests the fact that the present system in use by English-speaking physicians generally, has outgrown its usefulness and should be revised to conform to the progressive teachings of medical science.

The chapter upon demography is especially clear and concise, and will be found very helpful.

Treatment of Sterility in the Woman. By Dr. De Sinety. Translated by E. P. Hurd, M.D. Detroit: George S. Davis. 1893.

This number of the "Physicians' Leisure Library" gives to the profession De Sinety's well-known treatise on sterility. It is a very satisfactory presentation of the subject, and gives all the well-recognized causes of sterility and their treatment. In spite of the numerous causes which are undoubtedly operative in this condition, the fact remains that there are many cases where no cause can be found. There is no question that in time we shall know more about these obscure cases, and it was hoped that Dr. Sinety might throw some light upon them, but he fails to do so.

The book is interesting and instructive reading.

Zur Lehre Vom Luftwechsel. Von Dr. Gustaf Wolffhügel, Professor and Director des hygienischen Instituts an der Universität Göttingen. Munich, 1893.

Professor Wolffhügel very justly dedicates this monograph of seventy-five pages to Pettenkofer, upon the occasion of the latter's recent jubilee, and takes occasion to say in the opening chapter that Pettenkofer's work upon ventilation, for many years out of print, leaves but little to be said upon the subject.

The principal chapters are devoted to the problem and the object of ventilation, the examination of the air of inhabited apartments and the calculation of the air-supply. The book is especially rich in its quotations from the best modern authorities upon ventilation.

Outlines of Practical Hygiene, adapted to American Conditions. By C. Gilman Currier, M.D. Pp. 468. New York: E. B. Treat. 1893.

In this excellent treatise the author states that his "dominating principle has been to maintain a judicial attitude in every detail, allowing no scope for vagaries. Accepted truths alone are incorporated in its chapters." The book is devoted to the principles of public, and of personal, hygiene, and the author shows himself to be thoroughly conversant with foreign as well as American literature upon the subject.

The illustrations are mostly new and well selected, and the book may be commended as a safe and ready hand-book for the health-officer, the general practitioner and for all persons who desire concise and well-expressed information upon this subject.

A Manual of Diseases of the Ear. By George P. Field, M.R.C.S. Fourth edition. Philadelphia: Lea Brothers & Co. 1893.

Mr. Field's fourth and enlarged edition comprises three hundred and seventy-one pages; nineteen colored plates, chiefly views of the external auditory canal and of the membrana tympani and middle ear, as seen through a speculum; sixty-seven wood-cuts in the text; and a double index of authors and of subjects. The book is intended as a reference hand-book for the practitioner, and devotes but forty-one pages to the consideration of the anatomy and physiology of the ear, the remaining chapters being in the form of clinical lectures, with quotations of illustrative cases occurring in the author's practice. To the subject of osseous tumors of the external auditory canal, a chapter of twenty-seven pages is devoted, with a tabulated record of operative results; and twenty pages are given to diseases of the auricle. The chapters on acute and chronic non-suppurative disease of the middle ear include sixty-six pages, and those on suppurative disease and its results, eighty-one pages. The mention of operative procedures in this connection, especially of the mastoid operation, except as they occur in the report of cases, are very short. The chapter on the value of pain as a symptom of ear disease, is both readable and suggestive. The remaining chapters, on diseases of the internal ear, include a *résumé* of the author's observations on the use of pilocarpine.

The Mastoid Operation. By SAMUEL ELLSWORTH ALLEN, M.D. Cincinnati: Robert Clarke & Co. 1892.

This book of one hundred and eleven pages is an excellent review of the subject of mastoid operations as defined by Schwartze, to whom the author gives this credit in his preface. The first part, comprising twenty-nine pages, is historical, beginning with the first recorded operation by Johannes Riolanus in 1649, and terminating with the latest contribution of Stacke in his method of opening the mastoid antrum. The anatomical portion, comprising twenty-five pages, is illustrated by five good plates of section of the temporal bone and is clear and direct in its descriptive text. The remainder of the book gives the pathology of the subject very briefly, and the method of operation, as taught by Schwartze, more at length; and this is followed by a description of the operation of Stacke. The work is to be commended for the spirit in which it was undertaken and for its value as a careful record of observations.

Text-book of Normal Histology. By GEORGE A. PIERSOL, M.D., Professor of Anatomy in the University of Pennsylvania. 8vo, pp. xviii, 439. Philadelphia: J. B. Lippincott Co. 1893.

This beautifully printed and illustrated volume deserves a cordial welcome, as a very valuable compendium of histology, which is so well done, except in regard to the accounts of the course of the renal tubules and of the uterus, that there is little opportunity for unfavorable comment. It ought at once to take its place as the accepted standard manual of the subject. It is pervaded by that freshness, which is won only by those authors who have a first hand mastery of the subject. The great pains taken by the author is especially evidenced by the numerous and very accurate figures, with which the pages are crowded. These figures preserve well the natural appearance of the preparations, and will, therefore, be far more useful than the crude illustrations, which have marred many of the best English text-books, to perplex and discourage students and others. In an appendix there is given a judiciously selected collection of the most useful methods.

We can thoroughly recommend Dr. Piersol's treatise and hope it will have a large sale.

An Elementary Text-Book of Biology. By J. R. AINSWORTH DAVIS. Two volumes, 12mo. Part I, Vegetable Morphology and Physiology, one volume, pp. 287. Part II, Animal Morphology and Physiology, pp. 405. London: Charles Griffin & Co., Lim't. 1893.

This excellent work describes, with a view to laboratory study, a series of typical plants and animals, following the method of practical instruction which has done so much to elevate biology as an educational discipline. The selection of types is good, the descriptions are clear, and there is a good deal of general information included; so that a student who had worked carefully through the two volumes would possess the foundations of a general knowledge of biology. The illustrations and press-work also deserve praise. It is an objection to the manual that too much space is devoted to the lower types. The work is especially designed for college classes.

Heath's Practical Anatomy; A Manual of Dissections. Eighth edition. Edited by WILLIAM ANDERSON, F.R.C.S. With 329 engravings on wood. Philadelphia: P. Blakiston, Son & Co. 1893.

Mr. William Anderson has given another proof of his merit as an anatomist by his excellent editing of this well-known work. He has improved it by taking out as well as by adding, and yet the physiognomy of the book remains the same. The omission of histology, which was not only antiquated but out of place in such a work, is something to be thankful for. Excellent diagrams have been introduced, and frozen sections are coming into favor. T. D.

Der Bau des Menschen als Zeugniss für seine Vergangenheit. [*The Structure of Man as Witness of his Past.*] Von DR. R. WIEDERSHEIM, Prof. an der Universität Freiburg. Zweite umgearbeitete und stark vermehrte Auflage. Mit 190 Figuren in Text. Freiburg und Leipzig: J. C. B. Mohr. 1893.

This second edition of a remarkable publication is considerably larger than the first, and has many illustrations. Its merits and defects are of the same nature as in the former edition, which was well characterized by a distinguished anatomist as "exhaustive but not critical." Every part of the body is in turn called upon to show its normal structure, its embryology and its variations, its close resemblance and analogies to corresponding parts throughout the animal kingdom. As a monument of anatomical learning the work deserves the highest praise. It is to be strongly commended to every anatomist as a most useful book of reference. Philosophically the work leaves something to be desired. It proves clearly enough the essentially animal nature of man's *body*, but then no one nowadays questions this, and to harp on it too long is

"Thrice to conquer all one's foes,
And thrice to slay the slain."

But when it comes to understanding why or how certain anomalies appear in man we are left in the lurch. The author appears to be satisfied to prove that these are normal in certain animals. This is hardly satisfactory if some of these animals are on side lines and can by no possibility have been in the line of descent. It seems more and more necessary to invoke some as yet unknown law to account for what may be called cross-relationships. In other words there are phenomena not to be explained by heredity. T. D.

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THE TWENTY-FOURTH ANNUAL REPORT OF THE MASSACHUSETTS STATE BOARD OF HEALTH FOR THE YEAR 1892.

THE successive reports of our State Board of Health mark a progressively increasing interest in matters of public health which is most satisfactory in its results. Weekly returns from sixty per cent. of the population of the State are now received at the State House, reporting causes of death, temperature-variations, etc., for each locality; and seventy-three local boards of health, representing seventy per cent. of the population, report annually cases of illness and deaths, and record all sanitary needs and improvements. In 1892, the ratio of deaths to reported cases was from diphtheria, 29.24; scarlet fever, 4.60; typhoid fever, 22.99. In 1891, the mortality was, respectively, 23.5, 3.34, 19.05, as compared with 23.7, 5.8, 20.8, in England for that year. By recent law, all cases of diseases dangerous to the public health must be reported to the State Board of Health by the local boards within twenty-four hours of their receiving notice of them.

Boston records the lowest mortality from typhoid fever of any large city in this country, 2.9 per 10,000 inhabitants, as compared with 17.4 in 1846, before the introduction of a public water-supply, and an average of 3.2 from 1890 to 1892 inclusive, or .9 less than the average from 1885 to 1889. This low average for the last three years the Boston Board of Health attributes to an improved water-supply and to better hygienic conditions. The Board has with commendable zeal at last established a disinfecting station, fourteen years after its importance was urged by the State Board. Its inspection of cattle for slaughter and for export, and its sanitary control of dairies and cow stables have been perfected during the year.

In Bridgewater, scarlet fever became epidemic, and for a while beyond control, by infection through cases so mild as not to be recognized. In Brookline, the local board was petitioned to abate a local prevalence of intermittent fever.

In general, local epidemics of typhoid fever were attributed to bad drinking-water or imperfect drainage, and many polluted wells were condemned; great complaint is made of methods of disposal of swill and garbage of varying degrees of nastiness, with general commendation of the crematory at Lowell; the need of district sanitary inspection is emphasized; more thorough vaccination is urged; hospitals for infectious diseases are demanded.

In Waltham, an officer was employed to enforce absence of infected children from school, etc., and in East Bridgewater the local board demanded — what should be subject to general law — compensation to men kept from their work, in order to compel quarantine and care of their infected families.

There was an epidemic of fifteen cases of small-pox, with two deaths, in New Bedford, in June; and throughout the year there were four other cases in other towns. Three small outbreaks of typhus fever, from immigrants, were readily controlled. The interstate notification of diseases dangerous to the public health has given prompt information throughout the country of their appearance in any locality.

The 587 exceedingly interesting pages of the Report on Water-supply and Sewerage, under the provisions of Chapter 375 of the Acts of the Legislature of 1888, comprise 71 pages of most valuable advice to cities and towns on water-supply, sewerage and sewage disposal, and pollution of streams, with articles on examination of water-supplies, examination of rivers, summary of water-supply statistics; three papers by Prof. Thos. M. Drown, Chemist of the Board, "On Interpretation of Water Analysis." "On the Amount of Dissolved Oxygen in the Water of Ponds and Reservoirs at Different Depths in Winter, under the Ice," and "On the Mineral Contents of Some Natural Waters in Massachusetts"; two papers by Gary N. Calkins, Assistant Biologist, "A Study of Odors observed in the Drinking-Water of Massachusetts," and "Seasonal Distribution of Microscopic Organisms in Surface-Waters"; "Experiments upon the Purification of Sewage at the Lawrence Experiment Station," by Allen Hazen, Chemist in Charge; "Experiments at the Lawrence Experiment Station upon the Purification of Water by Sand Filtration," by George W. Fuller, Biologist at the Station; "Some Physical Properties of Sands and Gravels, with Special Reference to Their Use in Filtration," by Allen Hazen, Chemist in Charge; "Sewage Disposal of Cities and Towns in Massachusetts by Intermittent Filtration."

The Board concludes, from investigations of artificial ice, that artificial processes of freezing concentrate the impurities of the water in the inner core or the portion last frozen; that the impurities are least if distilled water is used; that the number of bacteria in artificial ice is insignificant, under the prevailing methods of manufacture; and that the amount of zinc found in ice is insufficient to cause injury from its use.

Under the law for food and drug inspection, 5,712 samples of food, including 3,271 of milk, were examined, of which 1,913 (of which 1,514 were milk) were found adulterated or below the standard. Of 487 samples of drugs, 312 were found of good quality. There were 136 complaints made in court, 123 convictions, and fines imposed of $3,661.70.

Five[1] detailed investigations of epidemics of typhoid fever, with the well-known thorough and scientific methods of Professor Sedgwick, the Biologist of the Board, constitute most interesting contributions to the study of that disease.

Professor Sedgwick's original bacteriological investigations, which proved so conclusive as well as novel, are already familiar to the readers of the Journal.[2] In greater detail and with an excellent series of illustrations, they form the basis of the first paper. In the last, Professor Sedgwick attributes the three outbreaks to secondary infection from one person to another through uncleanly habits.

PREVENTION OF TUBERCULOSIS.

At a meeting of the Board of Health of the City of New York held November 29th, Dr. Herman M. Biggs, Chief Inspector of Pathology, Bacteriology and Disinfection, made an important report on tuberculosis. It was supplementary to a previous report in regard to the disease submitted by him four years ago in conjunction with Drs. Prudden and H. P. Loomis; as a result of which the Board issued a circular of information and instruction for public distribution. In his present communication Dr. Biggs says: "The time, it seems to me, has arrived when it becomes the duty of all sanitary authorities to assume a more aggressive attitude towards this, the most widely purulent and fatal disease to which the human race is subject, and I desire to present to the Board certain suggestions as to definite means which should at once be taken to prevent and restrict tuberculosis." Before offering these suggestions, he points out the fact that for a number of years the deaths from tuberculosis in New York have amounted to more than five thousand annually, and makes some general observations on the nature of the disease; among which are the following:

It has been shown that many millions of tubercle bacilli may be discharged, under certain conditions, by one person suffering from pulmonary tuberculosis in the course of twenty-four hours. As tuberculosis can only result from the action of these germs, it follows that when the disease is acquired it must result from receiving into the body the living germs that have come from some other human being or animal affected with the disease. While the meat and milk of tubercular cattle may be important sources of danger, yet the disease is acquired as a rule through its communication direct from man to man; the usual mode of infection being the breathing of air in which the living germs are suspended in dust. It follows that tuberculosis, being a communicable, that is, a contagious germ disease, is distinctly preventable. The means which are most certain to prevent its spread are those of scrupulous cleanliness regarding the sputum. These means are largely within the control of the affected individual. It should be constantly kept in mind that it is the sputum, and the sputum alone, which is commonly the important agent in its transmission. It is furthermore to be remembered that consumption is not always, or even generally, as was formerly supposed, a fatal disease; but that in a very large proportion of cases, if recognized early, it is a distinctly curable affection. An individual who is well on the road to recovery may, if he does not with the greatest care destroy his sputum, diminish by self-inoculation his chances of recovery.

The recommendations made by Dr. Biggs are as follows:

(1) That there be systematically disseminated among the people by means of circulars, etc., the knowledge that any tubercular person may be a source of actual danger to his associates and his own chances of recovery diminished if the discharges from the lungs are not immediately destroyed or rendered harmless.

(2) That all public institutions, such as asylums, homes, hospitals, dispensaries, etc., be required to transmit to the Board of Health the names and addresses of all persons who are suffering from pulmonary tuberculosis.

(3) That special inspectors be assigned to duty for the investigation of this disease.

(4) That the Board urge upon hospital authorities the importance of separation, so far as possible, in the hospitals of this city, of persons suffering from pulmonary tuberculosis from those affected with other diseases.

(5) That the Department of Charities and Correction of this city be requested to set apart one of the hospitals under its charge, to be known as "The Consumptive Hospital," to be used for the exclusive treatment of this disease.

(6) That the Board undertake the bacteriological examinations of the sputum for diagnosis in every case of pulmonary disease of doubtful character in hospitals or private dwellings or tenement-houses, where the physician in attendance desires that this should be done.

(7) That all physicians practising their profession in this city be requested to notify this Board of all cases of pulmonary tuberculosis coming under their professional care.

In conclusion, Dr. Biggs says: "For the proper performance of the preliminary work, as detailed above, a special corps of medical inspectors and disinfectors should be provided, whose duties should be entirely confined to work connected with the investigation of tuberculosis, and the carrying out of the means to be taken for its prevention. It is my belief that the New York City Board of Health, which has so often achieved such notable success in the management and control of other contagious diseases, should take the lead in this matter, and adopt measures to meet this new and urgent demand upon its resources."

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[1] On Epidemics of Typhoid Fever in the Cities of Lowell and Lawrence, with Observations upon its Existence in Other Cities of the Merrimack Valley, especially in Newburyport, by Prof. W. T. Sedgwick. On an Epidemic of Typhoid Fever in the Village of Chicopee Falls, apparently due to Infected Drinking Water, by G. V. McLauthlin, with a Prefatory Note by Prof. W. T. Sedgwick. On an Epidemic of Typhoid Fever in the City of Springfield, apparently due to Infected Milk, by Prof. W. T. Sedgwick and W. H. Chapin, M.D. On an Epidemic of Typhoid Fever in the City of Somerville, apparently due to Infected Milk, by Prof. W. T. Sedgwick. On Epidemics of Typhoid Fever in the Villages of Bondsville, Provincetown and Millville, apparently due to Secondary Infection, by Prof. W. T. Sedgwick.

[2] Vol. cxxiv, 1891, 397–402, 426–430.

This report was referred to the Sanitary Committee for its consideration.

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MEDICAL NOTES.

A New Medical Prize. — The Alumni Association of the College of Physicians and Surgeons of New York, offers a prize of $500 for the best essay embodying the results of original investigations upon any medical subject. Essays must be sent to the Secretary before April 23d, 1894.

Northwestern Ohio Medical Association. — The forty-seventh semi-annual meeting of the Northwestern Ohio Medical Association, will be held at Toledo, Ohio, December 14th and 15th. The banquet will be given on the second day.

Dr. Truedau's House Burned. — The house and splendidly equipped laboratory of Dr. E. L. Truedau, at his sanitarium at Saranac Lake, New York, were destroyed by fire December 4th, during Dr. Truedau's absence in New York, where he is seriously ill.

Professor Tyndall's Death. — The death of Prof. John Tyndall, which occurred at Hazelmere, England, December 4th, is said to have been hastened by an overdose of chloral.

An Anthropological Prize. — A member of the Anthropological Society of Washington, D. C., has offered two prizes — one of $150 and one of $75 — for the best essays on the subject of "The Elements that go to make up the most Useful Citizen of the United States, regardless of Occupation." The essays, to be of 3,000 words, must be sent to the Secretary of the Society by March 1, 1894.

An Honor to Dr. Jacobi. — The chair of pædiatrics in the University of Berlin, made vacant by the resignation of Professor Henoch, was offered to Dr. Abram Jacobi, of New York, who has declined the honor, preferring to remain an American citizen. This is the first time such a distinction has been offered to an American physician.

An Epidemic of Diphtheria in London. — During the last two months there has been a very large number of cases of diphtheria in London and the death-rate has been unusually high. During the week of November 18th there were 103 fatal cases, chiefly among children under five years.

A Street-Car Ambulance. — An electric ambulance car is to be tried upon the street-car system in St. Louis. The idea was suggested by the City Health Commissioner, Dr. George Homan, and as three of the large hospitals and the city dispensary are situated upon the lines of street railways, a smooth running and rapid means of transportation is expected from the new plan.

The International Medical Congress. — The International Medical Congress which was postponed from September 24th, on account of the prevalence of cholera in Italy, will be held at Rome from March 29 to April 5, 1894.

Cancer in England. — The mortality from cancer is increasing in England. In 1850 there was one death in seventy-four due to cancer; in 1860, one in sixty-two; in 1870, one in fifty-four; in 1880, one in forty; and in 1890, one in 28. There is said to be a similar increase in Scotland, Norway, Holland and Prussia, but a decrease in Ireland.

Twelfth International Medical Congress. — The Russian Government has shown much interest in the meeting place for the Twelfth International Medical Congress in 1896. It desires that Moscow be selected as the city, and promises to donate 50,000 roubles towards the expenses of the Congress.

Immigration and the Quarantine Service. — On this subject President Cleveland says in his annual message to Congress: "The Superintendent of Immigration, through the Secretary of the Treasury, reports that during the last fiscal year there arrived at our ports 440,793 immigrants. Of these, 1,063 were not permitted to land under the limits of the law, and 577 were returned to the country from which they came, by reason of their having become public charges. The total arrivals were 141,034 less than for the previous year. The Secretary in his report gives an account of the operation of the Marine-Hospital Service, and of the good work done under its supervision in preventing the entrance and spread of contagious diseases. The admonitions of the last two years touching our public health and the demonstrated danger of the introduction of contagious diseases from foreign ports, has invested the subject of national quarantine with increased interest. A more general and harmonious system than now exists, acting promptly and constantly operating by preventive means to shield our country from the invasion of disease, and at the same time having due regard to the rights and duties of local agencies, would, I believe, add greatly to the safety of our people." Certainly the work accomplished by the medical inspectors of the Marine-Hospital Service sent to the dangerous ports in Europe this last summer deserves any favorable recognition it may receive.

Abuse of Medical Charity in London. — Much discussion has taken place recently in London regarding the abuse of hospital charity by persons not in need of free medical attendance. The interest in the question has been general, both within and outside the medical profession. Mr. Herbert Spencer says that thirty per cent. of the people of London are frequenters of the hospitals and dispensaries, and that most of them are able to pay their doctors.

"The Frog." — A correspondent of the *Lancet* writes that among the country folk of Lincolnshire, England, there occurs an infantile stomatitis which is rather common and known as "the frog," from the usual treatment, which consists of giving the child a very small frog in a muslin bag to suck.

The First Mohammedan Woman Physician. — The first Mohammedan woman to practise medicine has recently been given a position under the Russian government. Her name is Miss Bibi-Radya-Koudlouiarow.

A Portuguese Physician Convicted. — The trial of Dr. Urbino Defreitas, one of the most prominent physicians of Oporto, for murder has just been finished. He was charged with poisoning his nephew and trying to poison his two nieces in 1890, in order that he might inherit a fortune to which they were heirs. Despite the divergence of expert opinions, Defreitas was found guilty, and was sentenced to eight years solitary confinement.

Surgery and the Demi-monde. — A small company of particularly select demi-mondaines, says the *Progrès Medical*, has just instituted a "Diner des Infécondes," under the honorary presidency of a surgeon noted for the readiness with which he performs ovariotomy. This charming company of patients who have been operated upon meets for dinner each month, the surgeon presiding at the table. The novelty of this form of vicarious menstruation is truly Parisian.

A Medical Tragedy. — An especially sad example of the dangers to which physicians are exposed is reported from Presbourg in Hungary. A physician after visiting a patient with diphtheria went home to change his clothes before continuing his calls. On entering the house his little son rushed up to him and before the father could prevent it, had jumped upon him and kissed his face. Two days later the child was taken ill and soon died of septic diphtheria. The father's reason gave way under the blow, and he died after a short illness attended by acute delirium, in which he constantly cried out, "I have killed my boy."

BOSTON AND NEW ENGLAND.

Toys for the Boston City Hospital. — Owing to the large number of children at the Boston City Hospital, especially in the scarlet fever and diphtheria wards, there is an especial need of toys for the convalescents. Physicians having private patients recovering from these diseases are reminded that the books and toys which otherwise must be destroyed are very welcome at the hospital for use in the wards for infectious diseases.

Foot-ball Accidents. — The young man who dislocated his neck while playing foot-ball at Farmington, Conn., last month, died during the past week. This makes the fourth fatal case of broken neck from foot-ball this season.

A New City Hospital for Fitchburg. — The city council of Fitchburg, Mass., has voted to negotiate a loan of $100,000 for the establishment of a city hospital. Some time ago Mr. G. S. Burbank left his entire property, valued at about $400,000, to the city as residuary legatee for the founding of a free hospital. His widow, however, has been very anxious to see the work underway, and the trustees of the will have obtained consent to anticipate the legacy and borrow money for the purpose. The land purchased by the city is centrally located, covers about 400 acres, and was bought for $70,000. The rest of the money above the $70,000 will be applied to fitting up the buildings now on the estate, so that they can be used for the hospital. The present hospital accommodations of the city are a few rooms at the poor farm, which cannot be isolated from the rest of the house.

NEW YORK.

The New West Side German Dispensary Building. — The new home of the West Side German Clinic and Dispensary on West 42d Street was opened to the public on Thanksgiving Day. The institution was started twenty years ago by Drs. Lampert and Teller, and for the past fourteen years has been located on 38th Street. The cost of the new building, the whole of which is occupied by the Dispensary, has been about $50,000. It is not intended exclusively for Germans, but is open to the deserving poor of all nationalities. Special care is taken by the managers to exclude all those who are able to pay for medical treatment, and during the past year over eight hundred such cases have been turned away. The new building is fitted up with the most approved apparatus and appliances in its various departments, and in its construction throughout, special pains have been taken to prevent the lodgment of disease germs.

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Miscellany.

LONG-CONTINUED RECTAL ALIMENTATION.

A case of successful, long-continued rectal alimentation is reported in the care of Dr. Maragliano,[1] which certainly meets the objection so often raised, that no real nourishment is obtained from rectal feeding. The patient, a woman, had a circumscribed peritonitis from perforated gastric ulcer. For ninety-four days she was kept continuously upon exclusively rectal feeding. In this time the patient lost but 2,700 grammes in weight. The diet consisted of the following enemata:

Lean beef	300 grammes
Pancreas	150 grammes
Mix well, rub up in a mortar, and strain; then add:	
Water, q. s.	
Carbonate of soda	5 grammes
Fresh ox-gall	25 grammes

This suffices for four enemata a day when diluted with a sufficient amount of tepid water.

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CLIMATE OF COLORADO.

Dr. C. Theodore Williams, in an address before the Royal Meteorological Society, summarizes the chief features of the climate of Colorado as follows:

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[1] Le Bulletin Médical, No. 86, 1893.

(1) Diminished barometric pressure, owing to altitude. (2) Great atmospheric dryness, especially in winter and autumn. (3) Clearness of atmosphere and absence of fog or cloud. (4) Abundant sunshine all the year round, but especially in winter and autumn. (5) Marked diathermancy of atmosphere, producing an increase in the difference between the temperature in the sun and in the shade, varying with the elevation in the proportion of one degree for every rise of two hundred and thirty-five feet. (6) Considerable air movement, even in the middle of summer, which promotes evaporation and tempers the solar heat. (7) The presence of a large amount of atmospheric electricity.

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FRAGMENTATIO CORDIS.

According to a report of Oestreich to the Society for Internal Medicine,[1] fragmentation of the heart is much more common than has been supposed, and can be recognized, not only by the microscope, but macroscopically, by a peculiar friability of the muscular substance. If the fragmentation occurs in any part of the heart more than another, it is always in the papillary muscle of the left ventricle. It is not a cadaveric process, but occurs ante-mortem, as shown by experiment upon animals and the examination immediately after death, of the hearts of criminals who had been hung. It may occur alone or with other affections. He considers it an "agony product," a mechanical breaking up of the primary muscular bundles as the result of the final cardiac efforts. Accordingly, it can in no case be considered during life as an actual disease. It was found especially frequent in cases of sudden death and chloroform poisoning. It is more frequent in old persons than in young, and was never seen in children under one year.

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SOURBERBIELLE.

A recent number of the *Gazette des Hôpitaux* contains an interesting account of the French surgeon Sourberbielle, who was one of the best known of the jurymen who tried Marie Antoinette. He came of a medical family which boasted at least twenty physicians or surgeons. His grandmother's three husbands were all doctors, and his four uncles were practising surgeons. After receiving his preliminary training from one of these uncles, he was a pupil of Larrey and became noted for his skill in lithotomy, and was given by legacy all the instruments of Pascal Baseilhac. On the outbreak of the Revolution, Sourberbielle entered with enthusiasm into all the political turmoil. In 1789 he was made a surgeon-major of the organized "Conquerors of the Bastile."

He was on intimate terms, both professionally and personally, with Marat, Danton and Desmoulins. Later he sat in complacent judgment upon Danton, and condemned him to death with the quiet remark, "There are two men who cannot live together, Robespierre and Danton: the former is more useful to the Republic, therefore it is necessary to guillotine Danton, *c'est simple comme bonjour!*"

For Robespierre he had the greatest affection, and was for a long time his trusted adviser and physician. Unmoved by suffering and indifferent to the gentler emotions, as a rule, he never spoke of Robespierre's anguish without a shudder.

On the trial of Marie Antoinette his ardent republicanism caused him to be selected as one of the jurors. At this time, too, his cold, hard character seemed to show a little bit of humanity. He called the attention of the convention to the damp, unhealthy cell where the queen was confined as being worthy their pity. Still he voted for her death.

After the restoration, Sourberbielle was made surgeon-in-chief to the Parisian gendarmerie. He was made master-in-surgery in 1792, but did not receive his doctorate until 1813. During the Terror he was health-officer to the revolutionary prisons, and had charge of the medical service in the École de Mars. Later he was made surgeon-major to the imperial police and in the national guard.

His great renown, at this time almost European, was for his skill as a lithotomist, especially in the method *du haut appareil*. He considered lithotrity a reproach to surgery, and had constantly large classes of physicians studying under him his operation of cutting. His hand was so steady that at the age of eighty-two he still operated successfully, and to the day of his death, at the age of ninety, he took an active and polemic interest in all surgical questions.

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TEMPERATURE IN GENERAL PARALYSIS OF THE INSANE.

The statements so generally made that there is a great daily variation of temperature in general paretics have recently been put to the test of careful experiment by Drs. Peterson and Langdon, of New York.[1] Twenty-five well-marked cases of general paralysis were selected from the Hudson River State Hospital for the Insane, and in each case careful thermometric observations were made every two hours for one week. In ten of the cases additional observations were made, for the same length of time, every two to four hours, with thermometers in both axillæ, in order to determine the question of axillary asymmetry. There were a few instances of marked oscillation of temperature. The greatest single day's change was 3.8° Fahr., but the average was much less. The lowest average daily variation in the twenty-five cases was .8°, the highest 2.2°. The total average for all the cases was 1.4°. "The smallest average axillary asymmetry was .13°, the greatest .34°, but among single observations there were many instances of exact correspondence. The greatest single change in any case was 2.4°. The mean of greatest single differences was 1.17°."

They conclude from their observations that:

"(1) As regards the average bodily temperature, we find it to correspond to physiological normes. The statements of our predecessors as to hyperpyrexic or subnormal averages cannot be sustained.

"(2) The diurnal oscillations of temperature in paretics also correspond to physiological normes. The statements to be found in literature as to extraordinary daily variations being frequent in these cases are absolutely erroneous.

"(3) Asymmetrical axillary differences are so small that they cannot be considered as abnormal, and certainly not of any diagnostic significance.

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[1] Deutsche Med. Woch., No. [illegible], 1893.

[1] Journal of Nervous and Mental Disease, November, 1893.

"(4) When unusual variations of temperature occur in general paretics, their cause must be sought for in conditions not related to the pathological phenomena of paralytic dementia, but depending upon thermogenic features unrecognized by the physician, or 'masked' by the mental state of the patient. Thus, in one case of our series, an increasing hyperpyrexia was noted during the second week's observations, but the pneumonia causing it was 'masked' until the fifth or sixth day, the patient dying on the sixth day. Again in another case where the highest single daily oscillation was 3.4° and the average daily oscillation for the week 2.2°, the patient suffered from bed-sores which undoubtedly produced some septicæmia. That variations of temperature may take place in connection with the paralytic and convulsive seizures of these cases we do not gainsay, but have made no observations under such circumstances."

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LATE EPILEPSY.

THE occurrence of epilepsy for the first time in the middle and late decades of life has generally been considered of rare occurrence; and Wood even goes so far as to say that the disease occurring after the age of thirty-five is always symptomatic and not a true epilepsy. Delanef and Charcot considered that thirty years was the age, after which epilepsy should be called late; and this time has been generally accepted. Mendel, in a paper read this summer before the Congress of German Physicians, takes exceptions to the views hitherto accepted,[1] and claims that late epilepsy is not uncommon, and that so large a number of cases show signs of the disease for the first time after the age of thirty that he does not consider it right to give the name of late epilepsy until a later age. He bases his statement upon his own cases, 904 in number. Kohler, in 1887, collected 1,352 cases of epilepsy, and found that the first manifestation occurred after the age of thirty in 180 cases, or 13.3 per cent. Mendel, in his own cases, all carefully differentiated from the numerous errors of diagnosis, found that 152 cases, or 18.7 per cent. occurred after thirty. The decade from thirty to forty, especially, showed a greater number of cases; Kohler's figures giving 5.8 per cent., and Mendel's 10.9 per cent. of all cases occurring first in that period. After the age of forty there is a marked decrease in the number of cases, and this age he selects as his dividing line. The oldest patient observed was a woman of sixty-three, though cases have been reported of older persons. The greatest care should be taken in young children to eliminate the convulsive seizures of paralysis and idiocy, and in older persons, especially the epileptic attacks of cerebral syphilitic-dementia or general paralysis.

As regards sex, his figures confirmed the observations of Bennett and Gowers, that males are the more frequently affected. In 53 cases occurring after the age of forty, there were 38 men and 15 women.

The question of heredity becomes more difficult to decide the older the patient is, owing to the absence of family or friends. Still, in one-fourth of his cases, Mendel obtained a clear history of inherited disease; and he does not agree with Nothnagel and Seeligmüller, who say that a person inheriting epilepsy who remains free from the disease to the age of twenty will be free in later years. The taint may be entirely latent for sixty years, and then for the first time show itself. The predisposing causes are many, fright being a not uncommon one. In none of his cases "is syphilis given etiological place, for syphilitic epilepsy is to be distinguished from the genuine form, and can be so distinguished clinically, at least, after careful observation."

His conclusions were as follows:

(1) Cases of epilepsy occurring after the age of forty are to be considered as "late."

(2) Late epilepsy occurs absolutely and relatively more often among men than among women.

(3) Hereditary tendency plays an important part even in late epilepsy.

(4) The course of the disease is, as a rule, milder and less progressive than in youth.

(5) The intellect appears to suffer less in late epilepsy, even after long continuance, than in younger patients.

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THERAPEUTIC NOTES.

TREATMENT OF DYSPEPSIA IN CHILDREN. — Tordens, in a discussion of the therapeutics of infantile dyspepsia and the subsequent atonic condition of the bowels, makes four divisions of treatment. (1) Elimination[1] of noxious elements by emesis, lavage (both rarely if ever called for) and catharsis. (2) Anti-fermentative medicines. Among these he includes the various combinations of pepsin, resorcin, salicylic acid. In cases of diarrhœa with markedly green stools he recommends lactic acid in small doses. The following combination he also finds useful:

℞	Creosoti	2-4 drops.	
	Aquæ destil.	35.00 grammes.	
	Syr. Altheæ	15.00 grammes.	M.
Sig.	A small spoonful every two hours.		

(3) Sedatives, warm baths and light friction. For colicky pains a mixture of aqua chamomilla, subnitrate of bismuth and syrup of anise often gives relief. (4) Tonics and stimulants for the subsequent atony, of great value are

℞	Tinct. Cascarillæ	10 drops.	
	Aquæ destil.	50.00 grammes.	
	Syrup	10.00 grammes.	M.
℞	Ext. cort. Chinæ.	0.25 grammes.	
	Aquæ destil.	50.00 grammes.	
	Syr. Aurante.	10.00 grammes.	M.
Sig.	To be given in teaspoonful doses.		

QUININE IN MALARIA. — Sézary recommends the following method of administering quinine, where it is to be given over a continued period of time, as to patients living in a malarial district. It is said to cause no gastric disturbance.

Sulphate of quinine	3 grammes.
White wine	1 litre.

Tartaric acid enough to render the solution acid.

EPISTAXIS.[2] — Several statements having recently been made as to the efficacy of applying ice to the external genitals in cases of epistaxis, Dr. Schrieber, of Moscow, points out[3] that in an old Russian book — published by an anonymous physician in 1827, and bearing the title, "*Rükovodstvo K, Letchenyü Boleznei Prostymi Sredstvami*" ("Hand-book of Treatment of Diseases by Simple Means"), — the application of cold to the external genitals is recommended as the best method for controlling a nasal bleeding. "The patient must immerse his or her genitals in cold water, and keep them therein for a short while."

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[1] Deutsch. Med. Woch., No. 45, 1893.

[1] Le Bulletin Médical, 1893, No. 28.

[2] St. Louis Medical Journal, October.

[3] Novosti Terapii, Nos. 25 and 26, 1893.

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Correspondence.

"HALLUX VALGUS."

Boston, November 30, 1893.

Mr. Editor: — I am much interested in an article bearing the above title, by Dr. Joel E. Goldthwait, which appears in the Journal of this week. The disease in question is one of the most common and one of the most inconvenient which a surgeon is called to treat; and I sincerely trust that the splint which Dr. Goldthwait describes may prove efficacious for its relief. I am, however, free to say that in an experience extending over a large number of cases, I have not succeeded in obtaining complete and permanent relief from the use of any external or mechanical appliance which I have been able to find or invent.

The greater number of the cases which I have seen have been of aggravated and chronic character, and possibly may have passed the stage in which external treatment could afford relief; and most of the patients have later submitted to operation, with the result of relief from the deformity resulting from the abnormal position of the parts composing the joint, and absolute comfort and ease in the perfect use of the foot; with the addition of what was to me a source of some surprise at first, an apparent restoration of the functions of the joint, that is, a freely movable, firm and useful articulation.

The first application in this country, so far as I know, of the operation described by Dr. Goldthwait, was made by Prof. P. H. Hamilton, of New York, who presented a record of eleven cases thus treated. The article appears in the transactions of the Buffalo meeting of the American Medical Association. In this paper Professor Hamilton recommends a subsequent treatment which required two to three weeks for the cure.

In the New York *Medical Record*, July 30, 1880, I published an account of two cases in which an operation somewhat similar to that described by Dr. Goldthwait was performed upon both feet of the same patient with successful results. In all my cases the diseased and distorted head of the bone was entirely removed. Since that time I have had quite a large number of cases of this disease, in one or two of which the inflammation of the soft parts had become so extensive that the skin over the joint had necrosed, and a fistulous opening led from the surface into the cavity of the joint. In this case the entire cavity was filled with granulations, and the recovery materially retarded; but the patient has, nevertheless, in every instance, a useful and mobile joint, from which he has never suffered the slightest inconvenience.

I cannot think that the partial operation described by Dr. Goldthwait would have been either desirable or efficient in any of the cases I have seen. The most marked characteristic of these cases has been the displacement of the head of the first metatarsal bone, with greater or less degrees of distortion in shape, often with arthritic deposits, and sometimes with destructive changes in the joint structures which would not be relieved by the removal of a wedge-shaped portion of the head of the bone. It would seem to me that entire removal of the diseased structures is better surgical practice in this, as in other operative measures. I have never left the wound open, but have closed it with sutures, which in all but one case were removed on the third day, with the result of first intention in healing; and the patient was walking on the fifth day. In no case has there been a recurrence of the bunion, or any indication of trouble in or around the structures of the joint.

Very truly yours,

Albert N. Blodgett, M.D.

STAINING BACTERIA UPON THE SLIDE WITHOUT USING A COVER-GLASS.

Boston, November 19, 1893.

Mr. Editor: — Some of your readers may be interested to know of a method, which I have been using for some time and have found very convenient, of staining bacteria upon the slide without the use of a cover-glass.

By means of a platinum loop a drop of a liquid culture or of the water of condensation from a solid culture is spread upon a clean slide. Or a drop of water may be placed upon the slide first and then spread with a small quantity of the material to be examined. The preparation is held in the fingers and passed three or four times through the flame of a Bunsen burner or alcohol lamp. From a dropping bottle the carbol fuchsin [illegible] is put on the specimen for a minute and washed off in water. After drying, cedar oil is dropped directly upon the preparation which is now ready to be placed under the immersion lens.

The advantages are: Convenience in handling; no need of forceps nor of Canada balsam; the slides clean readily in alcohol. The method is especially adapted to the rapid examination of plates from a mixed infection. When a specimen is found which it is desirable to preserve, the oil can be blotted off and replaced by balsam and a cover-glass.

Respectfully,

Charles Norton Barney.
Harvard Medical School.

RECORD OF MORTALITY

For the Week ending Saturday, November 25, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhoeal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	676	221	16.20	18.45	[illegible]	[illegible]	[illegible]
Chicago	[illegible]	[illegible]	134	14.08	16.94	1.10	—	6.60
Philadelphia	1,115,562							—
Brooklyn	[illegible]	[illegible]	[illegible]	15.40	16.24	[illegible]	—	8.12
St. Louis	[illegible]			—	—	—	—	
Boston	[illegible]	210	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.24
Baltimore	500,000							—
Washington	308,431	[illegible]	[illegible]	16.64	13.52	—	—	7.28
Cincinnati	[illegible]	[illegible]	41	[illegible]	23.49	—	1.62	4.05
Cleveland	[illegible]	91	[illegible]	17.60	17.60	[illegible]	—	3.30
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	[illegible]	89	[illegible]	17.92	14.56	1.12	3.36	8.96
Nashville	[illegible]	[illegible]	12	8.58	[illegible]	2.86		[illegible]
Charleston	[illegible]	[illegible]	11		[illegible]	—	—	—
Portland	40,000	4	2	25.00	50.00	—	25.00	
Worcester	[illegible]	[illegible]	[illegible]	[illegible]	19.25	—	—	22.10
Fall River	[illegible]	[illegible]	1	[illegible]	13.80	5.45		3.45
Lowell	87,191	[illegible]	[illegible]	6.90	10.35			—
Cambridge	77,100	[illegible]	11	23.33	13.33	[illegible]	[illegible]	—
Lynn	[illegible]	[illegible]		13.33	—	—	6.66	—
Springfield	[illegible]	20	[illegible]	10.00	10.00	—	—	—
Lawrence	[illegible]					—		—
New Bedford	[illegible]	23	10	[illegible]	13.05	[illegible]	[illegible]	4.35
Holyoke	41,278	18	[illegible]	5.55	[illegible]	--		5.55
Salem	32,233	14		[illegible]		—	[illegible]	7.14
Brockton	32,140	6	1	—	—	—		—
Haverhill	31,396	10	1	[illegible]	10.00	10.00		—
Chelsea	30,264	[illegible]		37.50				—
Malden	[illegible]	14	[illegible]	7.14	7.14	[illegible]	—	—
[illegible]	[illegible]	—	—	—	—	—	—	—
Fitchburg	27,146	[illegible]	[illegible]		—	—	—	—
[illegible]	26,972	[illegible]		[illegible]	—	[illegible]	—	—
Gloucester	26,688	[illegible]	[illegible]				—	—
Waltham	[illegible]		1	[illegible]				—
Quincy	[illegible]	[illegible]	[illegible]	16.66	16.66			
Pittsfield	[illegible]		[illegible]	60.00			—	
Everett			1		—	—		
Northampton	[illegible]		[illegible]		—	—	—	—
Newburyport	14,073	[illegible]		[illegible]	—	—	[illegible]	—
Amesbury	[illegible]		[illegible]		—	—	—	—

[illegible], acute lung diseases 408, consumption 266, diphtheria and croup [illegible], typhoid fever [illegible], diarrhoeal diseases [illegible], scarlet fever 27, cerebro-spinal meningitis 23, measles 19, whooping-cough 15, malarial fever 7, erysipelas 3, small-pox 3.

From scarlet fever New York and Chicago 6 each, Boston and Cambridge 4 each, Brooklyn 3, Milwaukee 2, Cleveland and Chelsea 1 each. From cerebro-spinal meningitis Brooklyn and Cleveland 4 each, New York and Chicago 3 each, Washington 2, Boston, Worcester, Lowell, Chelsea, Malden, Quincy and Pittsfield 1 each. From measles New York 9, Chicago, Brooklyn and Milwaukee 2 each, Worcester, Fall River, Lowell and Pittsfield 1 each. From whooping-cough Cincinnati 4, New York and Chicago 3 each, Brooklyn 2, Boston, Cleveland and Lynn 1 each. From malarial fever New York 3, Brooklyn 2, Cleveland and Nashville 1 each. From erysipelas New York, Chicago and Brooklyn 1 each. From small-pox New York 2, Chicago 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending November 18th, the death-rate was 24.0. Deaths reported 4,751: acute diseases of the respiratory organs (London) 615, diphtheria 117, whooping-cough 92, measles 85, scarlet fever 77, diarrhœa 62, fever 61, small-pox (Bradford 8, Birmingham 4, Bristol 2, London, West Ham, Leicester, Oldham and Leeds 1 each) 19.

The death-rates ranged from 10.8 in Halifax to 31.4 in Birmingham; Bradford 24.5, Brighton 17.7, Croydon 11.0, Hull 27.2, Leeds 21.2, Leicester 17.2, Liverpool 28.8, London 24.4, Manchester 25.6, Newcastle-on-Tyne 23.0, Nottingham 16.8, Portsmouth 17.1, Sheffield 26.4, Sunderland 20.2.

METEOROLOGICAL RECORD,

For the week ending November 25, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.†
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..19	30.01	37	41	33	73	68	70	W.	N.	6	3	O.	O.	
M..20	30.02	45	58	32	90	73	82	N.W.	N.W.	6	6	N.	F.	.02
T..21	30.14	36	45	28	72	59	64	W.	S.	10	9	C.	O.	
W..22	29.88	40	57	36	99	72	84	E.	S.W.	26	14	R.	C.	.56
T..23	29.74	46	49	42	74	63	68	S.W.	N.W.	10	12	F.	O.	
F..24	29.72	38	42	35	66	49	58	N.W.	W.	12	21	O.	C.	
S..25	30.23	30	35	26	70	42	56	N.W.	W.	14	10	C.	C.	
☞	29.94		44	33			69							.58

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 25, 1893, TO DECEMBER 1, 1893.

FIRST-LIEUT. ALEXANDER N. STARK, assistant surgeon, U. S. A., is relieved from duty at Fort Clark, Texas, and will report in person to the commanding officer, Fort Sam Houston, Texas, for duty at that post.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, December 11, 1893, at 8 o'clock, P. M.

Dr. M. H. Richardson: "Trigeminal Neuralgias Treated by Avulsion of the Second and Third Divisions at their Foramina of Exit from the Skull; with cases." Discussion opened by Dr. G. L. Walton and Dr. S. J. Mixter.

Dr. F. C. Shattuck: "Four Cases of Myxœdema Treated by Thyroid Extract." Discussion opened by Dr. J. J. Putnam.

Members are kindly requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday, December 13th, at 8 o'clock, P. M., by Dr. H. P. Bowditch. Subject, "Anthropometry and the Laws of Growth." Physicians are cordially invited.

APPOINTMENTS.

The following appointments have been made to the Faculty of the Dartmouth Medical School: **TILGHMAN M. BALLIET, M.D.**, Professor of Therapeutics; **GILMAN D. FROST, M.D.**, Professor of Anatomy; **GEORGE A. LELAND, M.D.**, Professor of Laryngology.

RECENT DEATH.

SAMUEL MOORE LOGAN, M.D., M.M.S.S., formerly of East Boston, died at Riverside, Cal., recently, aged sixty-five years.

BOOKS AND PAMPHLETS RECEIVED.

The Medical News' Visiting List, 1894. Philadelphia: Lea Brothers & Co. 1893.

The Nervous Origin of Jaundice. By A. D. Rockwell, M.D., New York. Reprint. 1893.

Essential Details in the Conduct of Labor. By Kate Reynolds Lobingier, A.B., M.D., Denver, Col.

Hospital Bulletin of the Rochester, Minnesota, State Hospital. Volume III, No. 1. November, 1893.

Etude sur les Abces Chroniques Enkystés de l'Amygdale. Par le Dr. Eug. Peyrissac, Paris. Octavo Doin. 1893.

Kentucky School of Medicine in the City of Louisville. Register of Students, 1893. Circular of Information. 1894.

A Theory of Development and Heredity. By Henry B. Orr, Ph.D., Professor at the Tulane University of Louisiana. New York: Macmillan & Co. 1893.

The Physicians Pocket Day-Book. Designed by C. Henri Leonard, M.A., M.D. Issued annually by The Illustrated Medical Journal Co., Detroit, Mich.

A New Method of Direct Fixation of the Fragments in Compound and Ununited Fractures. By Nicholas Senn, M.D., Ph.D., LL.D., of Chicago. Reprint. 1893.

Minor Surgery and Bandaging. By Henry R. Wharton, M.D., Demonstrator of Surgery in the University of Pennsylvania. Philadelphia: Lea Brothers & Co. 1893.

L'Inflammation. Par Maurice Letulle, Professeur agrégi à la Faculté de Médecine de Paris, Médecin de l'Hôpital Saint Antoine. Paris: Georges Masson. 1893.

Defective Conditions of the Vocal Organs Studied, in Connection with Questions of the Oral Method of Training the Deaf; The Tongue. By Harrison Allen, M.D. Reprint. 1892.

Information for Nurses in Home and Hospital. By Martin W. Curran, Graduate of the Mills Training-School, Bellevue Hospital, New York City. Illustrated. New York: J. H. Vail & Co. 1893.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volumes the seventy-fourth and seventy-fifth. London: Longmans, Green & Co. 1891-92.

Asiatic Cholera: Its History, Pathology and Modern Treatment. By A. J. Wall, M.D., Lond., Fellow of the Royal College of Surgeons of England; of the Medical Staff of H. M. Indian Army (Retired List). London: H. K. Lewis. 1893.

Handbook of Public Health and Demography. By Edward F. Willoughby, M.D., Lond., Diploma in State Medicine of the London University and in Public Health of Cambridge University. London and New York: Macmillan & Co. 1893.

New Truths in Ophthalmology as developed by G. C. Savage, M.D., Professor of Ophthalmology in the Medical Departments of the University of Nashville and Vanderbilt University. Thirty-two illustrations. Published by the author. Nashville, Tenn. 1893.

Outlines of Obstetrics; A Syllabus of Lectures delivered at the Long Island College Hospital. By Charles Jewett, A.M., M.D., Professor of Obstetrics and Pediatrics in the College and Obstetrician to the Hospital. Edited by Harold F. Jewett, M.D. Philadelphia: W. B. Saunders. 1894.

Text-Book of Normal Histology; Including an Account of the Tissues and of the Organs. By George A. Piersol, M.D., Professor of Anatomy in the University of Pennsylvania. With 409 illustrations of which 358 are from original drawings by the author. Philadelphia: J. B. Lippincott Co. 1893.

An Outline of the Embryology of the Eye, with illustrations from original pen drawings by the author. By Ward A. Holden, A.M., M.D., Assistant Surgeon, New York Ophthalmic and Aural Institute; Clinical Assistant, Vanderbilt Clinic. The Cartwright Prize Essay for 1893. New York: G. P. Putnam's Sons. 1893.

The Diseases of Childhood (Medical). By H. Bryan Donkin, M.D., Oxon., F.R.C.P., Physician to the Westminster Hospital and to the East London Hospital for Children at Shadwell; Joint-Lecturer on Medicine and Clinical Medicine at Westminster Hospital Medical School. New York: William Wood & Co. 1893.

Manual of Bacteriology for Practitioners and Students, with Especial Reference to Practical Methods. By Dr. S. L. Schenk, Professor Extraordinary in the University of Vienna. Translated from the German (by the author's permission) with an appendix. By W. R. Dawson, B.A., M.D., Univ. Dublin, Late University Travelling Prizeman in Medicine. With four hundred illustrations, partly colored. London and New York: Longmans, Green & Co. 1893.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XXI.

DISEASES OF THE BONES.

These are just the same as the diseases of the soft parts, only they have different names. What is called ulceration in the soft tissues is called caries in the bone; and what is called mortification in the soft tissues is called necrosis in the bone. The names, however, need not confuse us; but the processes which take place in bone as distinguished from the same processes in the soft tissues are very different on account of the difference of the tissue. The bone is immensely hard. All processes which take place in it are proportionately slow; and the process of ulceration, or the process of suppuration, or inflammation in the bone itself, is a matter of weeks or months; whereas the same process would run its course, in the soft parts, in a few days. Singularly enough, bones, which are quite free from sensitiveness, become excessively painful when inflamed; and this is due, probably, to the fact that their interior is subjected to an immense hydraulic pressure on account of the hardness of the bony structures, where inflammatory processes and exudations are taking place; just as the pain of felon or deep whitlow, which is intense as compared with the pain of a superficial abscess, in a lymphatic gland; just as we know that that must be due to the fact that pus is shut down on the bone under the periosteum; so, in the bone itself, inflammatory processes are very painful, as well as very slow.

The first class of affections of the bones which we naturally would take up would be those which affect the periosteum or membrane which nourishes the bone upon the outside. The periosteum is, in its healthy state, a thin and nearly transparent membrane, made up of a delicate web of connective tissue containing vessels, clinging closely to the bone, fitting it snugly in every direction, having to be dissected up to distinguish it from the bone and affording the superficial bone a large part of its nourishment. The Haversian canals and the inner periosteum also nourish the inside of the bone. The simplest and most common affection of the periosteum is called,

SIMPLE ACUTE PERIOSTITIS.

It usually comes on in consequence of a blow, or frequently by great exposure to cold. It has frequently arisen from the patients plunging into freezing water, or standing for a good while in snow, and then walking about briskly and restoring the circulation too rapidly, or approaching a fire, something of that kind. It often occurs over the tibia. I will take that as a site of the disease easy to demonstrate and talk about.

What are the signs of simple acute periostitis? Always swelling, always a tumor, but small, defined, oval, firm, painful. This is due to the pouring out of serum and the white cells of the blood between the periosteum and the bone. Nothing can resist this hydraulic pressure. The bone does not give way, but the membrane over it does, and it rises out in the form of a sac. This sac raises the fascia and muscle over it and the skin, so that we feel the tumor on the surface, which is due to effusion of serum. It does not fluctuate. It is too tight and hard to fluctuate. There is no discoloration of the skin. A painful, non-pulsating and non-fluctuating tumor over the hard bone; that is the peculiarity of acute periostitis.

It arises also from other diseases. It arises very frequently from syphilis. Then it is of a much more subacute or chronic character. The pain is aching and dull. The formation of the tumor is slow. It never reaches the suppurative stage. It forms an outgrowth upon the bone called a node, beneath the periosteal layer.

The treatment of acute simple periostitis is easy and quite sure to effect a cure if it is attended to promptly. The limb must be kept strictly still in the horizontal position; warm fomentations applied over it are often sufficient. If that is not sufficient a cure may be hastened by a blister, or the strong ethereal tincture of iodine, or compound tincture of iodine, applied. In the mild case, often the result of rest and warmth and subsequent blistering is to cause gradually an absorption of the effused fluid; the periosteum settles down upon the bone and the disease is cured. If, however, the disease is seen at a later stage and has gone too far to be relieved by this simple method of treatment, then the best treatment is an incision, which should be made down to the bone until we are sure that the knife scrapes on the bone itself. That is curative at once. Inflammation subsides; the pain goes away; bloody serum and thickened flakes come out through the opening in the periosteum. Possibly suppuration takes place, but not always. If the part is stuffed with antiseptic gauze, probably it will not suppurate. The pain is relieved at once, and the patient gets well. That is simple, acute, circumscribed periostitis.

There is another form called diffused periostitis, which corresponds to diffused cellulitis in the soft tissues, and is distinguished from abscess; and this diffused periostitis is one of the most fatal and rapid complaints that can occur. It either destroys the patient's limb and leads to amputation after spontaneous fracture of the bone, or, more frequently, it leads in feeble persons to death. Diffused suppurative periostitis is exactly like diffused suppurative cellulitis. There is no boundary wall of lymph; no limit of the disease. It strips the periosteum from the bone and forms an immense sac of pus with marked constitutional symptoms.

On account of the very severe constitutional symptoms it produces, the name of typhoid of bone has been given to it. It occurs almost always in children, affects especially the lower part of the femur and upper part of the tibia, and produces intense constitutional symptoms resembling typhoid fever. The child has high temperature and sometimes a slight cutaneous eruption like typhus; becomes rapidly and intensely sick; and swelling and œdema begin about the lower part of the femur, usually above the joint and deep in under the fascia lata, so that it does not make much external showing at any particular point; general œdema, with great pain, and very severe constitutional symptoms.

The progress of the disease, if let alone, is that suppuration forms under the periosteum on the shaft of the femur without any boundary being set up by the pouring out of lymph; strips up the periosteum; bursts through the periosteum; makes a large sac of pus held by the fascia lata; and in consequence of its denuding the shaft of the femur of periosteum, the bone, lying in this mass of pus so long, rapidly becomes carious. Sometimes the disease goes through the bone and affects the medullary cavity, if it goes on long enough. It is very difficult, almost impossible for this abscess to burst; the fascia lata making a secure bag for it. It retains the pus, and you are conscious of a large fluctuating sac. The child sinks into a state of great exhaustion. If the disease goes still further unrelieved, the medulla of the femur having been invaded, the shaft becomes carious and extremely brittle, and in some slight movement breaks; and you have spontaneous fracture of the femur, shown by great pain and by the drawing up of the two ends of the bone. This is an extreme condition and it is usually followed by death. Occasionally, it is said, the disease appears on the upper part of the femur. It does not, as a rule, affect the joints; but the shaft under the periosteum.

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[1] These are verbatim lectures printed from the stenographic reports. [illegible] corrections are made [illegible] but no rhetorical changes. They were delivered to the third and fourth classes as part of the regular course.

This disease is unfortunately often overlooked in its earlier stages when something might be done to control it. It is mistaken for typhoid fever, or rheumatism; and it is not until extensive destruction has taken place that the presence of a fluctuating sac is detected. Then if it is laid open, and the surgeon passes in his finger, he finds the shaft of the femur lying smooth as a stick, without any covering, running through this sac of pus. Amputation in that case is frequently the only means of saving life; the disease of the femur having gone so far that it is incapable of repair. If the disease can be recognized, and is recognized early, no doubt much can be done to relieve it.

The commencement of the disease is down on the bone just as felon is on the finger, but the depth of surface is vastly greater than in the hand.

The true treatment is early and deep incision. This must be made, however, with great caution. The skin and cellular tissue should be cut through; then the fascia lata nicked and pricked, and slit up on a director, and the finger passed in, and perhaps the director, and moved about until pus is reached. When found, free incision should be made, and the cavity washed out. It is better, probably, to make two incisions on opposite sides, put through a drainage-tube, and irrigate constantly through the tube. If this can be done at a very early stage, the femur may be saved, otherwise not.

Almost all the cases I have seen have been hospital cases; and those I have seen in private houses have been just as far advanced as when they are brought to the hospital. All the cases I have seen have been in the advanced stage, where there was a large sac of pus, the femur already denuded, and destruction gone on beyond the chance of doing any good. I have once or twice seen spontaneous fracture, several times amputation, and several times death. The worst amputation is that which has to be done in the feeble person above the middle of the femur; and which is very liable to be fatal, on account of the severity of the operation, the location of it, and the weakness of the patient. Sometimes there is no other resort to try.

This disease is not very much insisted on in text-books, but, as it is the cause of loss of limb and life, I have dwelt a little more upon it; and you will find in the poorer population of all cities, among feeble children, these conditions come on not very rarely.

Exposure to cold and blows, going in bathing in improper seasons of the year, being wet and going about in wet clothing, blows about the tibia and femur in the feeble child ill-nourished, will bring on this condition, or some other form of suppuration of bone. Sometimes it brings on abscess in the bone itself, of which we will speak presently.

CARIES

Is an ulceration of the bone; a disintegration and breaking down; washing out of lime salts; changing of cancellous tissue into either a tubercular cheesy mass, or fat; and the formation of a soft vascular mass, which rapidly loses its firmness, and remains as a soft substance inside the cancellous tissue of the bone. As you might suppose from that description caries almost always occurs near the epiphyses, rarely in the shafts. It is about the joints that you see almost all the cases of caries. Caries is not confined to any age, but it is more frequent in the young; and necrosis, I think, is more common in the adult than in the child.

There seems to be no reparative effort in caries. It is an ulcerative process, and goes on very slowly and insidiously; not very painful; no very acute symptoms; and destroys large surfaces on the inside of the bone, and finally gives rise to an abscess, in many cases with a sinus leading down into the cavity. Through this, after a long while, the patient may succeed in throwing out the pus and all the broken-down cancellous tissue; and in some cases the disease will heal up spontaneously under constitutional treatment and without surgical interference; but, if it is recognized, it unquestionably does better with surgical interference; and in some cases, if it can be attacked early, it seems as if it could be almost aborted; that is, you have the symptoms, for instance, of a slight amount of swelling and œdema; a tender spot on the foot: lameness in walking; perhaps a little hectic at night; occasional occurrence of sweats; if the symptoms persist a good while and the surgeon makes a prompt incision down upon the bone, he finds usually the periosteum thickened and somewhat separated from the bone. He finds, to his surprise, when he presses upon the bone that it is a shell; it lets a blunt instrument push into it; break through this little outer shell and you find a carious cavity, which was originally the cancellous tissue of the bone. It has all been thinned out and absorbed, so that it is semi-fluid; and there is nothing but a shell of bone surrounded by periosteum. In this condition of things, if the cavity is carefully curetted and drained, and packed and washed out, frequently a good result ensues.

NECROSIS.

Caries is somewhat different from necrosis in this respect, that you may scoop out all the carious cavity down to a point where it seems that nothing more can be scooped out without violence, and may have that promptly followed by repair. Such is not the case with necrosis. If you attack necrosis and attempt to cut it away, before nature has separated it and marked the line of demarcation between living and dead bone, you do not succeed in establishing repair; but the necrotic process goes on, until the limit is set by nature, and the piece can be removed. This loose piece is sometimes called a sequestrum; and it is only after it is thoroughly detached that it can be removed with any great advantage. It may be hastened to a certain degree by cutting through the shell of bone that surrounds it, and giving it free exit; but it is hardly useful to attempt to tear it away before it has become loosened itself, because you cannot end the disease until nature has stopped the necrosing process.

Necrosis is like gangrene or mortification of the soft parts. Some portion of the vessels of the bone become obstructed; the Haversian canals become shut up with inflammatory exudation or coagula; the nutrition is cut off from quite a piece of bone, and it dies; and then nature makes the effort to separate it from the living tissue by an active process of exudation, inflammation and suppuration around it. This gives rise to abscess. Then the abscess drills a hole through the bone; then comes up to the surface under the fascia, and finally makes a small outlet, and leaves one of those little red pouting sinuses. You pass the probe, and come down upon a little hole, of which you are conscious in the bone, about large enough to admit a shot; and then you strike inside a bare portion, which may or may not be loose, according to the length of time the disease has existed. Meanwhile, nature surrounds this bad piece with a strong circle of vessels, and active inflammatory processes, which finally slough it off and let it lie loose in the cavity. Now comes in a very extraordinary process of nature to prevent fracture of the limb while this destruction takes place. Suppose the necrosis takes place in the tibia. While the dead bone is being separated and got ready to be thrown off, new bone is thrown out all around to strengthen the diseased shaft; and an involucrum, or shell, is formed around the diseased piece; and the bone enlarges, and is very much broader than the tibia of the other side. In the midst of this enlargement you find the sinus which leads down directly through the bone to the sequestrum. The formation of new bone is a very important provision on the part of nature to prevent fracture of the limb while separation of a dead piece of the shaft takes place. But at the same time this change defeats, so to speak, the other object of nature, which is to cast off the dead piece, because it encloses it firmer and firmer in the shell. The result is that a sequestrum, *per se*, is never discharged from the living tissues. It is held in sometimes for years; and it rattles about, so to speak, inside the tibia in this cavity, surrounded by new bone: never healing; always keeping up a slight discharge; but never having an opportunity to escape.

There is not much pain in this process. It is a slow process. I have seen sequestra in the tibiæ of patients who have gone about, and the duration of the disease reach forty years without any operation; without much impairment of health, and without a great deal of pain. But the disease does not get well until the surgeon interferes. So then, when we have found this sinus, the true practice is to cut down and chisel away and trephine away a large portion of this shell of new bone, to open up the cavity in which the sequestrum lies. If it is loose we take it out; and if not, we wait for it. If we take it out, it promptly heals, and becomes a strong serviceable limb.

These are the marked differences between caries and necrosis. Caries is essentially destructive throughout. It is an ulceration. It occurs frequently in youth; almost always about the epiphysis. It is slow, insidious, but it does not get well, as a rule, without operative interference; and if the cavities are scraped out, it usually gets well. Necrosis, on the other hand, is a disease of strong adults, frequently. The diseased piece can never escape. It is incurable except by operation; and the operation usually is curative. Sometimes, however, it unfortunately happens, that the bone is so thoroughly diseased, that the same process is repeated in different portions of the shaft, over and over again; and occasionally you see the tibia so riddled with sinuses, and so deformed by the growth of new bone, that it is practically useless; and in such a case amputation is the best treatment for the patient.

ABSCESS OF BONE.

There is a form of suppuration in the bone which is called abscess of bone. The peculiarity of this seems to be that it is essentially a pus formation, without caries or necrosis, taking place somewhere in the medullary tissue of the bone. It generally occurs somewhat near the joints; but may be in the shafts of the long bones. Unlike the other affections of which we have spoken, it is intensely painful. The agony is great and lasting. The patient loses sleep, emaciates, has unbearable pain all the time, and there is no apparent cause for it; he will point out the location of the pain, but you cannot see any change on the outside. You may, perhaps, by taking the finger and rapping about on the bone, come upon a point where he winces every time, and says it is exquisitely painful; and you may find a slight degree of œdema. There is not much swelling, but constant acute pain, which must be distinguished from neuralgic pains, which latter may last months or years. This pain is due to the formation of a small amount of pus; rarely more than a drachm, in the bone; shut in; trying to bore its way out. It is, I suppose, comparable to the pain of felon in the hand. If this disease is recognized, a cure is quite easy and certain. Cut down upon the bone and trephine the shaft and open the medullary cavity and give exit to the pus, if it is found. If it is found, I say, because sometimes after trephining you are disappointed that you do not strike directly upon pus, and have been deceived perhaps to the extent of one-half to one inch in the location of the pain. It is not exact, and you have not hit the exact spot. In this case by taking a gimlet, or something of that kind, and boring up and down in the medullary cavity, you almost invariably strike the pus; and you are surprised to see how little there is, and you are also surprised to see how absolute the relief is; and how promptly this cavity will granulate and heal up. These, if they can be recognized and treated, are an extremely satisfactory class of cases. Unfortunately, like the cases of acute diffuse periostitis, they frequently are not diagnosticated until they have produced destructive effects in the bone itself.

OSTEOMYELITIS.

There is a disease of the marrow of the bone which is like a diffused periostitis; that is to say, it is a diffused inflammation of the cavity of the bone and that membrane, which lines the inside of the bone, sometimes called an endosteum. It is not a distinct membrane, but made up of cellular tissues and fat cells, whose vessels nourish the inside of the bone. This disease, as you might suppose, shut away inside the cavity of the bone, is usually the result of traumatic causes; either a compound fracture, or an amputation. Those are usually the causes of this disease which is named osteomyelitis, or an inflammation of the marrow of the bone. After amputations it is not infrequent. After compound fractures it occurs occasionally, and is frequently fatal. After amputations it is not fatal, as a rule. But after compound fractures it frequently is. The reason of that is this, that after the amputation you have the end of the bone exposed; the bone sawed off; the medullary cavity open; and if the disease comes on there and osteomyelitis takes place in the stump, the stump does not close, never heals, keeps up a pouting, discharging sinus communicating with the medullary cavity. This is a safe exit, so to speak, for the suppuration which is taking place; and prevents, probably, the absorption of this material higher up into the system; so that, as a rule, the person with osteomyelitis after an amputation recovers. But if you have a compound fracture, and the bone is broken into the medulla, the cavity is pretty much covered over. If this acute inflammatory process begins it has no exit, and travels up the shaft, and rapidly gives rise to intense symptoms, and frequently terminates in septic infection, in septicæmia; and occasionally in that process called embolism of fat; and in the carrying up of other septic materials into the system; so that osteomyelitis after compound fracture is generally accompanied with intense constitutional symptoms, and terminates often in a fatal septicæmia.

In a case of osteomyelitis after an amputation, the stump does not heal. The patient goes about without much pain. Exploration of the end of the bone shows that a piece of the central portion has separated; that a cast, so to speak, of the inside of the bone has formed; and, after a while, cutting down upon it and scraping back the tissues, you can seize this cast of the interior of the bone and draw it out; this is a true sequestrum of the inside of the bone. If it can be extracted entire, this is speedily followed by healing and cure.

SCLEROSIS.

In consequence of a very slow infiltration into the Haversian canals and connecting cavities of the bone which nourish it, the bone salts get deposited in excess, sometimes, and the bone thickens and hardens without any acute suppurative process; grows thicker and harder and heavier; and what was originally perhaps, a shaft of bone, becomes increased to twice the usual thickness; and this process is called sclerosis, or hardening. Such a bone becomes very heavy and large. The disease is slow and it is not productive of very acute symptoms, except dull pains.

It is sometimes the result of poisons; occasionally the result of syphilis; and it is apparently, as far as I can see, irremediable, and sometimes leads to amputation. If it is directly the result of syphilis, it is more likely to show itself upon the surface of the shaft, in the form of hard, bony nodes which grow beneath the periosteum. These can be benefited often by blistering the skin; and frequently by the taking of large quantities of specific medicines, which affect the system in the tertiary stages of syphilis; but in the other process in which the bone grows hard slowly without syphilitic infection, the bone sometimes remains in that condition for years, without producing any great trouble except its weight and dull pain.

ABSORPTION — POROSIS.

On the other hand, there is occasionally a condition of bones in which they absorb and grow thinner and thinner; absorption of the shell takes place; and the bone becomes exceedingly brittle and weak. Those are the rare cases in which what is called spontaneous fracture takes place, without the history of any injury, or any force that was sufficient to break the bone. Instances have occurred in which the patient, in this feeble condition of bone, is lifting only a book from the table, and drops it, and finds that the humerus is broken. This is absorption, porosis.

Unfortunately we do not know its cause; and do not know how to relieve it.

It must put us on our guard always with regard to prognosis in all troubles about the bones, and especially in the subsequent use and strength of fractured bones, because, occasionally, in spite of the best care, atrophy, or wasting, or porosis of the bones does occur after the injury; and the fracture, although it joins, does not become strong. The arm shrinks and dwindles and breaks, or becomes practically useless. It should be distinctly understood that this process is beyond our control; that we can in nowise be held responsible for it. We should be on our guard as to giving too favorable a prognosis.

ATROPHY.

Atrophy sometimes takes place, by which the bone wastes away until, in some cases, the humerus has become shortened an inch or two in consequence of this process, and the elbow has approached the shoulder. A very small bone is felt between, which is feeble and brittle, and the bone atrophies in its entire length with shrinking. This is quite rare, but occasionally takes place.

HYPERTROPHY.

The opposite change, or hypertrophy, or bony outgrowths, which are distinct from sclerosis, occasionally occur and make great deformities; sometimes come on the collar bone making large bunches. We suspect that they are syphilitic, but they do not always yield to syphilitic remedies. They form on the face, on the superior maxillary bones, and give rise to that sort of face sometimes called leontiasis; here bony outgrowths take place, push the nose back, and growing out beyond the nose, push the eyes up out of the orbit.

These are true exostoses or bony growths from the bone itself; and when operated on and cut away are found to consist of pure bone.

The only treatment is to cut and trephine and chisel them away, in the hopes that when the flesh has healed over it the growth will not recur. Occasionally, these growths form in a curious way on the forehead, in the front wall of the frontal sinus; and the inner part of the growth lies in the inner part of the frontal sinus. After cutting through the skin and stretching it back, we find we can lift the bone out of its bed in the frontal sinus, and a cure will then speedily ensue. But this seems to be a somewhat different sort of growth from those which grow with large bases from the superior maxillary bones.

In certain classes of the chronic insane, in chronic dementia, there seems to be a change in the bones with regard to the phosphates, and the bones become weak. It is probably true that a good many cases of fractures of the ribs, which occur among the insane in asylums, are due to very slight force, like spontaneous fractures anywhere; and while they may be ascribed to brutality or carelessness on the part of attendants, I am inclined to think this is often not the case; and that they are in that condition that they will break almost spontaneously on account of the feeble state of the system. This occurs occasionally among those in perfect mental health. I have once or twice seen myself fracture of the rib caused by coughing in an otherwise reasonably healthy individual; in a person somewhat obese and of about sixty years of age. In this case, after a violent attack of bronchitis and repeated coughing, the rib gave way after an expulsive effort. This should prove to us that in so thin and slight a bone as the rib it may become porous, and give way without any positive severe violence.

OSTEOMALACIA.

A very curious condition is osteomalacia, in which spontaneous fracture takes place over and over again. In these cases the patients frequently live to grow up, and the limbs are deformed with innumerable fractures. In such cases among children the slipping down off the chair on the floor will cause the leg to give way; and these breaks, fortunately for the individual, heal promptly, and then give way in another place the next time. This is a little different from the condition known as rickets or rachitis; because that is a condition of the bones in which they bend rather than break. In true rickets, the proportion of earthy salts and organic matter, as existing in the healthy bone, is reversed. The result is cartilaginous, weak, flexible bones, with rather enlarged joints. The spine bends; the breast bone bends; the head sinks between the shoulders; the legs curve out in all directions. Frequently the tibæ curve forward so that they are arched; and various other deformities occur.

In this condition, considerable can be accomplished by apparatus to keep the child's limbs straight; and by building up the child's strength with proper treatment, such as iron and cod liver oil, tonics, nutritious food and open air.

Bones break sometimes, apparently, spontaneously, but really as a result of tumors which are forming in them insidiously. This is especially true of cancer, or osteosarcoma of the femur, tibia or other bones. These occasionally give rise to what appears to be at first spontaneous fracture; and the force which breaks the bone is generally very slight — turning over in bed has broken a femur in the middle of the shaft in a case of unsuspected cancer, or osteosarcoma.

This form of malignant disease generally begins in the medullary cavity, grows and extends, rapidly absorbs and pushes out and thins the shaft or shell of the bone until it becomes so brittle that it gives way; and the cause is wholly, in these cases, malignant disease; so that in elderly people a case of spontaneous fracture, or fracture from insufficient cause, of the shaft of the bone should give rise to a great deal of suspicion as to what made it, and whether it is not probably due to commencing malignant disease of the bone itself. In the shaft, I say, because it is well known that old people break the neck of the thigh bone and neck of the humerus from absorption of the bone, without any form of malignant disease.

Various tumors grow in bones, some of an erectile nature, which pulsate and are mistaken for aneurisms. They form in the medulla, rapidly accumulate a mass of enlarged vessels, throb and beat, absorb the bone just as an aneurism does, push out in a fungus pulsating mass, weaken the limb, and are recognized as a soft pulsating swelling about the femur or tibia, but are truly vascular tumors in the bone itself.

Myeloid disease also deceives us often in regard to the condition of the bone. It is true that myeloid disease rarely occurs in very young subjects; but its favorite site is the head of the tibia, and it forms very slowly; expands the head of the tibia; weakens the limb; gives rise to pain; generally to febrile symptoms; and is difficult to diagnosticate, at first, from caries occurring in the head of the tibia. Caries in the head of the tibia in young subjects is common; myeloid in the head of the tibia in adult subjects is not very uncommon. They frequently are mistaken one for the other. An incision, which seeks to relieve the caries and scoop it out, and falls upon myeloid disease, soon shows us what the mistake is; and in that case amputation is the only resort, and has to be done above the joint. The disease is incurable, malignant. Amputation should be done early to save the patient.

Now, it is necessary to know this sort of thing because it must give us great caution in operating, and in bearing in mind that we cannot tell exactly what we have got to expect when we operate on deep tissues; and that the alternatives must be ready in our mind; and that we must be prepared, and perhaps have prepared the patient, by saying, that we will endeavor to remove the disease; but that we must do what is necessary in order to save life; and if we find any incurable trouble, we may have to amputate.

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Original Articles.

MEDICAL TEACHING IN GERMANY.[1]

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Americans who are likely to consider the subject of medical study in Europe, fall into three classes:

First, the small number of those who, either having received their general education abroad, or having been impressed with the excellence of European medical teaching, decide to take their entire course of medical study and their degree at some European university. I cannot but look upon this as an error for those who intend to practise in our country, for such men find themselves on entering upon their professional career at home at a disadvantage in the following ways: — Their therapeutic armamentarium is rather different from that to which American patients are accustomed, and though they can, of course, readily enough learn the differences between the European and the United States pharmacopœias, yet they are likely to find that a good deal of the sort of medication which is swallowed with avidity or at least with resignation by the hospital patients of Berlin or Vienna, will meet with decided opposition from the self-respecting American stomach. Again, the man who has received his entire medical education abroad knows nothing of these professional traditions and usages to which patients here expect conformity, and which alone can make one's relations with his fellow practitioners endurable. Finally, a lack of personal acquaintance with any of one's professional neighbors or with any of the older or more prominent physicians of the city or State where one is to settle, must be counted as a great disadvantage.

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[1] Read at the meeting of the Suffolk District Medical Society, October 28, 1893.

The second and numerically the largest class of persons contemplating foreign medical study is composed of men who have taken their medical course and degree at home, but who wish further preparation for practice, and are considering whether they can best secure such practical experience as they desire, at home or abroad. Yet it must be freely admitted that if these young men can afford but one year in addition to their required curriculum, a resident house-officership in a good general hospital offers advantages superior to any they can find under other circumstances in any country.

Third, comes a class which I hope and believe is destined to become an increasing one, of men who having already become established in practice, feel a need of temporarily interrupting their work by further study with a view either to specialization, to consultation practice, or to such a picking up of lost threads, such a broadening of the professional horizon, as Harvard offers to her professors in the "Sabbatic year," but which we medical practitioners, while we need it quite as much as any other class of professional men, find it harder to get. If it is not possible to obtain it every seventh year, yet at a longer interval or for a shorter period, it is not, as I have reason to believe, impracticable. The practitioner who, with any of the motives I have just sketched, wishes to change temporarily his horizon, and to "go to school" again, will generally, if possible, cross the water to get what he wants, despite the excellent polyclinic and post-graduate advantages that our large cities now offer.

In a paper like the present, it is manifestly impossible to attempt to cover the whole field of foreign medical teaching, and I shall, therefore, in what I have to say to-night limit myself to a consideration of Germany, and especially Berlin.

Medical study in Germany differs from that in England and in our own country, in that it is always pursued at a university, where it shares in the broadening influence produced by the bringing together of various departments of learning about one common centre. There are about twenty of these universities, the largest being those of Berlin and Munich. As the capital of the chief German State, Berlin stands easily the intellectual centre of Germany and probably of the world. Her university, though less than a century old, comprises nearly seven thousand persons and numbers among its professors some of the brightest lights in the firmament of science and letters.

The German student of medicine passes to his professional studies either from the gymnasium, where he is supposed to have spent nine years in liberal studies, consisting chiefly of classics and mathematics; or he may come to medicine from the Réal School, where modern languages and science replace the classical training of the gymnasia. The gymnasium, however, is held by the best medical men, and by the government also, if we may judge from the distribution of official patronage, as the only adequate preparation for professional study, the Réal School being considered as an educational concession to the popular element. As the gymnasium takes boys at an average age of about nine, they are ready at eighteen or at nineteen (adding the year for compulsory military service) to begin their medical studies, unless they choose, as a few do, to take some semesters with the philosophical faculty of the university before passing on to the medical. Unless they do this, their basis of general culture is less than that of our best medical students, for the gymnasium cannot be held as at all equal to our best American colleges. On the other hand the Germans gain two or three years in time over our college and medical students.

The required medical course occupies eight semesters, (four years). At the end of the second year comes the first examination, the *tentamen physicum*, which covers chemistry, organic and inorganic, mineralogy, physics, botany, anatomy, physiology, zoology, embryology and histology. Near the end of the course occurs the examination on the other usual subjects of medicine, for the doctorate, or medical degree, in case the student chooses to apply for it. But as it is in many cases held to be a useless luxury, being rather expensive and quite unnecessary for medical practice, the student often reserves his money and energy for the State examination, which is essential to engaging in medical practice, which is a severe examination, conducted by government officials, and which makes of every successful candidate in a certain sense an officer of the government and invests him with corresponding authority and responsibility.[2]

I do not believe that the average German medical student is as well equipped as the average graduate of our best schools, that is, those having a four years' course. For, in the first place, the time of actual study is not so long. The winter semester nominally lasts from October 15th to March 15th, and the summer semester from the middle of April till the middle of August. Here are apparently nine months of term time. But no pretence is made of beginning work before November 1st or of continuing it after March 1st. In fact, the "vacation courses" begin March 1st, two weeks before the close of the regular term for which the students have paid. The same amputations are applied at both ends of the summer semester, and when to these lengthened vacations we come to add a two weeks' holiday at Christmas, and the first, second and third days' celebration of the various religious and secular festivals, there is probably not left more than seven months net out of the twelve for work.

Again, our academic "hour" for teaching purposes is fifty-five minutes. In Germany, the first fifteen minutes are always thrown off and the remaining forty-five minutes are, according to my observation, often considerably further reduced. So that the German lecture or clinic averages from twenty to twenty-five per cent. shorter than our own.

As to the instruction, it is generally admirable. The examination is thorough, the diagnosis shrewd, the literature discussed voluminous, recent and widely drawn. But despite, or perhaps because of the excellence of the elucidation, the average student gets probably less advantage from it all than he would from trying to unravel a few obscure cases for himself. To be sure, he serves his time as *praktikant*, when he makes more or less for a "snap" diagnosis. But he rarely works up a case in careful detail. His point of view is not so much the bed-side as the lecture benches, for, at least in Berlin, he rarely gets into the hospital wards. He does not read very much, and evidently sets great store for his examinations upon the careful pen-and-ink notes which he has kept of all the cases he has ever seen. In a word, he is made the subject of a constant intellectual *garage*, in which, if you will allow the figure, the pabulum is of the best quality, and is fed to him with an unsparing hand; but it is so thoroughly predigested that very little work is left for his own intellectual powers to do, and they are likely to develop less activity than might otherwise be gained.

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[2] I have heard it said by some Americans that they found the diploma examinations in Germany remarkably easy. It may be that the examiners lightened the burden a little for foreigners who lacked perfect facility with the language, and who, moreover, were not going to practise in the country. At all events I notice that for the years 1889-90, while in the entire twenty German universities 1,115 candidates received diplomas, there were at the same time 1,030 rejected. (New York Medical Record, 1891, vol. xl, p. 556.)

Conditions like the foregoing, which are not specially favorable for the student who is learning to make diagnoses, are, on the other hand, of advantage to the practitioner. From the latter point of view, the abundance of clinical material is very useful. Not only is the material very great in every European city where a large portion of the population is so poor that it must receive medical aid in sickness, but it is exceedingly available. Patients are always willing to be shown, being generally treated with fair consideration, and even when the visitor notices something lacking in this regard, it must be confessed that the patients themselves do not generally appear to be aware of the omission. Post-mortem examinations are, of course, made in all fatal cases, and hence clinical study is never subjected, as must often happen in America, to the incompleteness due to lack of pathological evidence.

The chief clinical teachers can, when they wish to illustrate any particular point, bring forward an immense amount of material. For instance, Mendel is said to have shown at one demonstration of epilepsy thirty-five patients in an hour. Certain of the medical *causes célèbres* make a living by going about from clinic to clinic, the fact that they are already under treatment with one clinical teacher making no difference in their acceptability to another. Special attractions are sometimes even sent for and fetched in a carriage like our coy voters on election day.

To work up properly such immense amounts of material involves tireless industry, and perhaps this is the most striking characteristic of the great medical teachers of Germany. The *breadth* of knowledge of such a man as Senator is something almost incomprehensible. If it be true, as has been said, that Vienna stands for specialism in medical training, it is also true that Berlin stands for breadth of medical learning. Senator's work covers not only the usual field of clinical medicine, but nervous diseases equally well, while at his polyclinic one of his most popular exercises is in connection with the diseases of children. Of course, much of the work, bacteriological, microscopical and clinical, is prepared by his assistants, but one feels that it is all done under his personal orders and supervision, while his incessant stream of publications indicates over what a long frontier of medical science he is pushing forward his explorations.

Senator's clinic at the Charité is called the Third Medical; the first is headed by Leyden, and the second by Gerhardt. These work on simultaneously, but at different hours (Gerhardt, by the way, at eight in the morning), and between them divide all that is of medical importance in the 1,800 beds of that hospital. Henoch, stricken with years, but unstricken with any other infirmity, watches over the children's wards and the children's polyclinic. Jolly, dean of the medical faculty, lectures on neurology and psychiatry. His clinic of mental diseases, occupying some 150 beds in the new Charité, was one of the best of its kind in Europe, having been founded by Griesinger, who was the first, I think, to introduce the non-restraint method in the treatment of the insane. Westphal, who succeeded Griesinger and preceded Jolly, is said to have carried on the department for four years, and perhaps more, without ever once applying a strait-jacket to a patient.

Resisting the temptation to specify individual teachers like Bardeleben in surgery, Liebreich in materia medica, Du Bois Reymond in physiology, Bergmann, the surgeon who tracheotomized the Emperor Frederick and impaled Morell Mackenzie, now in charge of the surgical university clinic, and Olshausen, at the head of the great Frauenklinik near by, I must, nevertheless, give a word to Virchow, whose work in pathology was for years the crowning medical attraction of Berlin. He is now rector of the university, and as such gives the right hand of fellowship and the appropriate moral advice to every matriculant. The cares of administration, political activity (albeit his party has just been signally defeated), paleontological research, these and other interests, still leave him at the age of seventy-two able to give, according to the last official programme, eighteen hours per week of instruction in pathology.[2]

The subjects best taught in Berlin are probably internal medicine, which I have just referred to, nervous diseases and bacteriology. The neurologists are doing a great deal of work on the anatomy of the nervous system. Where else in the world would we find going on simultaneously three elaborate courses on the anatomy of the brain? Here they are, by Waldeyer, Mendel and Siemerling. They are most admirably illustrated by fresh and hardened preparations, and especially in the case of Siemerling, by a series of stained sections of great beauty illustrating every possible level in brain or cord, and capable of demonstration by lantern and screen to a large number at once. Similar work is being done in some other laboratories, notably Mendel's and Oppenheim's, in which, in diffuse affections of the nervous system and in ascending or descending degenerations, practically the whole brain and cord of the patient is reduced to an enormous series of sections illustrating the condition at every possible plane.

In the youngest of the medical sciences, bacteriology, Berlin occupies, as is well known, a leading position.

To illustrate at once what is being done in this branch, and at the same time to serve as an example of the thoroughness with which the Germans organize and carry on scientific investigation, let us briefly describe one of the newest medical institutions of Berlin, one so new that many of my hearers who are familiar with that city have never seen it. This is the Institution for Infectious Diseases, which may be regarded as the first fruits, and perhaps thus far the most useful outcome of Koch's tuberculin discovery. In the enthusiasm which followed the announcement of tuberculin, the government promptly voted the sum necessary to carry out the enterprise, and the institution was opened in August, 1891, with Koch as director, and a large staff of skilled assistants, among them Pfeiffer, Behring and Brieger.

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[2] [illegible]

The Institution is situated just west of the Charité Hospital, and covers a tract of land about 650 by 200 feet in dimensions. It comprises seven wards or barracks of most approved hygienic construction, having all necessary kitchen and service rooms, baths, closets, etc., a general ward, isolating rooms, and a sun-room or sitting-room for patients who are able to be up. These provide for men, women and children suffering not only from such contagious diseases as diphtheria, but from tuberculosis in all its forms, including joint affections and lupus. One building has even been utilized for variola, while others contain puerperal fever, and even influenza-pneumonia. Rather too heterogeneous a mixture of infections, we may say, for the good of the patients treated; but a tolerably good isolation is practised, and the grouping of so many infections directly about the centre of bacteriological research gives obvious advantages for study. In the administration building is a small amphitheatre for lectures, having, among other equipments, a stereopticon and white screen for the display of microphotographs.

Behind this building stands another, which serves two important purposes: first, that of disinfection. The articles (clothing of patients and bedding from the wards) go through a regular order of rooms into and out of the steam disinfection-apparatus, and the disinfector himself is subjected to a bath and change of clothes between the time he loads and unloads the apparatus. Under the same roof, but securely separated, is the autopsy room, where the director personally assigns to various members of his staff the work, bacteriological, chemical and microscopical, which the case demands.

For the carrying out of these researches, an old three-cornered building opposite the hospital department has been fitted up. This, the "scientific department" of the Institution, is a remarkable series of laboratories. Here are brooding-rooms, kept by automatic regulators at an even temperature of 99.5° F. Here are stalls for keeping the animals that are made the basis of experimental investigation, not only the guinea-pigs and rabbits (which since the days of bacteriology have borne away from the long-suffering frog the palm of physiological martyrdom), but also dogs, cats, doves and an occasional monkey. The animals which are already infected are kept in quarters by themselves, and, when they have finally fulfilled their mission, their bodies, together with the micro-organisms they have entertained, are annihilated by cremation in a furnace built for the purpose.

Here are rooms for microphotography, equipped with heliostats to hold the elusive Berlin sunshine and the strongest artificial lights for hours when there is no sun. Dark rooms for the development of these plates, as well as for the macrophotographs which are taken in the adjoining rooms, and by which the clinical pictures of disease, as, for example, lupus, can be perpetuated. A library and reading-room are filled with the latest publications of other workers in the same field. Finally, we notice in one of the narrow entries a door leading to the quarters where all this multifarious work is directed, with a small plate bearing the modest inscription, "R. KOCH."

The educational value of this institution is, of course, greatest to the regular staff of workers, including those under-physicians who are detailed to this duty from the Charité. But their work is, through publication, made the property of the scientific world, while men are always going out from it as did the clever Japanese, Kitisato, to extend the work in other lands.

For the average student who goes to Berlin to study bacteriology, the Hygienic Institute is a more available place for personal practice in bacteriological work. In this building is maintained the sanitary watch and ward over the city. Regularly every two weeks are brought hither specimens of drinking-water from each of the eleven different stations which supply Berlin. These specimens are tested both chemically and bacteriologically, and if the filters (also devised in this institution) are found not to be doing their work, immediate attention is given to the matter. Here are good opportunities for practical study under the instruction of Rubner and Günther.

Courses for beginners are organized several times in a year, each course occupying all the time; that is, eight hours daily, for a month. The work is so systematized that no time is wasted. Each man makes his nutrient media, plants and dilutes his cultures, stains and examines his growths, and in general gets a *coup d'œil* at the subject, which, of course, is superficial, but which is of great service, at least in enabling one to judge of what the special workers in this department are doing. Other more advanced instruction, of course, is also given here.

In closing, I have only a few practical suggestions to make to any contemplating medical study in Germany. In the smaller universities you will probably spend less money, learn more German, see fewer cases medically, and learn far less that is of interest non-medically.

Having decided to study one or more semesters in Berlin, you can matriculate if you see fit, though it is not necessary. For this nothing is necessary but your passport as a citizen of the United States. Your medical diploma is not of the slightest use. Matriculation gives you a right to attend any "public" courses, gives you some reduction of price at theatres and concerts, and confers a certain immunity against police arrest, which may be convenient if you are sportively inclined. Neither need you be deterred by age from matriculating, for you will find among your fellow-students white-headed men in the sixties. Matriculation costs about seven dollars in money and an hour or two in time. If a matriculant, you pay through the university *quaester;* if not, in person to the respective teachers for whatever courses you elect. The usual price for a private course occupying two hours a week throughout the term is five dollars, and for a more or less number of hours in the same proportion, so that fifty dollars for a term will pretty thoroughly fill one's time, twenty hours per week of private courses and as many public courses as one can get time for. There is also usually no objection to an occasional attendance at other clinics than those for which you are regularly enrolled.

Vacation courses usually cost about the same for the four weeks that the university courses of the same number of hours per week cost for four months. Gynæcological and touch courses are dearer. The number of courses offered is usually from eighty to ninety. For one of the bacteriological courses above referred to, occupying the whole of every day for a month, the cost, including everything, is about twenty-five dollars.

Living in Berlin is cheaper than in the other great European capitals: one can live economically for not much over a dollar per day.

Women receive no recognition in any German-speaking university so far as I am aware, except Zurich. There are a few individual professors, however, who are willing to connive at the presence of women in their courses, especially if they can ascertain that some of their colleagues have committed a similar daring indiscretion.

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PRELIMINARY REPORT UPON INVESTIGATIONS CONCERNING THE CONTAGIUM VIVUM OF SMALL-POX.[1]

PRESENTED TO THE WORSHIPFUL COMPANY OF GROCERS, LONDON,
BY STEPHEN C. MARTIN, M.D., BROOKLINE, MASS.

The following is submitted as a partial or preliminary report of the results thus far reached in my investigations regarding the germ of cow-pox. I present it simply as a very concise statement of the facts that I have been able to demonstrate with certainty up to the present date. This will be followed by a full and complete report on the subject, as soon as I have succeeded in thoroughly elucidating certain facts, principally the morphology of the germ, which are not yet perfectly clear to my mind.

A large number and variety of bacteria obtained from vaccine virus can be grown upon the various culture media. Experimenting with gelatine, glycerine-gelatine, milk-rice, agar-agar and glycerine agar-agar, I obtained pure cultures of many varieties, none of which, however, produced cow-pox when inoculated upon the animal.

A year ago I abandoned the use of all culture media except the hardened sterilized serum of bullock's blood. With this at a constant temperature of 37.5° Centigrade, I have since conducted all my experiments. So soon as I adopted this course, I got cultures that produced cow-pox, even after passing through several generations of culture tubes. These cultures, however, were not pure, but contained quite a variety of bacteria. In every instance the blood serum was liquefied.

In November last, from a colony upon the surface of the blood serum, in a tube inoculated with heifer-transmitted cow-pox, I started a series of cultures, which have now reached the ninth generation. From both the surface growth and the condensation water of each of these cultures, I have made inoculations upon calves, and in every instance produced a perfect vesicle of cow-pox. The material "takes" with the same certainty as the lymph from the vesicle. From the vesicles produced by it upon the calf, I have vaccinated a number of children, in every case inducing vaccinia of the most perfect type, the areola not commencing until the beginning of the ninth day, a well-marked febrile reaction, and the crust not falling till the twenty-fifth day or later.

I also have a second series of cultures which I started from another specimen of vaccine lymph, that presents a precisely similar appearance, both gross and microscopical, to the first series.

The history and appearance of every culture tube, is exactly the same. After three days in the thermostat, numerous small white colonies are to be seen upon the surface of the medium, in the course of the lines drawn by the needle, and a cloud appears in the lower part of the condensation water. Each colony occupies a little depression, which it has formed for itself, by liquefying the medium about it. Later the liquefied blood serum flows down from the colonies, carrying the growth with it, and so producing liquefaction in its course and forming white lines, occupying shallow, eroded sulci, running down into the condensation water. At the bottom of the latter, a heavy cloud settles, consisting for the most part of disintegrated blood serum, while the upper portion of the water presents a remarkably clarified appearance. When a culture is seven days old, I inoculate the next tube in the series from it and remove it from the thermostat. No growth develops upon blood serum at the temperature of the room; or upon glycerine agar-agar, either at the temperature of the room or at 37.5° Centigrade.

I have not as yet tried other culture media.

The growth is but a feeble one upon the surface of the blood serum, though such a marked change takes place in the condensation water; and in some lots of blood serum it will not grow upon the surface at all, although developing well in the water.

The bacterium varies in form according to the various conditions of its nutritive environment and the consequent rate of its development. The most constant and prevalent form is a short, fine bacillus with rounded or nearly square ends. Those parts of the culture, where the nutriment is apparently exhausted, show the same bacilli in short chains, longer bacilli, and bacilli much enlarged at one end or the middle, as if in preparation for spore formation.

Where the nutrient medium is fresh, the plant divides more rapidly and forms very short bacilli, and often even a pure micrococcus form. The latter too, is frequently seen forming chains of five or six. Chains are observed, made up partly of bacilli and partly of micrococci.

The micrococcus form is found, for the most part, in the early colonies at the upper part of the culture tube, where the nutrient medium retains its freshness by the constant draining away of the liquefied and exhausted portion. On the other hand, where this latter abounds, as in the sulci, and the pockets and condensation water, into which these drain, the bacilli greatly predominate, and the "balloon" forms appear.

Cover-glasses of the growth stain well, after a few second's exposure to Ziehl's carbolic acid Fuchsin solution.

I have repeatedly inoculated tubes from isolated colonies that manifestly grew from a single bacterium; and the resulting cultures have invariably shown all the forms enumerated above.

My opinion now is that my tubes contain but a single plant, which assumes different forms according to the various conditions of nutrition. The typical stages of its development being a coccus, which becomes a rod; and then a "balloon," the latter being either a spore (*dauerform*) or a degeneration form. It is, of course possible, however, that there may be two separate plants present, a very small micrococcus and a bacillus. Further investigations can alone decide this point, and until I have made such, I cannot speak decidedly as to the morphology of the germ.

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[1] Forwarded from the Bacteriological Laboratory, Harvard Medical School, Boston, February 1, 1891.

CONCLUSION.

The object of this communication is simply to record these facts:

(1) That the germ of cow-pox is a bacterium.

(2) That it can be grown upon certain kinds of blood serum.

(3) That after an indefinite number of generations of such growth, it retains unimpaired its pathogenic properties.

Experimental science suffered a severe loss in the passing away of Stephen Crosby Martin on Sunday, November 5, 1893.

Dr. Martin was the second son of Henry Austin Martin (M.D., 1845), and graduated from the Harvard Medical School in 1874, becoming a Fellow of the Massachusetts Medical Society immediately afterwards. Having no especial taste for general practice, and guided by his father's interest in the propagation of vaccine virus, it was to this branch of medical work that his attention was particularly directed from the beginning of his medical life; and from this time he took entire charge of what has always been the best-known and most reliable source of vaccine virus in this country.

As it had been of the father, so it was the constant endeavor of the son, at all times and at any cost of energy and expense, to secure and take advantage of new or improved methods in the preparation of the virus sent out under his seal. Naturally, therefore, his interest was excited by, and his attention directed towards, the advances of the last ten years in the knowledge of the bacteria, for these advances pointed unmistakably towards a new field of investigation of the virus of vaccinia. All analogy showed that the active principle must be vital, and therefore subject to isolation and specific study; and that, these steps being accomplished, it might be possible to secure a growth in the laboratory that would serve the purpose of protection against small-pox, and that would at the same time be absolutely free from any possibility of contamination, or of producing such unfortunate results as have been reported after the employment of humanized virus.

Led by these considerations, and at an age when most men are content to go on in the lines of work already laid down for them, Dr. Martin became a student again, and took up the science of bacteriology in the Harvard Medical School. Entering the laboratory devoted to that branch of instruction early in the fall of 1888, and under the advice of the head of the department, he devoted an entire year to the study of the methods employed in general investigation before attempting to enter upon the special subject that interested him. Beginning upon this at last, his earnest and persistent work was rewarded with results of such importance that, by the advice of those specially interested, a preliminary communication was made to the Association of American Physicians at its meeting in Washington in May, 1890. (This communication is to be found upon page 181 of Volume V, of the Transactions of the Association, and is correct, with the exception of the date attached to the notes, which should be May 11, 1890, and *not* May 11, 1889, as printed.) After this communication, the work was prosecuted with unremitting vigor, until, in February, 1891, the accompanying statement was prepared and submitted to the Grocer's Company in London.

As will be seen — if the observations were correct, and with others made later — the whole chain of evidence was completed; that is to say, a pure culture of a specific micro-organism was obtained from ordinary vaccine virus; this culture was carried through an indefinite number of generations; inoculations with these pure cultures invariably produced typical vaccine vesicles in calves, and in some of the children experimented upon; and in one case of the latter, in which the experiment was tried, the child was refractory to inoculation with ordinary vaccine virus. From all the vesicles upon the calves, the typical organism could with certainty be isolated and cultivated. So much facility had Dr. Martin attained in the special manipulations necessary, that he could at any time, and with practical certainty, start a fresh culture from the calf.

Thus it will appear that, more than once, the complete result was obtained, the production of typical vaccine vesicles in human beings; but there was a marked difference in the certainty of the effects produced by the inoculation of pure cultures in human beings and in calves. In the former case, of the few experiments tried, fewer still showed any results; but in the latter the results were uniform and typical, and virus from vesicles thus produced was, if anything, more active and certain than that obtained in the ordinary way.

At no time did Dr. Martin receive aid, aside from suggestions as to methods, except in the settling of some of the problems connected with the biology of the organism discovered by him. This was from Dr. John Amory Jeffries, whose brilliant career was so suddenly cut short in the spring of 1892; and it was most assuredly Dr. Martin's wish that no final results of his work should appear without acknowledgment of this aid, covering some three months of the fall of 1890.

But just at this most important stage of the investigation — in the spring of 1891 — Dr. Martin's work was cut short by the death, under trying circumstances, of a brother; and his strength, never of the best, had not recovered from this shock before the appearance of the symptoms, in the fall of 1891, that produced constantly increasing pain and prostration, until his vitality was exhausted and his sufferings were terminated by death.

During this entire period, the sufferer never lost his courage nor the hope, and almost the expectation, of being able at last to take up and complete the work so successfully begun. Some months before his death, and when an operation had been decided upon, the result of which was necessarily in doubt, Dr. Martin wrote out full notes of all his work. These will furnish a most valuable contribution if they shall be edited and published.

It is as a tribute to the qualities displayed — to the persistency under discouragement, to the energy and determination to succeed — that these lines are written. Certainly every one brought in contact with him in the laboratory joins in all the words of praise for work done, and regrets for what was left undone, that can be put together, as well as in the deepest sympathy for the family deprived of such a member.

Harold Clarence Ernst.

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FURTHER OBSERVATIONS ON REMOVAL OF THE STAPES.[1]

BY FREDERICK L. JACK, M.D., BOSTON, MASS.

Since bringing the subject of removal of the stapes for improvement of hearing to the consideration of the Society last year, the operation has been tried in thirty-two additional cases. These, together with the original series of sixteen, make forty-eight cases in all for observation and study. The results have been carefully noted, and care taken to have the tests in hearing as accurate as possible.

In reviewing the cases there is much to encourage the adoption of the procedure, but its clinical application will require modification. The new is always interesting, and the tendency is to urge one on; yet it has seemed best in so important a matter to advance slowly.

In bringing the subject before you this year, it is hoped that a report of the present condition of the first series may prove interesting, and that brief histories of a few subsequent cases, illustrating further some of the conditions met with, and suggesting problems still awaiting solution, will be profitable.

[1] Read before the American Otological Society, July 18, 1893.

Of the original sixteen cases, three were in active process of suppuration at the time of the operation; nine were the effects of chronic purulent inflammation. These ears, with one exception, have remained healed. There were three of otitis media insidiosa, and one of Ménière's disease.

Most of these cases have been seen once or twice during the year by members of the staff at the Infirmary, and nearly all have been again tested within two or three weeks by Dr. Crockett or myself. It is about one year since they were operated upon — time enough to form some idea as to the permanency of the results in hearing, and to note anatomical changes, if any, in cases where the oval niche was visible.

In a case of chronic suppurative inflammation of both middle ears, in which the right stapes was removed a year ago, the oval niche, one month afterwards, was found granular, a condition probably due to the neglect of the patient to continue treatment. The ear healed in a short time after removing a portion of the growths with forceps and making application of a saturated solution of copper. On July 8, 1893, examination of the right ear revealed a thin membrane over the oval niche. Ear perfectly dry. Hearing in the right better than in the left ear, which still continues to discharge. Before the operation the hearing was more acute in the left than right ear. Tests in hearing on July 8, 1893, as follows:

W = R [illegible]. L [illegible]
V = R [illegible]. L [illegible]
F. C. [illegible] R [illegible]

Hearing was practically the same as when tested immediately after the operation a year ago. This seemed rather surprising, considering the subsequent inflammation in the oval window, with every condition favorable for the occlusion of the opening by adhesion.

The wound in the drum in most cases was found cicatrized. In a number of cases where the drum, previous to operating, was wanting, as in the case just spoken of, a thin cicatricial membrane over the oval window could be distinctly seen.

A matter of considerable interest is the effect of removal on the labyrinth. The patients were closely questioned for any symptoms of vertigo, but it was found in one case only, that of a woman forty-seven years of age. Dizziness was, however, an old complaint with her, and was very likely due to dyspepsia. She volunteered the information that the trouble was less frequent of late than for a short time after the operation. In a few cases, vertigo, which was complained of before the operation, had entirely disappeared.

The influence of the operation upon subjective noises, judged by these cases, is uncertain. Many in whom tinnitus existed previous to the operation, have been entirely free from this annoying symptom for a year. The reverse, though, is true in a few cases, a slight noise being noticed now at times.

The improvement noted in hearing the tuning-fork, (Politzer) both by air and bone, was found essentially the same as when tested a year ago.

The test by König's rods showed in one case a slight gain of five thousand (5,000) vibrations per second; in another, the loss of the same. In one case the considerable gain of fifteen thousand (15,000) vibrations after the operation was still held.

The test for hearing the watch indicated in some cases a slight gain, in others a slight loss. In cases of slight loss for the watch and rods, this, of course, indicating a diminished perception for high tones; the hearing power for the voice was apparently increased. This peculiarity in the relation between hearing the voice and high tones is frequently found among deaf people.

We now come to the point of greatest importance, to the patient at least; namely, a report of the hearing power for the voice. In applying this test the same words were used in all cases, for, as shown by Wolf, the pitch of the tones of speech ranges from sixteen vibrations per second to four thousand thirty-two (4,032) vibrations, nearly eight octaves, and vowels are heard at a greater distance than consonants. The opposite ear was tightly plugged with cotton, and the finger of an assistant pressed firmly into the meatus. In those cases where the foot-plate remained, there was practically no change from preceding tests. On the other hand, where the oval window had been completely cleared the hearing was practically the same as found immediately after the operation.

In the only case at that time of removal from both ears, the hearing remained perfectly good for five months, and was then somewhat impaired after a severe head-cold which closed the Eustachian tubes and caused marked retraction of the drum membrane in the neighborhood of the oval niche. The drum returned to its normal position after inflation of both middle ears through the catheter, and hearing was thereby restored. This would seem to prove, as there was no stapes in either ear, that the obstruction to hearing was due to the drawing of the cicatricial membrane into the window. About four months ago, a triangular piece of membrane was removed, under cocaine, from one side in the upper posterior quadrant, with the object of contracting the cicatricial drum. By this it was hoped to counteract the tendency of the membrane to sink into the opening. This was partially, but not wholly, successful. This case was numbered XII, and briefly reported last year as one of progressive deafness from chronic non-suppurative inflammation (hypertrophic) of several years' duration. No history of otorrhœa, but a cicatrix was found over the head of the stapes on the left side. The hearing in the left ear before operation was as follows: whispered voice not heard; loud voice, four feet; watch, $\frac{2}{60}$; tuning-fork C, through the air 15″ by bone-conduction in the left ear; König's rods, 30,000. Operation under ether, June 26, 1892. Stapes removed.

On July 8, 1893, about one year after the operation, the hearing was better than immediately after: whispered voice, three feet; loud voice, 21 feet; watch, $\frac{1}{100}$; tuning-fork A, 13″ by bone-conduction in the right; König's rods, 35,000.

On September 27, 1892, at the patient's request, the right ear was operated upon, although the hearing was fair. Whispered voice, six inches; moderate voice, 10 feet; watch, c/60. Nine months afterwards (July 8, 1893): whispered voice, 10 feet; moderately loud, 32 feet; watch, $\frac{1}{100}$. More concisely given in table.

W = R [illegible]. L [illegible]
V = R [illegible]. L [illegible]
F. A. [illegible] R [illegible]. L [illegible]
Weber equal.
Konig's rods, 40,000 not heard.

The tests were made after the use of the catheter, and, for the reason already spoken of, show a little better results than before inflation. The ears have remained perfectly healed. No dizziness and less tinnitus than before. The special importance of this case lies in the fact that there is no stapes in either ear. The only plausible theory for the remarkable improvement is that there is unobstructed conduction of sound-waves through the oval window, and that there they fall upon a healthy perceiving apparatus beyond.

In general, the operation described last year is employed.[2] There are a few additional details however, worthy of brief notice. During the operation the patient's head must be perfectly still. To ensure this ether should be given. As suggested in the paper of last year, an exploratory opening (partial myringectomy) may be advisable, to reveal the presence of adhesions and to determine the mobility of the stapes. For this, the use of a solution of cocaine is often sufficient. It is important to carry the posterior and upper cut as close to the auditory ring as possible, for in not a few cases the joint is on a line with this ring, or is situated a little above it. The small flap in the drum may be put back in place, and is best kept in position by the paper dressing recommended by Dr. Blake. Removal of the bone is made difficult or impossible by firm anchylosis, usually of the foot-plate, or from high position of the oval window, or what is practically the same thing, a prominent auditory ring. The crura are sometimes very delicate — perhaps atrophied by pressure — and easily break on manipulation.

If in disarticulating the incudo-stapedial joint the incus is considerably displaced, its removal is advisable, particularly if it interferes with a view of the head of the stapes. The long process of the incus, when in place tends to prevent the subsequently healed membrane from sinking into the oval niche, a condition which in one case, previously mentioned, of double extraction of the stapes a year ago, is the only obstacle which prevents the patient from almost perfect hearing for the voice.

As regards the application of the operation to some of the different classes of ear disease.

In cases of otitis media suppurativa, after the otorrhœa has ceased, the incudo-stapedial joint is often firmly fixed by bands of adhesions. Briefly described, this condition of the bone offers a mechanical hindrance to the transmission of sound-waves to the vestibule. Relieving this obstruction by removal of the stirrup has increased the hearing power for the voice very materially.

Another set of cases is very similar pathologically, otitis catarrhalis adhæsiva. There is proliferation of tissues with anchylosis of the ossicular chain. Here again, good results by removal of the bone have been demonstrated.

There is a third class, otitis media insidiosa (sclerosis), in which it is generally believed that the anchylosis is not fibrous, but osseous (Tröltsch, Toynbee). This condition is usually characterized by a high degree of deafness and tinnitus. Appearances of the tympanum are either normal or nearly so. Judging from a few experiences with this troublesome condition, the region of the foot-plate would appear to be the principal seat of the bony anchylosis. I can only say in evidence of this that in most of these cases the foot-plate, in part or whole, remained behind after the removal of the head and crura. This accident is at present unavoidable and insurmountable. As might be expected, the improvement in hearing is not as great as in the other cases. Larger experience with this class of cases may, however, give better results.

The importance of a differential diagnosis before operating is of course great. To the tests already employed in diagnosis, the vibromata may form a useful addition in determining the existence or nonexistence of fixation of the stapes. It seems hardly necessary to say that diseases of the internal ear are not affected.

The following cases recently operated on best illustrate several important points.

CASE I. Partial removal of the foot-plate with stapes-hook. Rupture of the basal membrane and outflow of the perilymph.

B. S., forty-eight years old. History of progressive deafness for fifteen years, the result of an insidious middle-ear inflammation (otitis media insidiosa). The tuning-fork test revealed increased bone-conduction on the left side. Hearing for the voice less than one-half for usual tones. The left ear was operated upon February 27, 1893. Dr. W. S. Bryant was present. The operation was performed in the usual way up to the point of extraction, when the crura broke close to their insertion to the base plate. At the point of fracture the bone was found unusually slender. The plate could now be clearly seen, and attempts to pick it out, both by Dr. Bryant and myself, were unsuccessful at first. The point selected was the posterior upper edge, where the thin plate, to a large extent, overlaps the margin of the oval niche. The point of the hook was carefully kept downwards, away from the facial nerve. So firmly fixed was the bone that the hook failed to engage, and it was only by fracturing the plate in the centre, where it seemed somewhat thin, that portions were removed. Immediately on breaking through, there was an outflow of fluid from the labyrinth. A few small pieces of the foot-plate were removed and the fluid absorbed by cotton. Patient remained in bed five days, and was made very dizzy and nauseated on raising her head from the pillow. Hearing a little better than before the operation. In two weeks patient returned home. Hearing good, a little dizzy on turning suddenly, no nausea. I have recently heard that the vertigo disappeared shortly after her return home, that the hearing was as good as before the operation, and the ear had given no trouble. The oval window in this case was unusually large and shallow, and the foot-plate could be easily seen. The region of the Fallopian canal was carefully avoided.

The escape of perilymph then does not necessarily destroy the hearing. This point had been demonstrated on pigeons by Kessel. It was possible to demonstrate the presence of labyrinth fluid in but a very few cases. The slight evidence gained from these cases seems to show that the hearing was much better where the basal membrane was not ruptured by the operation. The margins of the fenestra ovalis and articulating surface of the foot-plate are encircled by a hyaline cartilage, as shown by the investigations of Toynbee, Tröltsch, Rüdinger and others. These conditions, when not too far destroyed by pathological changes, would admit of removal of the foot-plate without rupture of the membrane beneath.

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[2] Transactions of the American Otological Society, 1892.

Besides firm fixation of the foot-plate, we have anchylosis of the crura of the stapes with the niche of the fenestra ovalis described by Politzer. In this class of cases the operation has met with the best results. Mobilization of the stapes has probably also met with its best results here. This proliferation of tissue is naturally more abundant in ears having passed through a suppurative process, although in the non-suppurative cases the stapes is often found firmly fixed.

Case II. Fixation of the stapes, result of chronic suppurative inflammation. Removal of the bone followed by marked improvement in hearing.

B. D., fifty-two years old. Hearing nearly destroyed, the result of long-continued suppurative otitis media. Examination on April 3, 1893, revealed extensive destruction in the right membrane tympani. The left membrane had been entirely destroyed with the exception of a very narrow edge at the insertion in the annulus tympanicus. The only ossicle that could be made out was the stapes, the head of which was firmly bound by adhesions. There was a slight mucopurulent discharge from the ear. There was no hearing in the right ear, it being totally deaf for all sounds through the air. The tuning-fork C was not heard at all by bone-conduction. Upon the left side a loud voice could be heard through a conversation-tube. Bone-conduction good.

Considering the fact that the stapes was firmly anchylosed and that the bone-conduction was normal, the conditions seemed favorable for operative interference. The adhesions around the head were divided and the knife carried a little way into the niche before the bone was sufficiently movable to attempt its extraction. Traction on the bone produced some dizziness which was quite marked on its removal. Immediately after the operation the ordinary voice could be distinguished at four feet. This marked improvement continued for two days to the patient's delight, when inflammatory reaction set in and the hearing steadily decreased. While this lasted the hearing was very bad. The ear is now healed and the hearing is improving. At present it is:

Watch not heard on contact.
V = [illegible] : T. F. C. [illegible]
Weber not heard.

The results in this case were excellent up to the time of reaction, which entirely closed the oval niche with swollen mucous membrane. Reaction has been the exception, and was in this case very likely due to the presence of a purulent discharge in the ear.

The next case, one of those forlorn hopes for which as little might be expected from removal of the stapes as from any other known means of treatment, is briefly reported.

Case III. Deaf mute. Double extraction of the stapes.

Miss G., of Pittsburg, nineteen years old, recently a scholar at Clarke Institution for deaf mutes. Hearing began rapidly to fail about ten years ago. Family history good, and has always enjoyed good health. In December, 1892, when I saw the patient, both drum membranes were nearly normal in color and position. The long process of the incus was visible in both ears. No hearing for any sounds by air or by means of the conversation-tube. Tuning-fork said to have been heard through the cranial bones. On December 29th the operation was performed on the right ear in the usual way, under ether. Little resistance was encountered in the removal. There was no dizziness and the patient was up and about on the next morning. No reaction. The hearing was improved, isolated words and the tuning-fork heard through the conversation-tube. Encouraged by this slight gain, and at the patient's request, the left ear was operated upon two weeks later. Some difficulty was met with in dividing the incudo-stapedial joint, caused by a rather long bony projection on the tip of the long process of the incus. As before, there was no reaction or discomfort other than usually attends the administration of ether. The hearing was not improved. A loud noise through the otophone caused a slight pain for a day or two. A lesion of the auditory nerve or sound-perceiving apparatus was strongly suggested by the tests made before the operation, and it was confirmed afterwards by the results.

In reviewing the year's work the following conclusions are drawn:

(1) The operation is followed by the best results in the class of cases where, from the increase of tissue, the effects of suppuration or hypertrophic inflammation, the stapes offers an obstruction to sound-waves; by its removal the hearing is improved. The results in cases of otitis media chronica insidiosa on account of failure to extract the foot-plate are not encouraging.

(2) Inflammatory reaction is unusual and followed by no bad results.

(3) The hearing is not necessarily impaired by the subsequent growth of a thin cicatricial membrane over the fenestral niche.

(4) Some cases of tinnitus and aural vertigo are relieved, and there is little chance of causing permanent vertigo in cases where it had not previously existed.

(5) It rarely happens that a patient improves for all tones. Improvement in hearing the human voice is out of proportion to the improvement for other sounds, and the reverse sometimes occurs.

(6) Failure in some cases may be due to hæmorrhage into the labyrinth at the time of the operation. It is believed to be a rare complication, but was thought to have occurred in one or two cases.

(7) In removing carious ossicles, the stapes if found diseased should also be removed.

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Clinical Department.

A CASE OF SUDDEN DEATH IN AN INEBRIATE.

BY [illegible] HURD, M.D., NEWBURYPORT,
Medical Examiner, Houston [illegible] Institute.

Frederick Frederickson, a Norwegian, aged forty years, was admitted to the "Houston Institute," Newburyport (an institute for the cure of inebriety by a secret method), July 4, 1893. There is nothing in his antecedents to be recorded except that he was of a healthy, long-lived family, and had never been sick prior to his entering the "Institute." He had been intemperate for twelve years, taking a variable number of drinks of hard liquor and of beer every day, and indulging in frequent sprees, to the impoverishment of himself and family. He was also an inveterate smoker.

He was examined at the Institute by the attending physician, who noted nothing pathological except a weak, intermittent pulse and heart (supposed tobacco heart). He was placed under the usual treatment, alcohol and tobacco being soon completely withdrawn, and various tonics given in their place.

August 7th, he left the Institute "cured," but with more or less pain and discomfort in the region of the heart; there was some shortness of breath and complete inability for exertion; he was unable to work at his trade of silversmith.

The night of the 17th he was unable to sleep on account of severe pain, of a stabbing, burning nature, in the region of the heart, and general restlessness and distress. In the morning, he went to the Institute for relief; became rapidly worse, asked to be taken to his home, not more than a block distant, and died on the way.

This was the second sudden death occurring among the patients of this Institute within a week.

The directors of the "Houston Cure Company," realizing the unfavorable light in which the Institute was placed, and believing that the treatment there given was not responsible for these deaths, desired to vindicate themselves before the public by procuring an autopsy on Frederickson. There was, in fact, no little excitement at the North End by these two sudden deaths, both happening within three days.[1]

On requisition of the mayor, I performed an autopsy on the afternoon of the 18th; Drs. F. A. Howe and C. W. Stiles were present.

The immediate cause of death was fatty degeneration of the heart. This did not appear to be dependent on atheroma or occlusion of the coronaries, which seemed everywhere sound and competent, though embedded in an abnormal amount of fat. In places, as in the wall of the left ventricle below the auriculoventricular furrow and at the apex, the muscular tissue was entirely replaced by adipose, which could be easily torn through by the finger-nail or handle of the scalpel down to the endocardium. There was everywhere a great increase of the normal fatty tissue.

The solid organs of the abdomen were hyperæmic and more or less altered. The spleen was congested and softened; its pulp the consistence of *bouillie.* The liver was hypertrophied, filling the whole of the left hypochondrium, encroaching on the stomach and pressing upwards the diaphragm, thereby embarrassing the heart; it was firm, hard, and cut with great resistance, as if cirrhosed. The kidneys were enlarged and smooth; capsule opaque, injected and easily detached. The parenchyma was injected, and a copious bloody exudation followed section. Both cortical and medullary portions were swollen, of dark-brown color, and soft; in fact, any difference existing between these portions was hardly to be distinguished. These organs were apparently in a state of sub-acute inflammation. The stomach was empty. This organ was not attentively examined.

The autopsy exonerated the Houston Institute, by showing that this man died of fatty disease of the heart and other lesions, in all likelihood the result of chronic poisoning by alcohol.

Primary fatty degeneration of the heart found apart from valvular lesions or marked atheromatous changes in the arteries, in a young or middle aged person with no known hereditary predisposition or diathesis, is strongly suggestive of chronic alcoholism. In fact, it is regarded by some authorities as almost peculiar to this form of poisoning.

Pains similar to those of angina pectoris — in fact, so markedly resembling typical angina pectoris as to be easily confounded with it — may occur in other conditions besides coronary stenosis, as in the case above reported.

Doubtless inebriates in the condition of Frederickson, are not fit subjects for Houston or other "institutes" for the cure of inebriety, and will live longer on a moderate allowance of alcohol. There was, however, nothing in the antecedent history of this man to indicate that he was not a fit subject for the abstinence treatment, and it is impossible to tell how much the morbidity may have increased during the five weeks that he was at the Institute.

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AN EPIDEMIC OF SCARLET FEVER; ETIOLOGY.

BY DAVID DANA SPEAR, A.M., M.D., FREEPORT, ME.

On the 21st of September there appeared in my field of practice an epidemic of scarlet fever, which in one week's time assumed the proportion of twenty-five cases, mild in character but well marked, going through the several stages in a typical manner, having the rash, the high fever, the angina, and finally exfoliation of the derma.

The interesting point in all these was the inception. All of my patients were attendants at one and the same primary school, in which there were two school-rooms — one on the first and one on the second floor. All of the cases occurred from the school-room on the first or lower floor. All of the cases occurred from eight to eleven days after the opening of the fall term.

The school-room had just undergone a thorough overhauling and repairing. Many of the old benches had been taken up; quite a large portion of the old floor had been taken out and replaced by new floor-boards; a good deal of dust was disturbed and let loose in the room, which, however, was swept and painted, and the walls tinted, before the opening of the school.

Some two years ago several cases of this same disease broke out in the same room; and every three or four years, over the space of some fifteen or more years, a case or two of scarlet fever has appeared among the attendants at this school.

In 1875, there very suddenly appeared in this village a large number of cases of scarlet fever; and during that fall and winter a large number of scholars from this school were attacked. I treated ninety-eight cases. An account of this epidemic was given in the *Medical Record* of New York (Vol. X, page 782, for 1875). In that article the conclusions were drawn, (1) that in one case it was barely possible that the disease occurred independently; (2) that an unaffected person may be the carrier of the disease over many miles; (3) that the character of the disease was not determined by any peculiar feature of the disease from which one becomes infected, but rather by some existing condition in the person attacked.

The additional conclusions from this present epidemic seem to be that the contagion of scarlet fever can be kept alive for a long space of time. I have

[1] The first case was that of John L. Jones, an epileptic who died suddenly, during the period of withdrawal, by a convulsion.

no doubt but that the school-room from which this present epidemic started, has preserved the germs for infection since September of 1874.

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Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY FRANCIS S. WATSON, M.D.

RESECTIONS OF THE KIDNEY.

Kummel[1] publishes an interesting article on the subject of "Resections of the Kidney," in which, after referring to some experimental researches with regard to resections of the kidney in animals, he describes his own experience of three such operations in human subjects — noting similar operations already performed by Czerny in 1889, and by Waitz in the same year.

Of the writer's three patients, the first was a woman, aged forty-one, from whose right kidney he removed a stone of the size of a walnut. Finding a portion of the kidney practically destroyed by multiple abscesses, he removed that part of the organ. The wound made in the kidney was only partially sutured — that part of it left open was sewed to the skin — and packed with iodoform gauze. The wounds healed completely, though slowly; and the patient made an excellent recovery.

The second case was a male, aged fifty-four. The chief symptom was pain and tenderness in the region of the right kidney, and hæmaturia. An incision was made parallel with the costal arch. On exposing the kidney there was seen at its upper end a yellowish area about the size of a walnut. This, together with a wedge-shaped section of the kidney, was excised. Sutures failed to control the hæmorrhage. The kidney wound was thereupon fixed to the outer wound, and packed with gauze. The wound healed rapidly. The patient left the hospital at the end of three weeks, apparently well. Six weeks later he returned. A tumor of the bladder was then discovered. This was excised through a suprapubic cystotomy. Rapid healing and recovery followed. The wound made in the bladder by the excision was sutured. Ten weeks after the last operation the patient died of pneumonia and empyema.

The third case was one of echinococcus of the kidney, in a woman of thirty-four. In this case the kidney was reached by a similar incision to that practised in the two preceding cases. The kidney was greatly enlarged. Numerous echinococcus cysts were found, and freely incised. The cysts were then excised, together with portions of the kidney adjacent, by wedge-shaped incisions. The sutures failed to control the hæmorrhage, as in the second case; and the kidney was, as in that instance, fixed to the outer wound and packed with iodoform gauze. About one-half the kidney was removed, the pelvis not being injured. This patient made a good recovery.

TUMORS OF THE BLADDER.

Fenwick[2] reports the results of his observations and operations upon thirty-two cases of bladder tumors, in all but two of which tumors were removed.

In three cases the tumors were reached by the perineal incision, in nineteen by the suprapubic route, and in eight through the dilated female urethra.

Only two deaths occurred as the result of operation. In both, death was due to suppression of urine; and in both the tumors were small papillomata. Both patients had had attacks of influenza not long before the operations.

In one of the other patients there has been no evidence of recurrence, more than four years having elapsed since operation. All the other patients who had benign tumors were alive and well at the date of the report, four years or less having passed since the operation.

In one case of carcinoma, recurrence occurred three months after thorough removal; and in four other cases recurrence is noted.

Early operation is urged by Fenwick in all cases of benign growths, and also the benefits to be derived from the use of the cystoscope, in skilled hands, in making diagnoses.

SOME NOTABLE CASES AND OPERATIONS.

(*a*) Cabot[3] reports a case of "Calculous Pyelitis, with Complete Suppression of Urine for Seven Days: Relieved by Operation," as follows:

The history pointed to the previous destruction of one kidney by calculous disease and to the plugging of the ureter of the other kidney by a calculus. In spite of the long-continued anuria (seven days), the patient had had no uræmic symptoms until the last day. Hoping to find and remove the obstruction in the ureter, Cabot performed a median abdominal section, the incision being made between the symphisis pubis and the umbilicus. The right kidney was found to be enlarged to thrice its natural size. The left kidney was normal in size. No stone could be felt in either of the kidneys or ureters. The left kidney was then exposed by an incision in the left loin. Careful bimanual palpation of the left kidney — one hand being in the abdomen, and the other in the wound in the back — failed to reveal any stone. The operation was then abandoned. The abdominal wound was sutured throughout; that in the loin was partially closed, and drained. Three hours later a catheter was passed into the bladder, and thirty-seven ounces of urine were evacuated from it. Polyuria followed for some days, and then gradually ceased. Convalescence was satisfactory. A fortnight after the operation some grains of calcareous matter were washed out of the bladder. Cabot attributes the dislodgement of the obstructing calculus from the left ureter to the accidental kneading of the kidney which occurred while endeavoring to feel the stone by means of his bimanual examination through the wound.

(*b*) Milton[4] reports the "Extraction by Laparotomy from the Human Bladder of the Largest Stone ever recorded as successfully removed."

This stone weighed thirty-four and one-half ounces. The patient was an Egyptian, aged sixty. A mass extending to the umbilicus could be felt, and a sound passed into the bladder came at once upon a stone. An abdominal incision was carried from the umbilicus to the pubes, exposing the anterior surface of the bladder. An attempt was made to strip the peritoneum from the anterior face of the bladder; but it failed.

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[1] Arch. für Klin. Chir., Bd. xlv, 3d Heft., p. [illegible], [illegible]
[2] British Medical Journal, June [illegible], [illegible].
[3] Boston Medical and Surgical Journal, [illegible]
[4] Lancet, September [illegible], [illegible], p. [illegible].

Thereupon the peritoneum was incised freely. The bladder was next incised, from its summit to its neck anteriorly — its peritoneal covering being, of course, divided. After making two lateral wounds in the course of the first bladder incision, the stone could be delivered by upward pressure exerted by two fingers in the rectum. The bladder wound was closed, except for a small opening at its lower part, with silk-worm-gut sutures; the peritoneum with catgut, and the outer wound, except at its lower angle, with silver wire. There was no peritoneal reaction afterward; and the patient recovered from the operation, but died about two months later. The autopsy showed advanced disease of both kidneys. The largest diameter of the stone was six inches.

This case is especially interesting in view of the recent advocacy from various quarters, of opening the bladder through its serous surface as well as below, in order to get more room to work in, in certain difficult cases.

(*c*) Dittel has recently reported a case of total extirpation of the prostate, with recovery, in a man of thirty-two, who had been suffering from severe hæmaturia. A suprapubic cystotomy showed the source of the bleeding to be from a tumor (afterwards shown to be a fibroma) springing from the prostate. The growth was thought to be too large to allow of satisfactory removal through the suprapubic wound, and it was reached from below by an incision from the coccyx to the anus, separating the rectum from its attachments and then exposing the prostate by an oval incision. The urethra and bladder were not opened in this operation. Through this opening the prostate was wholly removed. The bladder was drained through the urethra, and the wound packed with iodoform gauze. The patient made a perfectly satisfactory recovery.

SURGICAL INTERFERENCE IN CASES OF RENAL TUBERCULOSIS.

In our last report we included a summary of an article of Facklam's,[5] upon the question of surgical interference in cases of renal tuberculosis.

In the September number (1893) of the *Annales des Maladies des Organes Genito-Urinaries*, is published a short critical review of the same subject by Dr. E. Vigneron. Dr. Vigneron points out that surgical interference in cases of renal tuberculosis dates back only twenty-five years, and that the subject has been exhaustively treated only since 1890. He refers to the articles of Tuffier, Facklam and Heydenreich as the most recent and important contributions to the subject; and he compares his own conclusions — arrived at independently — with those of the other surgeons just named, as follows:

NEPHROTOMY IN RENAL TUBERCULOSIS.

Facklam: 36 cases, general mortality 33.33%, operative mortality, 13.88%.

Vigneron: 54 cases, general mortality 38.18%, operative mortality, 12.72%.

Vigneron advises against early surgical interference in renal tuberculosis, following in this respect the teachings of Professor Guyon.

His conclusions in regard to nephrotomy are, that the operation affords relief in many cases, and that radical cure may follow its performance in some rare instances. In this connection, he cites the case of a child upon whom Guyon performed a nephrotomy six months before, and whose general and local conditions showed such remarkable improvement that a permanent cure is looked for.

He considers nephrotomy indicated when the patient is suffering, is losing ground, and when both kidneys are affected.

The success of the operation depends upon the manner of its performance. It is essential to open freely *all* pus cavities, and to remove, so far as possible, all cheesy masses; to drain freely; and to suture the edges of the renal wound to the lumbar incision, so as to allow the interior of the kidney to be easily cleansed and dressed. If these steps are not taken, the operation is useless.

The following figures are given in regard to nephrectomies:

(1) ABDOMINAL.

Tuffier	11 cases,	mortality,	26.3%
Facklam	13 "	"	30.0%
Vigneron	19 "	"	26.84%

(2) LUMBAR.

Tuffier	45 cases,	mortality,	28.2%
Facklam	75 "	"	28%
Vigneron (primary) . . .	65 "	"	40%
Vigneron (secondary) . . .	20 "	"	35%

Vigneron accounts for the higher rate of mortality in the series of cases which he has collected by the fact that it includes a larger number of cases operated on in the earlier days of nephrectomy, when the technique of the operation was less perfect.

The author urges secondary nephrectomy rather than primary, and considers that if it is so done the mortality is much less than with primary nephrectomy. The best time to choose is a few weeks after a nephrotomy, as soon as the general condition of the patient has improved.

Nephrectomy should be considered only in those cases in which the disease is unilateral. Vigneron considers that renal palpation and the endoscope will, in most cases, make a decision in this respect perfectly possible.

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

JAMES J. MINOT, M.D., SECRETARY.

Stated Meeting, Saturday, October 28, 1893, Dr. A. L. Mason in the chair.

Dr. C. F. Withington read a paper entitled

MEDICAL TEACHING IN GERMANY.[1]

Dr. J. C. Warren: My experience dates back twenty-five years, and it is interesting to me to hear what is going on abroad at present in medical teaching, and to see what kind of impression it makes upon my mind as compared with what the teaching of that time made. Twenty-five years ago I went abroad as a graduate of the medical system of teaching in this country, and I had that as a standard to gauge what I saw there. In making a comparison to-day, I feel that there is not that tremendous superiority which existed at that time. At about that period there was a grand exodus from this country to certain parts of Europe. It seems to have gone by generations. At the beginning of the century Edinburgh or London was the centre of medical learning. During the first quarter of the century Paris was the great centre of medical education, and our fathers went there. About the time when older members of the present generation began to finish their medical education there was an increased exodus to Europe from this country, and it was stimulated by the rising reputation of the German universities. That set of men brought back to this country what there was of best in the methods of teaching in Germany at that time. The Germans always used to say to me, as they did to other Americans at that time, that the Americans were very practical; and I think we fully deserved that opinion, because we assimilated with our usual adaptability all the good things we found, and brought them back and grafted them on American soil; and I think we have now the product, I will not say the finished product, but a pretty thoroughly elaborated product, to compare with the mother universities. I feel that we can look perhaps with a great deal of pride upon the result. I do not think we appreciate what strides the best schools in this country have made in the progress of medical education. I had it impressed very strongly upon me at the Pan-American Medical Congress in Washington this summer, when the guests from the southern part of this hemisphere were invited to see what we were able to show them in the United States in the way of medical sciences and of medical education. It came over me then that insensibly during this period of time the best schools in this country have been improving wonderfully. Among those schools I may mention Harvard, the College of Physicians and Surgeons in New York, the University of Pennsylvania, Johns Hopkins; and I dare say there are others. I had this also impressed upon me, that the institutions I have named are pretty universally conceded in this country to be the leading institutions, and are looked upon with pride not only by the graduates of those institutions, but also by the medical profession at large of this country. They take a just pride in the progress those institutions have made.

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[5] Langenbeck's Arch. fur Klin. Chir., Bd. xlv, p. 715, 1893.

[1] See page 585 of the Journal.

The question comes, How far have we developed? Have we the right to consider ourselves equal to either of the three geographical centres of learning which I have spoken of? There is, I think, very little doubt that we are fully equal, if not superior, in our methods of teaching to the universities in Great Britain; and I find that this is a pretty common opinion amongst those who are familiar with the subject. The examinations which are required of one who wishes to obtain a license to practise in Great Britain are higher, perhaps, than in most of the medical schools in this country, but we ought to remember that they do not represent the teaching that is done there. The examinations are far above the teaching that is given in the English medical schools. They have to be prepared for especially by a sort of cramming process. There are coachers who prepare one for medical examinations in Great Britain. We all know in a general way that the medical schools of London are composed of the staffs of the various hospitals. They have magnificent hospitals in London, magnificent material, but their organization must necessarily be far below that of such a great university as Dr. Withington has sketched. There are no such great laboratories and places for investigation, and no such massing together of great names. The teachers in London are scattered; their work is not in unison; their separate schools divide up into a great number of little schools; and I do not believe the instruction is as good as it would be if in the hands of one or two great universities. To be sure, there is a great university at Edinburgh that has a far larger number of students than any in this country. The same principle, however, I think, prevails there; and I doubt if the average student gets anything like as systematic an education as in the best schools of America. In regard to Paris, I do not know how much the system has changed under the republican government. I doubt if there has been any change. I must say the system which I saw there was very unsatisfactory indeed. The opportunities for an advanced student were far inferior to those which existed in Germany. There are certain special branches in certain parts of France which are rich in splendid material, and I have no doubt, if a person wishes to study a certain subject, he might go to certain parts of France and have opportunities that, perhaps, might not be afforded in Boston or in New York even. We all bow down still to the power of German science. We are still under its sway. That is the Mecca of to-day, but I am not sure that it is going to remain so for any great length of time. I doubt, and I think Dr. Withington's statement confirms my doubt, whether the average student really gets, after all, a better education during his four years in Berlin than he gets in Boston or in Philadelphia. I think Americans, with their practical methods, have wonderfully systematized the teaching in all the specialties of medicine, and also have wonderfully improved the preliminary instruction, the laboratory work; and I feel pretty confident that the standard which we provide for the average student of to-day is nearly of as high quality. When we come to the advanced instruction, we have as yet hardly any centre which can compare with a great centre like Berlin, where there are so many brilliant scientific lights still presided over by the genius of Virchow, giving to it a prestige which he is able to keep up to its present point of greatness; and I have no doubt that in certain branches of medical science it is far ahead of any other part of the world, but I should not say it was in all. I should not wish to particularize, partly because I do not know. I think there is little doubt that we are gradually equalling them in many departments; I do not see why, with the phenomenal increase of this country in material prosperity, we should not be able to surpass them in the beginning of another century; and I do not think it is being too enthusiastic to predict that the early part of another century will find the centre of medical education in an entirely different quarter of the globe from what it has been in before.

Dr. F. C. Shattuck: I am very glad to have heard Dr. Withington's interesting and valuable paper. It is profitable for us now and then to take account of stock, as it were, to see where we are absolutely and relatively to those to whom we have been accustomed to look up and to whom we still look up. In so doing it seems to me that we can fairly feel encouragement. There has, of course, been advance on the other side of the water with the advance in knowledge. With this advance we have kept apace, but we have also greatly improved our methods of and facilities for instruction, and we note a very real increase in what is demanded of those entering medical practice. Formerly it was impossible to get a really good medical education in this country, and the attainments and achievements of many Americans in medicine and surgery during the early years of the century are evidence of American intelligence and of the practical turn of mind of which Dr. Warren speaks. The result is in striking contrast with the paucity of means. At that time a few men went abroad for their whole medical education. Gradually many began to go for clinical advantages, as medical education here was chiefly a matter of didactic lectures, and the only chance for clinical work was in the private practice of the preceptor. Hospitals were small, as was the number of those requiring hospital care, and these hospitals were not intimately connected with medical schools. Ample clinical facilities are now offered in this country in many schools, and the rapid development of laboratories of all kinds is meeting the demand. I was glad to hear Dr. Withington say that, in his judgment, the advantages of Europe to-day are rather for practitioners than for less advanced students. I was somewhat struck to-day by a conversation with a very excellent hospital interne. I asked him about his plans for the future, whether he should go abroad, etc. He said he expected to go, but not to study medicine, as it seemed to him that he could get everything here if he went to work in the right way. I do not mean to say that I entirely endorse this opinion, but I am sure that he would not have spoken so even ten years ago. With reference to clinical instruction, I was much interested in what Dr. Withington said about the methods of undergraduate teaching pursued in the German universities, the predigested pabulum given to the students, the limited opportunity to train their powers of observation. This seems to me a serious defect. The English schools have their defects, as Dr. Warren has pointed out, but they have one great merit. The hospitals and schools being most intimately associated, as they are, every student can and must serve terms as clinical clerk and dresser in the wards, thus coming into close contact with the disease. It is to be hoped that clinical teaching in this country will develop along English rather than German lines, though we should aim to adopt what is best in both.

DR. D. W. CHEEVER: I should like to say a word, principally of retrospect. I think it is, as Dr. Shattuck has said, very much to the credit of American life and American institutions that in the early days of our country, after the Declaration of Independence, for the first twenty-five or thirty years, so many men of distinction in medicine and surgery did arise in this crude region where there were no opportunities, where the doctor had to make his own clinic, where he had to seek with great peril for every anatomical research, and where he had to develop entirely the characteristic of self-reliance in practice, and especially in surgery. Some noted things were done in surgery in the country fifty and seventy-five years ago, which have never been surpassed; so also some discoveries were made in medicine. At that time it was the exception for any one to have the means to go to Europe to study; and I fancy that those who studied with Abernethy and Sir Astley Cooper could be counted on the fingers' ends. Certainly I recall only two or three gentlemen in Philadelphia and Boston who came back after the facilities and the advantages of foreign study; and they easily took the first place in this continent, and carried on the advance of medical knowledge. I belong myself to that period which studied in France. What I had not learned in Boston I got in Paris. I lived there some length of time. At that time the advantages there were these: immense anatomical material (which was very scanty here), so that there one could study anatomy at will; in addition to that (and which grew out of it), very fine instruction, in operative surgery. The French had easily surpassed others for a good while in mechanical dexterity in surgery; and the opportunity for operative courses in Paris was enormous. In fact, it was only limited by the purse of the individual; and even so, the expense was not very great. In addition to that there were great clinical facilities, of which there were absolutely none in Boston except those afforded by the Massachusetts General Hospital, which was then much smaller than now. Clinical teaching in the amphitheatre in the course of operations was almost unknown at the time I was a student. Very little was said. A thing was said to be a cancer and was cut out, and a limb said to be crushed and cut off; but no amount of teaching in explaining the details of operation. Of course, the contrast when I got to Paris was enormous in the amount of clinical material and in the enthusiasm of teaching. But the great fault of Paris at that time, and I am sure that it is still so, was that the facilities were scattered — the hospitals miles apart, the great men scattered about in different hospitals. You had no concentration of opportunities. You were obliged to go a great distance to see skin diseases, another great distance to see diseases of women, another great distance to see surgery; you wasted time in locomotion and fatigue. It has always seemed to me with regard to the English schools, having twenty years afterward visited London and seen some of the best men there, that wherein they excelled was in individual teaching. You get individual teaching in England. I dare say you get it in Edinburgh. You get individual teaching from the fact that the schools are small; you are in close contact with the teachers, and have practically clinical instruction very much as if you were with a single practitioner and seeing his cases and seeing all his work. The great loss of time, however, in London to the stranger is in the fact that the hospitals are scattered, and there is no great centre as there is in Vienna and Berlin; but in those two or three great cities the advantages must be unequalled for saving time and for seeing everything, and for finding everything you want in the same place. Now, with reference to Boston, I, of course, share with others in the appreciation of the fact that we have improved a good deal in medical teaching; and I think one reason why we are advancing so fast in clinical facilities is from the change in our population. We get an immense foreign population of the poorer class. They go to hospitals, submit to hospital discipline, are less fastidious about being shown and being made clinical material of. There is less prejudice against hospitals and autopsies than formerly. At the City Hospital there are many more autopsies than formerly, and we have an immense *clientèle* to draw from. The change in the language and habits of these people is enormous. The institution has become practically polyglot; you need five or six languages to know what you are about. This class of people — comprising Swedes, Italians, Russian Jews, Poles — are poor people; they seek hospitals. This, I think, is why the City Hospital has grown out of proportion to the city; and is becoming, perhaps, a large burden upon the tax-payers. But this is going to give us precisely those opportunities for concentrated clinical instruction which I think will end in making Boston, by and by, a metropolitan centre for medical knowledge.

Dr. J. C. White: I have listened to the paper with a good deal of interest. I suppose Dr. Withington's remarks will apply chiefly to graduates who go abroad to study. I think we sometimes talk in an unwarranted manner of foreign schools, when our personal experience is chiefly limited to the graduate courses, which are given at them. For our clinical teaching at home we have good hospitals, and those hospitals have good staffs, which are largely composed of teachers in the Medical School, but the remarks that have been quoted here as coming from young men, apply to those favored ones only who receive hospital appointments, but these are exceptional instances. The great majority of our students do not have such facilities at all, and they will not get them in my opinion until schools have their own hospitals and can apportion the term of interne service to every student fairly and evenly. Our hospitals now give a few students eighteen months to two years of such advantage. That same period might be divided among four students with great advantage to the class as a whole, that is, four times as many students could be receiving proper education in the hospitals. In other words, it is the managers of the hospitals that control the time of service of students, it is not under the control of the schools at all. The few men who have these privileges get advantages they could not get in the same time abroad it is true, yet that is no way to measure the clinical teaching that every student receives here.

I do not wholly agree with what Dr. Warren said with regard to the French school at present, I think it has grown immensely within the last few years, in many ways. It has given up its old method of complete satisfaction with itself which the Vienna school still largely retains. The latter can be said to be scarcely growing at all in some ways. The reason is that the French teachers no longer look upon French medicine as a national school by itself. It is medicine in general which they are studying, and some of the greatest teachers in France at this time are going to school; having their laboratories where they work and teach their students every day. The most notable feature in foreign schools at the present time is this great change that has taken place in the method of their teaching; the renunciation of sectional doctrines, the cultivation of a broader, international spirit.

Dr. E. W. Cushing: It seems to me that Dr. Withington's paper, in the tone of it, hardly does justice to the spirit in which medicine is studied and taught in Germany and in Berlin. I have nothing to say in regard to the methods of undergraduate study as they are there and here. My education in America was many years ago. All the more complete part of my education I got in Germany. A system must be judged somewhat by its fruits. Whether the Gymnasium or the Realschule is the best training for students is to be seen by the clinical teaching of the foremost men that grow out of it; and Germany can show that that is a good way to breed great teachers and students and workers. Leaving out of consideration the great teachers, I have noticed on many occasions that on almost any subject connected with medicine there was a certain profundity of erudition, a certain thoroughness of training in students, both in Germany and in France for that matter, training in the details and fundamentals which did not seem to obtain in this country. The main difference, however, in the facilities for studying in Germany and here, is in a system which does not obtain to any great extent in this country, and I think could well be introduced, although I am not posted particularly in medical teaching, that is, that the students can go to whatever university they like and have their time credited. If a student in Berlin thinks he cannot get enough clinical material, and wants to go to Vienna, that time is credited. In that way he can pick out his teacher and his place of living, spending his four years to his own best advantage. Also there is a very elaborate system by which the teachers are moved about. When I was in Berlin, we will say in 1885, Schroeder had an assistant who was then completing his term of five years; then he became professor in Halle, then in Göttingen, now he is professor at Würzburg, and finally he may get back to Berlin. That is the only way in which a clinical teacher gets ahead; and all the best physicians finally get back to Berlin, whereas a man who will not leave Berlin and devote his life to be a teacher, will not get to be professor. In that way the government of the great universities have the pick of the whole country, and there is a regular rotation by which a man starts in life with the idea of being a teacher. The government gives recognition of that spirit, encourages scientific research. After the last French war, when Berlin was established as capital of the German Empire, the government tried to make that the centre of the empire and of the world, if possible; to supplant Vienna and have Berlin the intellectual head of the kingdom; to draw the educated youth of the country to that place, and not by force, but in such a manner that no professional man could feel that he could afford to enter on his profession without going to Berlin. To that end vast sums were spent in building the finest hospitals of the world and in equipping and supporting them, as a political measure and as a measure of aggrandizing the new capital. I have just had an opportunity of going about to see the hospitals of this country; and I am free to say there is no such hospital in this country as the new one in Berlin, Am Urban. The government and society protects and respects a man as a teacher apart from his making any money out of his position; and although that feeling is growing in this country, and must grow a good deal before it will be comfortable for a medical man to devote himself to science as apart from money making. If he tries to devote himself to science, some older and shrewder professional friend comes along and says, "Don't bother too much with pathology; you can hire a pathologist for five dollars. If you work on science, people will think you have no practice." But with the support of the government, the recognition of a whole great circle of scientific workers, who are aiming to be teachers without obtaining a great practice, goes to breed a spirit of zeal for scientific work in itself which has developed in this country very much in the last ten years. Whether by the beginning of the next century it is going to eclipse Germany I very much doubt; but the zeal for science, the seeing of very thorough work in any one department, is what a graduate going to Germany can find. The vast aggregation of clinical material, the ease of following out the instruction in any one department, is what he can get in Vienna. He can study one thing all day in Vienna. If he knows what he wants to study, he can lay his day out and study that one thing.

If he wants to study all sorts of things, he can do that also. I think if a man has had his hospital course here, and wants a year of post-graduate course, he will do better in Vienna, on account of the ability of choosing what he wants to do and of being able to pursue any particular line of study. In Berlin he can find the highest possible development and thoroughness in any one study; especially in the subjects of surgery, gynæcology, bacteriology, there is a perfection of technique and a completeness of equipment hard to find elsewhere. I dare say the same may be true of other subjects which have not come under my immediate observation. I will close by saying, that everywhere in Germany, Austria, France and Italy, I have had to admire the zeal and erudition of the teachers, their interest in their subjects, and the kindness and courtesy with which foreigners in general, and I myself in particular, have received information, facilities for study and civilities of all kinds, in such a way that, I, for one, feel under deep obligations to the teachers of those countries.

Dr. Withington: I did not say anything in the paper about the instruction in England; but as that has been referred to, I will say that I think we have nothing to be ashamed of in our best medical schools as compared with London. In one respect they have the advantage, and that is that their examining boards are distinct from their teaching boards. With such a stiff series of examinations they cannot afford to let their instruction drop very much below what it is at the present time. As regards comparison between results of our own schools and those of Germany, one thing ought to be borne in mind, that while we may contemplate with a tolerable degree of satisfaction the comparison between our *best* schools and the best schools of Germany as far as undergraduate work is concerned, yet that no such comparison can be made between the *average* medical schools of our country and those of Germany.

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THE NEW YORK NEUROLOGICAL SOCIETY.

Stated meeting held at the New York Academy of Medicine, Tuesday evening, October 3, 1893, Dr. M. Allen Starr, President, in the chair.

MEMORIAL OF PROFESSOR CHARCOT.

This paper was read by the President. The author gave a brief sketch of Charcot's life, and reviewed the work of the great neurologist. Prof. Jean Marié Charcot was born in Paris, on the 29th of November, 1825. He was the son of a wagon-maker, a man of such limited means that he was not able to give all his children an education. Jean Marié received his early education at the Lycée St. Louis, at that time the best academy in Paris. After his preliminary education was completed there, the choice of the medical profession was made not without some hesitation, for the inclination of the young man was for the life of an artist, and it was possibly the lack of means which finally determined him to take up medicine. After passing through the medical school and serving as an interne in La Salpétrière — an alms-house for old women, then almost unknown, but later to become famous as the seat of his wonderful activity — he took his doctorate degree in 1853. For the next three years he served as chief of the medical clinic in the medical school, supporting himself meantime by giving private lessons. He was then appointed physician to the Central Bureau of Paris, on a moderate salary. In 1860, after passing a rigid competitive examination, he became entitled to a hospital appointment, and two years later he was able to select the service at his old hospital, La Salpétrière. He found a large number of old people collected together in this poor-house, many of them suffering from chronic incurable diseases. He had the opportunity to watch the progress of disease, both acute and chronic, in old age; and, most important of all, he had unlimited pathological material to complete his clinical observations. It is to this latter fact that he owed the beginning of his reputation, for at that time pathology was just beginning to reveal the true reasons for disease. By the careful study of his cases, by his power to seize upon salient features which gave points for differentiation, by his persistent following of cases from the ward to the autopsy-room, and by the exhaustive study of the material collected there, he began to reach conclusions and to arrive at facts which were veritable discoveries in the medical world. The articles written by him between 1860 and 1870, each of which adds a distinct fact, observation or conclusion to the sum of medical science, soon began to attract attention; and the young physician found his rounds beginning to be attended by students who liked to watch his careful study of cases or see him demonstrate the lesions which he found. In 1866, a small room in the hospital was set aside for the purpose of instruction, and he began to hold clinics and to lecture. The lectures were soon crowded by graduates in medicine, and the next year he was invited to give an open course of lectures at the École Practique of the medical school. Here he had an opportunity to cultivate the power of teaching, and soon showed that wonderful facility of clear, direct statement and power of graphic illustration which later made his lectures the most attractive in the world. His first open course had for its subject cerebral hæmorrhage and softening. In subsequent lectures he discussed the clinical and pathological differences between paralysis agitans and multiple sclerosis: the arthropathies, which have since been known as Charcot's joint disease; trophic disturbances following cerebral and spinal diseases, etc. Thus within four years he had risen from the position of an unknown teacher to the position of one of the best lecturers in the Paris school.

In the year 1870, all female epileptics and hysterics who were not insane, were transferred to La Salpétrière. This afforded Charcot new material for study; and in 1872 the study of hysteria in its multiform manifestations became one of his duties. The same year he was appointed Professor of Pathological Anatomy in the Faculty of Medicine in Paris, the highest prize in the French medical world. In 1882, a Professorship of Nervous Diseases was founded in the medical school, and Charcot received the appointment, with the establishment of a public clinic at La Salpétrière. From that time to the present year his annual courses of lectures have been attended by students of medicine from every land; and it may be truly said that few men of eminence at present living and working in neurology have not drawn inspiration from his model clinics.

Charcot's collected works will fill fifteen large volumes. He was also instrumental in founding a number of medical journals. His three volumes of lectures, published from 1872 to 1880, have had an immense sale. Public recognition of Charcot's abilities and eminence was not wanting. He had been president of all the chief medical societies in Paris, was corresponding member of numerous societies abroad, among them being the New York Academy of Medicine and the New York Neurological Society; he was made a Member of the Institute of France in 1883, and Commander of the Legion of Honor in 1892.

Charcot's investigations in hypnotism have attracted much attention, both from the profession and from the laity. It is difficult for any one to enter upon the study of this subject, or to pursue it with any degree of thoroughness, without exposing one's self to adverse criticism and remark. It is difficult to estimate the true value of this department of Charcot's labor, but it cannot be denied that all through the years which he devoted to this study his mind has been imbued with the purest scientific motives, and that facts, not theories, were his aim.

Another criticism which has been offered is, that in his scientific zeal, he neglected therapeutics: that his interest in patients ceased with the diagnosis. Those who make these statements must surely forget that our best methods of treating functional and hysterical nervous diseases, namely, the electrical and hydrotherapeutic methods, were successively developed and successfully employed by Charcot.

Charcot was a man of great dignity, of calm, even temper, of slow thought and utterance, but of much reserve power. In appearance like Napoleon, and in manner reserved and observant, he was not the type of man to be popular. With patients suffering from trifling affections he showed no sympathy; probably no interest. With patients whose diseases were severe or obscure or of a rare type, he was kind, attentive, interested, and was ready to spend valuable time in most careful investigation. His relation to his pupils was also one of mutual interest and affection. He was never familiar with them, yet he always respected and sought their opinions, was never autocratic in the direction of their work, and was always the subject of their devoted admiration and respect. His family life was a delightful one. He was married early in life to a lady of considerable wealth, who was enthusiastic in his work, and by whose aid many scientific undertakings, otherwise impossible, were carried through. He had two children, one a boy, whom it was his fond desire to see succeeding him as a physician, and who gives promise of being worthy of the name. Charcot, like every man of eminence, had his enemies — critics in science — rivals in medicine; yet, after all their criticism is exhausted, we must admit that he remains the greatest French physician since Trousseau, and the greatest ornament of the profession of the present age.

At the completion of Dr. Starr's address, Dr. E. C. Seguin gave a few personal reminiscences of Professor Charcot. He referred to the generosity of the great physician in placing at the disposal of his students his abundant material and the use of his laboratories, and in allowing them to receive the full credit for their labors, instead of appropriating it to himself. Many of Charcot's pupils, Bourneville, Bouchard and others, have been helped by him in every possible way to attain honorable positions. In disposition he was quite different from the popular idea of the Frenchman. He was not quick, nor hasty nor mercurial. Every thought was carefully matured, and he collected his material for a long time before reaching or publishing his conclusions. He was averse to theorizing. He was a close analyst and a devoted follower of the induction method in reaching conclusions. Primarily, Charcot was a pathologist, and his reputation will always rest on his achievements in this field of medicine. His work in hypnotism, by which he was greatly fascinated, can only be regarded as a mere fragment — a digression which in the future will count as nothing.

A CASE OF GENERALIZED PARESIS ENDING IN COMPLETE RECOVERY,

by Dr. E. C. Seguin.

The history of the case is as follows: The patient was a boy aged thirteen years, who was brought to Dr. Seguin in October, 1886, for an opinion as to the nature and prognosis of a singular condition of increasing muscular weakness, which had come on during the preceding eighteen months. The boy's family history was fairly good. His mother was of a nervous temperament and for a few months had been addicted to the chloral habit. Out of six children only one other, a sister, had had a nervous disease, namely, a mild chorea extending over several years. There was no trace of muscular disease, atrophic or distrophic, in the family. The patient's history, previous to the onset of this disease, was negative. At the age of six years he had a severe attack of albuminuria, which left no traces. In April, 1886, he had what seemed to be a mild attack of articular rheumatism. He was a very active and daring boy, and had numerous falls, none of which, however, were followed by serious symptoms. There was a history of masturbation, carried on for several years. There was no history or evidence of metallic intoxication, nor at any time was there any indication of hysteria. The only positive causative element in the case was the self-abuse. This practice, the boy stated, he had given up in the spring of 1885, when he himself noticed that he had slight difficulty in articulating his words. Five months subsequent to this the boy's symptoms were first brought to his father's attention by the fact that he twice fell out of the saddle and by his suddenly dropping the oars in a boat and acting as if paralyzed for a few minutes. Even before that, it was recalled, he had become rather awkward in buttoning his clothes and in using the knife and fork, and that after reading aloud for a few minutes his articulation became thick. Very gradually he lost his energetic ways and became awkward in everything; his attitude had changed so that he stooped, the neck hanging down and the abdomen protruding. His facial muscles lost much of their expression and his laugh was constrained and unnatural. All these symptoms developed and progressed very slowly during the years 1885 and 1886. The boy was subject to "sudden collapses," as his father called them, characterized by the sudden loss of control over many muscles, resulting in falls or in dropping objects from the hand. These last-named symptoms suggested petit mal, but this affection was excluded after careful observation. The symptoms were entirely of a motor order; no numbness, no anæsthesia, no neuralgia, no psychic or trophic symptoms. All his organic functions were normally performed; nutrition was good. The eyes were normal. The legs were apparently strong, and the boy could rise from the dorsal recumbent posture on a flat couch and also from a squatting posture, but these acts were done feebly, slowly and with great effort. The spine was not tender and presented no deviation, excepting an antero-posterior one. Local paresis of the muscles was demonstrable only in the extensor group of the right forearm. No muscles showed atrophy or hypertrophy. The knee-jerk was normal. No sensory symptoms, excepting a sense of fatigue in the muscles of the lips and tongue, as well as those of the forearm on exertion. On electrical examination the reaction of the nerves and muscles to both currents was normal. The sexual organs showed no visible signs of masturbation. Grasp on dynamometer; right hand 11, left hand 16.

The above were the facts of main importance elicited at the first examination made by Dr. Seguin in October, 1886. The boy remained under his care from that time on for about two years, during which period he decidedly improved in motor power and skill, and his height increased by six inches. The treatment from the first, in the absence of any possible pathological diagnosis, consisted in the systematic, long-continued administration of tonics, such as the bichloride of mercury, phosphorus, arsenic and strychnia. At the same time, a mild faradic current was applied systematically every day. Also, from the first, a cold sponge bath was ordered on rising or at bed-time, followed by a thorough dry rubbing and a manipulation of all the muscles. Another part of the treatment consisted in gentle gymnastic movements of the hands, arms, trunk and legs.

The case was lost sight of by Dr. Seguin from the close of the year 1888 until September of the present year (1893), when on inquiry, he received a letter from the boy's father stating that his son is now in the junior class at college, that he stands well in his class, and excels in wrestling and other athletic sports. The treatment advised by Dr. Seguin had been faithfully carried out for nearly three years longer by the father, followed by a gradual, but continued, improvement in the boy's condition. His weight at the present time is 166 pounds. Circumference of chest: expiration, 33 inches; full inspiration, 39 inches. Circumference of waist, 31 inches; of mid-thigh, 22 inches; of biceps, 13 inches. His endurance is good and he is able to raise from the ground an iron rail weighing 600 pounds. His grasp on the dynamometer at present is, right hand, 72; left hand, 53. This, Dr. Seguin said, is the strongest grasp he has ever met with.

DR. B. SACHS said that in listening to the first part of Dr. Seguin's paper — before it told of the boy's remarkable recovery — the case reminded him of a primary muscular dystrophy, of the facial, scapular, humeral type, with perhaps some extension into the lower extremities. Such a case has recently come under his observation, with many symptoms very similar to those narrated by Dr. Seguin. In cases of progressive primary dystrophy, particularly in pseudohypertrophic conditions, he has seen marked temporary improvement following treatment, although he has never observed a complete cure. Again, in Dr. Seguin's case there might possibly have been some nuclear trouble, with a mingling of symptoms pointing to the spinal cord or medulla. If the case was one of primary muscular dystrophy, the question arises whether the cure will be a lasting one. He has seen a number of cases with a condition of pseudo-hypertrophy, in which the muscular tissue first enlarges and then rapidly atrophies.

DR. GEORGE W. JACOBY suggested that Dr. Seguin's case might have been one of poly-myositis ending in complete recovery, and followed by a secondary hypertrophy of the muscles, which now exists.

DR. J. F. TERRIBERRY stated that it was against the laws of pathology to assume that an inflammatory process in the muscular tissue is followed by hypertrophy of the muscle, with increased force.

DR. E. D. FISHER said that when we take into consideration the fact that the boy grew six inches taller while he was under Dr. Seguin's care, the lesion was probably not a spinal one.

The discussion was then closed by DR. SEGUIN. He stated that the suggestion made by Dr. Sachs with reference to the possibility of curing a case of muscular dystrophy in its early stage was an interesting one; he was not prepared, however, to advance the case as an instance of that disease. Neither did it resemble a case of myositis. There was no pain; there was a general weakness, which was sometimes so pronounced that the boy was unable to hold objects in his hands, or he would lose all control over his muscles and fall to the ground.

Recent Literature.

Naphey's Modern Therapeutics, Medical and Surgical including the Diseases of Women and Children. A Compendium of Recent Formulæ and Therapeutical Directions from the Practice of Eminent Contemporary Physicians, American and Foreign. Ninth edition. Vol. II, General Surgery, Gynecology and Obstetrics. By ALLEN J. SMITH, Professor of Pathology, University of Texas, Galveston; late Assistant Demonstrator of Morbid Anatomy and Pathological Histology, and Lecturer on Urinology, University of Pennsylvania; and J. AUBREY DAVIS, M.D., Assistant Demonstrator of Obstetrics, University of Pennsylvania; Assistant Physician to Home for Crippled Children, Philadelphia. Philadelphia: P. Blakiston, Son & Co. 1893.

The volume which we have before us has passed through nine editions, which is an evidence that it fills a need in the community. The views of authors have been collated by the compilers, but in many instances are diametrically opposed to one another, and the reader is allowed to select for himself and adopt the view which strikes his fancy. Many of the authorities quoted we are not familiar with. There can be no doubt but that the book contains a great deal of useful information; and, as a whole, we can only congratulate the authors on the accomplishment of a work so satisfactory.

Reactions. A Selection of Organic Chemical Preparations Important to Pharmacy in Regard to their Behavior to Commonly-used Reagents. By F. A. FLÜCKIGER, Ph.D., M.D. Translated, revised and enlarged by J. B. NAGELVOORT. Authorized English edition. Detroit: George S. Davis. 1893.

This volume is a revised and enlarged edition of the German text. It contains the results of Professor Flückiger's researches upon more than one hundred organic pharmaceutical preparations, to which the translator has added, in many cases, the results of his own experience. The book is of special interest to the pharmaceutical profession, and will be very useful.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 14, 1893.

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EPIDEMIC INFLUENZA.

THE reports of a threatening epidemic of influenza, which have been published during the past two weeks, have been most alarming. So far, they have been almost entirely confined to the daily press, and have served a most useful purpose in making startling and vendable items for the metropolitan Sunday papers.

There has undoubtedly been a return of the disease to some extent abroad, especially in England and some parts of Germany. The number of cases reported in London is said to have doubled during the last month, and over thirty members of Parliament were reported as ill at one time with that or some allied disease. On the Continent the epidemic is said to be even more marked, not being confined to political gentlemen. In the Upper Rhine and Main regions it approaches the virulence of the plague, and a fifth of the whole population of Hesse-Darmstadt is reported down with it. Parliamentary work at Vienna ten days ago was at a standstill because all the officers of both houses were suffering. In Berlin, also, the type of the disease, which is fast becoming general, is said to be more severe than in former epidemics. The alarming nature of their report is somewhat mitigated by the continuation of the account in one of these letters, which says: "Its latest form differs from the Russian variety. The disease is not so dangerous or prolonged as the more familiar grip, but is more infectious. It is almost like measles in this respect. The victims include all classes."

The London *Lancet* of December 2d makes the following statement in regard to influenza:

> "There seems a strong tendency to a pretty wide diffusion of the disease in the metropolis. The attacks are not serious or fatal [illegible], but they are very typical [illegible] characterized by abrupt onset, a sharp pyrexia, generally subsiding in a day or two, unless complicated with catarrh, which is not always the case. It is decidedly infectious, in some houses almost every member being affected."

From the *British Medical* of the same date, we take the following:

> "Reports which reach us from our correspondents show that influenza in epidemic form continues to prevail extensively in the neighbourhood [illegible] South Wales. [illegible] Birmingham [illegible] Manchester, Blackburn [illegible] that, [illegible] in a [illegible] office, [illegible] during the [illegible] The mortality [illegible] than 90 deaths were due to diseases of the chest. In this epidemic again the large towns appear to be the foci of infection, which spreads [illegible] districts. The epidemic continues to be severe in Berlin, while in Frankfort and Hesse it is said that 20 per cent. of the inhabitants are suffering. In Posen and East and West Prussia, the epidemic is very prevalent, so that in some places one-fourth of the workmen are off duty. It is spreading also in the suburbs of Hamburg, and is present in Lubeck."

It will be remembered that in the first great outbreak of recent years, that of 1889, influenza declared itself with us in a violently epidemic form about ten days before it developed or was reported as epidemic in London or England.

The occurrence of some undoubted cases of influenza has been reported from Chicago and New York. The returns of the daily press from St. Joseph, Mo., reported 400 cases in three days a week ago, and at Denver, Col., we were told it was then even more prevalent than in 1891. It will, however, be time for a general alarm to be issued when the reports so far published have been confirmed by competent medical advices, which as yet we have not received. Careful inquiries among practitioners and at the hospitals fail to elicit any facts tending to show the presence of any unusual form or degree of influenza in Boston or its vicinity at the present time, although some medical men report having seen individual cases, and a few speak of having seen families afflicted with the disease.

It is to be hoped that the reports will be found to be exaggerated, and that the community will be spared another epidemic. For epidemic influenza is even worse than epidemic foot-ball; it is rougher and more dangerous.

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THE ADMINISTRATION OF HOSPITALS FOR THE INSANE IN NEW YORK.

THE laws of New York and Massachusetts have placed those States in the foremost rank of intelligent and liberal care for the insane. The enactments regulating the commitment to asylums, and the care while there, of the insane, and especially the State Care Act of New York, have been in the main wise and beneficent. They are chiefly due to the persistent efforts of the State Board of Charities, and especially of Mr. Letchworth, Chairman of the Board, and Mrs. Lowell, and to the excellent administration and advice of Dr. Stephen Smith, the former Lunacy Commissioner.

The essential points of superiority in the New York system are (1) the control of the hospitals by an unpaid board of managers free from personal and political motives; (2) the appointment of medical officers by merit and not through political favor; (3) the maintenance of State hospitals at a high grade of excellence for the curable insane and for those needing hospital care; (4) the removal of the chronic and pauper insane from poor-houses, jails and county asylums to inexpensive buildings under the supervision of the officers of the hospitals, with the establishment of farms or colonies for such of the insane as do not need much medical care, where they can be treated as nearly like sane and industrious people as possible.

The weak point in the New York law is that a plan for centralizing in a State Commission power as to details of management of the hospitals, which was overwhelmingly defeated in the Massachusetts legislature, has become part of the New York statute, and that the Lunacy Commission, which ought to be a purely supervising and advisory board, has executive functions which are not only needlessly vexatious to the hospital managers and medical officers and prejudicial to the interests of their patients, but also may be destructive of good morals. Moreover, the law is in danger of making a corrupt political machine out of what ought to be a philanthropic and unselfish body.

There are indications that what was feared has happened, and that the Lunacy Commission, which it is possible to construct into part of a great party machine, has made the enforcement of a bad law even worse than the law itself. The managers and medical officers of the hospitals for the insane have taken courage from the political upheaval in favor of good government in their State, and are attempting a reform, in which we wish them every success.

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MEDICAL NOTES.

The Revolt of the Brazilian Medical Staff. — The entire medical staff of the Brazilian navy, which has been loyal up to the present time, has joined the forces of the insurgents and placed itself under the orders of Admiral Gama.

A New Journal. — A new journal, devoted to diseases of children, has recently appeared in France. It is entitled the *Journal de Chirurgie et de Thérapeutique Infantiles*, and is edited by Dr. Variot of Paris.

Cholera. — There has been a decided increase in the cholera in Constantinople during the last two weeks, over thirty new cases occurring daily. There have been several deaths from the disease in Tripoli. In Russia there has been, on the whole, a diminution in the number of cases. In Italy a few cases occur from time to time in Leghorn, Genoa and Naples; but the epidemic is practically at an end in these cities. The outbreak in England, which was speedily checked, has not recurred and no cases have occurred since the last report.

Yellow Fever. — The yellow-fever epidemic at Brunswick is practically at an end, no cases having occurred since November 23d. The quarantine camp was closed on Thanksgiving Day, and the people allowed to return home. In all there were one thousand and one cases and fifty-three deaths: forty whites, one Mongolian and twelve blacks.

BOSTON AND NEW ENGLAND.

Vaccination and Quarantine of Contagious Diseases among School Children Referred to the Boston Board of Health. — At the last meeting of the Boston school committee, the following order was passed: "That the Board of Health be requested to assume the responsibility of issuing certificates of vaccination required by law, and of passing upon all cases of contagious diseases, determining when children may return to school after such disease or exposure thereto, and giving the requisite certificates: and that the said Board be further requested to include in their estimates for the next fiscal year a sufficient sum of money to enable them to attend to these new duties."

Suicides from Cyanide of Potash. — Since the publicity given the mysterious deaths of the members of the Toole family in South Boston from cyanide of potash, the drug has become a popular one for suicides, three self-inflicted deaths having been due to this drug.

Small-Pox in Boston. — During the last week ten cases of small-pox have occurred in Boston. On December 7th the disease was reported from a family at the South End; and within two days the father, three sons, three daughters and the servant were taken to the hospital. A cousin of the family — a woman — was also taken ill at her home and sent to the hospital. None of these cases can in any way be traced to the cases occurring from the *Catalonia* in October. The cousin came from New Brunswick about a month ago, and was the first member taken ill; but the most careful investigation shows no connection with the previous cases. All these patients had a family gathering about Thanksgiving time, and two of the guests present have also been taken ill with small-pox during the week — one at Somerville and one at Hyde Park. The tenth case in Boston is that of one of the table-girls at the Homœopathic Hospital, who had never been vaccinated, but who has had no discoverable exposure. Of the eleven patients now in the hospital only one had ever been vaccinated, and that one is slightly ill. Of the seven discharged well since October 30th, three had been vaccinated, and were but slightly ill; while the others were seriously ill. Two of the present patients are dangerously ill, and their recovery is considered doubtful.

A New Harvard Record for Strength. — The Harvard record for total ascertained strength, which has been held since 1885 by Mr. S. T. Foster, has been surpassed by a member of the present junior class, Mr. Edward Klein. His total strength, as measured by Dr. Sargent's method, is 1,445 kilogrammes, which is 97 kilogrammes more than the previous record. This total is distributed as follows: lungs, 23; back, 340; leg, 740; upper arm, 201; right forearm, 78; left, 63.

Massachusetts Insane Asylum Reports. — The annual reports of the superintendents of the various State insane asylums are being issued from the office of the Secretary of the Commonwealth. Danvers Lunatic Hospital had at the end of the official year, September 30th, 869 patients, seven more than last year. The report of Dr. Page calls attention to the unavoidable overcrowding at times, which necessitated the use of extra cots in the day-rooms and corridors. "The vital objection to this overcrowding," he says, "arises from the necessary mingling of acute cases with the many chronic patients, which is a serious obstacle to the recovery of the former." The average weekly cost of maintaining each patient was $3.55. At the Worcester Lunatic Hospital there were 886 patients, five less than last year, 439 men and 447 women. The daily average number of patients has been 878.78, the largest within the history of the hospital. The cost of maintenance per patient has been $3.58 per week. At the Worcester Insane Asylum, there were 454 patients, 231 males and 223 females, a gain of five over the first of the year. The average daily number has been 447, or 82 more than the normal capacity of the institution.

Diphtheria at West Newton. — An unusually large number of cases of diphtheria and scarlet fever are reported from West Newton, Mass., there being about twenty-five cases of the former disease and nearly as many of the latter.

Small-Pox in Portland.—A case of small-pox is reported from Portland, Me., the patient, a man of thirty, had been ill for two days in a large boarding-house, which is now under quarantine.

NEW YORK.

Epidemic Diphtheria. — Diphtheria is epidemic at Tivoli, on the Hudson, and one or two adjacent villages, and a large number of deaths have occurred. In order to prevent the further spread of the disease the State Board of Health has enforced strict quarantine regulations, including the closing of all the schools and churches.

Electrical Execution. — The most successful electrical execution that has as yet been made was that of the murderer, Delfino, at Sing Sing prison on December 4th. The apparatus was in perfect working order, and death was instantaneous. For four seconds a current of the strength of 1,760 volts was employed, and it was then reduced to 160 volts and so maintained for forty-six seconds.

Dr. Paul Hoffman. — Dr. Paul Hoffman, Assistant Superintendent of Public Schools, who was injured by a Broadway cable car on November 24th, died in consequence of the injuries thus received on December 2d. Several of his ribs were fractured, and a few days after the accident pneumonia set in. Dr. Hoffman, who was fifty years of age, was born in Switzerland, though of German parentage. He was a graduate of the Medical Department of the University of Berlin, and had travelled extensively; at one time being physician to the Sultan of Johore. He had resided in New York for a number of years, but never practised medicine there. In 1877, he became connected with the Department of Public Education, and in 1881 was appointed to the position which he held at the time of his death. Dr. Hoffman had charge of the school children's exhibit from the city of New York at the Chicago World's Fair.

Mortality. — The advent of winter weather has occasioned a considerable increase in the city's mortality. The number of deaths reported during the week ending December 24 was 759, representing an annual death-rate of 20.63 per thousand of the estimated population; against 676, representing an annual death-rate of 18.39, in the preceding week. The average death-rate of the corresponding weeks for the past five years was 19.60. During the week there were 109 deaths from contagious diseases, an increase of 32 over the previous week. During the week ending December 9th the number of deaths reported was 731, representing an annual death-rate of 19.86, against 20.43, the average for the corresponding weeks of the past five years. There was a decrease of 17 from the preceding week in the mortality from phthisis, though there was an increase of six in the deaths from bronchitis. Three deaths were attributed to influenza, against one in the week ending December 2d.

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Miscellany.

THE ANCIENTS AND LEPROSY.

Much of the difficulty encountered by the commissioners in obtaining the family history of lepers in India is accounted for by the *Indian Medical Gazette*, by reference to the ancient beliefs handed down to the people and still authoritative among them. It gives the following translations from the sacred books:

> **Susruta, Nidanasthanam** (Chap. V, p. 223). "They say that leprosy originates from murder of Brahmins, women and good men, theft, and such like acts."
>
> **Charaka Samhita** (Chap. VII, Treatment of Leprosy). — "Those who insult Brahmins, or elders, and commit other sins, (get leprosy)."
>
> **Manu Samhita** (Chap. XI, 49th *sloka*). — "The stealer of Brahmin's gold gets bad nails; the alcohol drinker gets black teeth; the murderer of a Brahmin gets consumption; and the violator of a *guru's* (spiritual guide's) wife gets leprosy."
>
> **Manu Samhita** (Chap. V, 166th *sloka*). — "The wife who commits adultery, is an object of contempt in this life, and becomes a jackal, or gets leprosy, and other sin-begotten diseases in the life to come."

It is thus popularly assumed that a leper must have committed some such sin as adultery with a *guru's* wife, or, as commentators add, with a stepmother, etc., and the like. What a sinner such a man is thought to be, may be judged from the following prescribed atonement:

> "The violator of the wife of a *guru* after confessing his guilt, must be [illegible] red-hot iron female effigy till death, which will purify him."

The ideas of physicians upon the heredity and contagion of leprosy, were not less accurate than those of modern writers, as is shown by the following statement of the great medical writer, Susruta:

> "Women and men, having their blood and seminal fluids corrupted from leprosy (not of the white kind), get their offspring lepers."
>
> "The diseases named below are transmitted from one person to another by sexual intercourse, by touch, by the breath, by taking meals in the same dish; by sleeping in the same bed and sitting on the same seat; by putting on the same garments, by wearing the same garland, and by using the same ointments: — leprosy, fever, consumption, ophthalmia, and small-pox of different kinds."

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THE INCREASE OF INSANITY IN ENGLAND.

MUCH has been written lately about the great increase of insanity in England in the last few years. The daily and periodic press especially have delighted in the alarming state of affairs and while some competent observers are inclined to believe in an increase of the disease, the general results of statistics furnished by the Commissioners of Lunacy are offered to this view.

Dr. Rayner, in a recent article,[1] says that an analysis of these statistics shows three clear and definite facts: (*a*) that in the last two decades there has been a progressive diminution in the number of mentally afflicted under the age of twenty-five years; (*b*) that there has been an inconsiderable increase between the ages of twenty-five and forty-five; and (*c*) that practically all the excess of increase has been in persons above the age of forty-five years. The decrease of insanity in the population in the first twenty-five years of life, if satisfactorily proved, would go far to convince those who have actual experience of the insane that this must correspond to a diminution in the total production of mental disease. The tendency to increasing degeneration in the families of the insane, resulting in later generations in mental defect, is a well-established fact. If, therefore, there has been a diminution in the early decades of life, this must correspond to, and be the result of, a lessening of hereditary influences.

The increase in actual number of persons confined in asylums is owing to several factors. Yearly the advantage of institutional treatment for the insane is better appreciated, and families are more willing to send their afflicted members away from home. Another reason is the transfer of pauper and criminal insane to the proper asylum instead of confining them to almshouses and jails. An eminent alienist physician, of large experience in prisons, recently expressed the opinion at a public meeting that a not inconsiderable part of the decrease of criminals was due to the fact that many weak-minded persons, formerly classed as criminals, were now relegated to asylums. The statistics in support of this view are, however, not easily available. Still another reason is found in the greatly increased survivorship of persons mentally affected when cared for in asylums.

The only form of mental disease in which a great development is alleged is general paralysis; but the apparent excess is probably chiefly due to increased care in diagnosis and to such cases being more largely sent to asylums. This form of disease, however, with an average asylum duration of two to three years, would not greatly add to the permanent numbers, except by an increase much beyond that which is claimed for it.

The asylum population (whatever the causes) has increased since 1871 by about 30,000, and if the facts relating to increased survivorship under asylum treatment have any cogency, this (survivorship) would by itself account for the small advance in the census numbers of the insane under the age of forty-five, from 2.24 per 1,000 of population in 1871 to 2.26 per 10,000 in 1891, without resorting to any theory of actual increase.

The ultimate conclusion is that the evidence at present available admits of the interpretation that there is no real excess in the amount of occurring insanity, but is even compatible with the possibility of an absolute diminution, which has certainly occurred in the earlier decades of life, and is probable in the well-to-do classes.

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SOME MORE INTUBATION STATISTICS.

IN the much vexed question of the relative merits of tracheotomy and intubation, there is one factor which should be allowed its due weight and which has not yet been sufficiently regarded, namely, the availability of the one or other operation in private practice. So far, the greater number of cases reported, upon which statistics and arguments have been based, have been those occurring in hospital practice. The operation of intubation is so comparatively new that the general practitioner has, as a rule, not seen a sufficient number of cases to base an opinion upon. It is for this reason that the publication of small individual experiences is likely to be of more frequent occurrence, during the next few years, and of considerable value, especially when published unincorporated with other statistics.

Dr. R. J. Stanton, of New York, reports[1] 70 cases intubed by him in the course of general practice, all but two having occurred in tenement-houses, where for obvious reasons the patient's chances for recovery were poor. "Of these 70 cases, 46 terminated fatally, and the 24 recoveries gave a percentage of 34.3 successful cases. Of the 46 deaths, 14 were due to extension of membrane, five to sepsis, four each to asphyxia and pneumonia, three to uræmic convulsions, and two each to exhaustion, pulmonary œdema, nephritis and bronchitis." Of the four deaths from asphyxia, two were apparently due to membrane pushed down ahead of the tube, and two followed upon the child's pulling out the tube in the physician's absence. One of the deaths from pulmonary œdema seems hardly to belong to the unsuccessful cases of intubation, as the death occurred four days after the removal of the tube, which had been worn a week, and without any occurrence of laryngeal obstruction.

Of the cases operated on, 42 were males and 27 females, one not noted; 15 males recovered (or 35.7 per cent.), and 9 females (or 33.3 per cent). The ages ranged from ten months to seven years. The youngest successful case was fourteen months, the average age being three years and five months. Three cases (one fatal) had secondary tracheotomy. The longest period during which a tube was worn was sixteen days, by a girl four years old. In three cases the tube was passed into the œsophagus and swallowed; in two it was passed in the dejecta on the second and fifth day. The other case died of sepsis after secondary tracheotomy, within twenty-four hours.

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[1] British Medical Journal, November 25th.

[1] New York Medical Record, November 25th.

Dr. W. B. Johnson, of Paterson, N. J., reports[2] 19 cases with six recoveries, one after secondary tracheotomy. Nine boys were operated upon, with five recoveries, or 55.5 per cent.; while 10 girls gave one recovery or 10 per cent. The recovery after secondary tracheotomy was in a boy three years and four months old. Of the 13 deaths, two were due to extension of the membrane, three to sepsis, two to asphyxia from membrane, and two each to pneumonia, cardiac paralysis and exhaustion. The youngest child to recover was a boy two years and seven months old. The longest time a tube was worn was ten days.

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BOYCOTTING THE CHARITÉ.

The Berlin Correspondent of the *Medical Press* sends the following account of the recent boycott of the Charité Hospital of Berlin:

For some time past the Social Democrats have had reason, or what is the same thing to them, they believe they have reason to find fault with the management and nursing staff of the Charité Hospital, and have in consequence "boycottirt" it. The Social Democrats are a very powerful body with a firm organization, and the result is that about 200,000 members of the different sick societies have determined to have nothing more to do with this hospital until fresh arrangements are made in accordance with their views. The leading spirit in the new enterprise is a young medical practitioner, named Zadek, who has the reputation of being a fanatical Social Democrat, and who has at any rate done some good work as a city deputy in the debate on typhoid fever. The grounds of complaint lie in the structural and sanitary condition of the hospital, and in the management and treatment of patients. On the latter point, however, no charges are brought against the medical staff, but only against the subordinate officials and nurses. As regards the structural deficiencies of the building, the charges may not be unfounded, as the old Charité is one hundred years old, and the new over sixty. Quite recently additions have been made to the existing accommodation, the children's pavilion, the obstetrical and gynæcological kliniken. The surgical department and the Koch barracks are models of their kind, but it must be confessed that the ancient buildings are not representative of the latest developments of science.

The second charge is that the patients, and especially those in the syphilitic department, are treated with inhumanity and deprived of their liberty. The Charité has to take in all patients sent by the police, and amongst these the *puellæ publicæ*. Those patients who commit excesses and cause a great deal of trouble cannot in the interests of order be treated exactly as the others, and it is not denied that in numerous instances some hardships have been on the one side inflicted and on the other endured. What will be the upshot of the movement, or what hospital the exacting Social Democrats will take under their protecting care, in place of the one that has excited their wrath, one cannot at present pretend to say.

METEOROLOGICAL RECORD,

For the week ending December 2, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date	Barometer	Thermometer			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	30.59	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	N.W.	16	9	F.	C.	
M...27	[illegible]	[illegible]	41	[illegible]	59	[illegible]	[illegible]	N.W.	S.E.	4	10	C.	O.	
T...28	[illegible]	48	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S.E.	W.	[illegible]	[illegible]	R.	O.	.39
W...29	[illegible]	46	52	41	[illegible]	[illegible]	[illegible]	S.W.	S.	[illegible]	18	F.	C.	
T...30	29.84	48	51	42	[illegible]	[illegible]	61	W.	W.	13	9	F.	C.	
F...1	[illegible]	40	46	[illegible]	[illegible]	[illegible]	[illegible]	S.W.	N.W.	7	18	O.	O.	.36
S...2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52	[illegible]	N.W.	W.	10	[illegible]	C.	C.	
☞	30.09		4[illegible]	31			63							.75

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 2, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.82	9.49
Chicago	[illegible]	—	—	—	—	—	—	—
Philadelphia	[illegible]	402	122	[illegible]	[illegible]	—	.75	4.50
Brooklyn	[illegible]	—	—	—	—	—	—	—
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	487,397	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9.80
Baltimore	[illegible]	—	—	—	—	—	—	—
Washington	[illegible]	[illegible]	31	12.21	11.11	[illegible]	2.22	4.44
Cincinnati	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.35
Cleveland	[illegible]	111	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.40
Pittsburg	[illegible]	—	—	—	—	—	—	—
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nashville	[illegible]	—	—	—	—	—	—	—
Charleston	[illegible]	[illegible]	[illegible]		[illegible]	—	—	—
Portland	[illegible]	—	—	—	—	—	—	—
Worcester	[illegible]	20	[illegible]	[illegible]	[illegible]	—	—	5.00
Fall River	[illegible]	[illegible]	12	11.11	[illegible]	11.11		—
Lowell	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	4.55
Cambridge	[illegible]	[illegible]	11	32.50	[illegible]	—	[illegible]	7.50
Lynn	[illegible]	[illegible]	1	—	—	—	—	—
Springfield	[illegible]	[illegible]	[illegible]	11.11	11.11	—	11.11	—
Lawrence	[illegible]	—	—	—	—	—	—	—
New Bedford	[illegible]	[illegible]	[illegible]	[illegible]		4.16		4.16
Holyoke	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	[illegible]
Salem	[illegible]	[illegible]	[illegible]	11.11	11.11	—	11.11	—
Brockton	[illegible]	5	1	—	—	—	—	—
Haverhill	[illegible]	[illegible]	1	[illegible]	—	[illegible]	25.00	—
Chelsea	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	—	—
Malden	[illegible]	7	2	[illegible]	[illegible]	—	—	14.28
Newton	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Fitchburg	[illegible]	[illegible]	[illegible]	—	[illegible]	—	—	—
Taunton	[illegible]	11	—	—	[illegible]	—	—	—
Gloucester	[illegible]	[illegible]	[illegible]			—	—	—
Waltham	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	20.00
Quincy	[illegible]			—	—	—	—	—
Pittsfield	[illegible]			—	—	—	—	—
Everett	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—
Northampton	[illegible]	[illegible]	[illegible]	—	—	—	—	—
Newburyport	14,073	[illegible]	—	—	[illegible]	—	—	—
Amesbury	[illegible]		—	—	—	—	—	—

Deaths reported 2,135: under five years of age 699; principal infectious diseases (smallpox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 310, acute lung diseases 367, consumption 245, diphtheria and croup 14[illegible], typhoid fever [illegible], [illegible], measles [illegible], scarlet fever [illegible], [illegible] 14, smallpox, [illegible].

From measles New York 18, Milwaukee 3, Philadelphia 1. From scarlet fever Cambridge 7, New York, Philadelphia, Boston and Somerville 3 each, Milwaukee and Everett 1 each. From whooping-cough [illegible] Cincinnati 2 each, Wa[illegible], M[illegible] and New Bedford 1 each. From [illegible] New York [illegible], Washington and Somerville 2 each, Cleveland, Milwaukee and Everett 1 each. From smallpox New York [illegible]. From malarial fever New York 3. From erysipelas Philadelphia 2, Cleveland 1.

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[2] Journal of the American Medical Association, November [illegible].

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending November 25th, the death-rate was 26.2. Deaths reported 5,185: acute diseases of the respiratory organs (London) 669, whooping-cough 120, diphtheria 114, scarlet fever 78, fever 67, measles 53, diarrhœa 43, small-pox (Bradford 10, Birmingham 4, London and Bristol 3 each, West Ham 1) 21.

The death-rates ranged from 10.8 in Halifax to 35.2 in Oldham; Birmingham 30.7, Bradford 28.0, Cardiff 24.9, Gateshead 13.8, Hull 27.2, Leeds 24.3, Leicester 23.5, Liverpool 30.9, London 26.5, Manchester 29.9, Newcastle-on-Tyne 22.5, Norwich 25.0, Nottingham 23.2, Portsmouth 17.8, Sheffield 29.5, West Ham 26.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 2, 1893, TO DECEMBER 8, 1893

By direction of the President, the retirement from active service this date, December 4, 1893, by operation of law, of COLONEL CHARLES PAGE, assistant surgeon-general, under the provisions of the act of Congress, approved June 30, 1882, is announced.

FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, will be relieved from temporary duty at Angel Island, Cal., on the arrival there of MAJOR BENJAMIN F. POPE, surgeon, and will report in person to the commanding officer, Boise Barracks, Idaho.

FIRST-LIEUT. FRANCIS A. WINTER, assistant surgeon, U. S. A., is relieved from further duty at Fort Wingate, New Mexico, and from temporary duty at Fort Bayard, New Mexico, and will proceed to New Fort Bliss, Texas, and report in person to the commanding officer for duty at that station.

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, December 20th, at 8 o'clock.

Paper: "Remarks on the Functions and Therapeutic Uses of the Thyroid Gland," by J. J. Putnam. The discussion will be opened by Dr. W. T. Porter with a review of the recent work as to the physiology of the thyroid gland.

F. C. SHATTUCK, M D., *Chairman.*
HENRY JACKSON, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday, December 20th, at 8 o'clock, P. M., by Dr. H. P. Bowditch. Subject, "Anthropometry and the Laws of Growth." Physicians are cordially invited.

APPOINTMENT.

Governor-elect Greenhalge, of Massachusetts, has appointed HERBERT L. BURRELL, M.D., Surgeon-General upon his Staff for the coming year.

BOOKS AND PAMPHLETS RECEIVED.

Inebriety. By R. M. Phelps, M.D. Reprint. 1893.

The Providence Lying-in Hospital; Ninth Annual Report, 1893.

A Diatribe on Diphtheria. By James Hedenberg, M.D. Reprint. 1893.

Results of Aseptic Cœliotomy. By Wm. H. Wathen, A.M., M.D. Reprint. 1893.

Chirurgie des Voies Urinaires; Etudes Cliniques. Par le Dr. Loumeau. Bordeaux. 1894.

L'Ictiolo Nella Cura Della Blenorragia. Per Il Dott. Pio Colombini, Aiuto. Siena. 1893.

Dott. Remo Segré, L'Ittiolo Nella Terapia Delle Forme Cutanee E. Venereo-Sifilitiche. 1893.

Report on Nasal Surgery, with Illustrated Cases. By M. F. Coomes, A.M., M.D. Reprint. 1893.

Scabies: Its Symptoms, Diagnosis and Treatment. By J. Abbot Cantrell, M.D. Reprint. 1893.

Ninety-eight Cases of Dysentery in Colorado. By J. N. Hall, M.D., of Denver, Colo. Reprint. 1893.

Uber Ichthyolsuppositorien bei der Behandlung der Prostatitis. Von Dr. A. Freudenberg in Berlin. 1893.

The Modern Eye with an Analysis of 1,300 Errors of Refraction. By W. F. Southard, A.M., M.D. (Harv.) Reprint. 1893.

The Pneumatic Cabinet in the Treatment of Pulmonary Phthisis. By C. E. Quimby, A.M., M.D., New York. Reprint. 1893.

Mechanical Aids in the Treatment of Chronic Forms of Disease. By Geo. H. Taylor, M.D. New York: George W. Rodgers. 1893.

Aus dem hygienischen Institute der Universität Greifswald, Ueber die antiseptische Kraft des Ichthyols. Von Dr. Rudolf Abel. 1893.

A Case of Dislocation of the Fourth Cervical Vertebra without Fracture. By A. M. Holmes, A.M., M.D., of Denver. Reprint. 1893.

A Case of Panophthalmitis, Caused by the Bacillus Coli Communis. By Robert L. Randolph, M.D., of Baltimore, Md. Reprint. 1893.

The Physicians' Visiting List (Lindsay and Blakiston's) for 1894. Forty-third year of its publication. Philadelphia: P. Blakiston, Son & Co.

Volta Bureau, for the Increase and Diffusion of Knowledge Relating to the Deaf, Washington, D. C. List of Publications. John Hitz, Superintendent.

Forty-sixth Annual Report of the Trustees of the Massachusetts School for the Feeble-Minded at Waltham, for the year ending September 30, 1893.

Raro Caso di Empiema Pulsatile Guarito Col Prosesso Pittarelli Contributo alla Terapia della Pleurite Purulenta. Pel Dott. Emilio Pittarelli in Campochiaro (Molise).

A Practical System of Studying the German Language for Physicians and Medical Students for Self-Instruction. By Albert Pick, M.D. Part IV. Newtonville, Mass. 1893.

Recent Progress in Electro-Gynecology. Prevalent Errors in the Treatment of the Diseases of Women. By G. Betton Massey, M.D., Philadelphia, Pa. Reprints. 1893.

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Original Articles.

REMARKS ON SENDING PATIENTS AWAY FROM HOME.[1]

BY FREDERICK I. KNIGHT, M.D.

In no department of medical practice, probably, has there been more hasty, ill-considered advice given than in that of climato-therapy. Thousands of patients go away every year at great inconvenience and expense, oftentimes with sacrifices which are never made good, who would have been far better off in every way, if they had remained at home.

Many of these go on their own responsibility, it is true, and it is no more strange that an invalid, having failed to obtain relief at home, should be attracted by glowing accounts of climate published by the proprietors of health-resorts, than that he should purchase and take any of the proprietary medicines so flatteringly advertised by the press, medical, secular and religious. Many, also, are guided by the advice of friends, and there is no subject on which the layman with slight personal experience feels more competent to give advice. We all know how ready some of our patients are to honor us by freely praising and lending to their friends prescriptions we have endeavored to carefully adapt to their individual conditions. In the same way many people having been properly advised, to their benefit, in regard to climate, are not satisfied till they have persuaded all their friends, whom they know to be out of health, to try the same. I am well aware that all patients do not do this, for I have known not a few who, when written to, as patients who improve by change of climate invariably are, decline to advise, and refer their correspondents to some competent authority for counsel.

It is strange, however, that more care is not exercised by physicians, who take it upon themselves to prescribe change. Sometimes advice is given on the street without the slightest exact knowledge of the patient's condition (I have known applicants for life-insurance to be passed in the same way). It also not unfrequently happens that the physician, having exhausted all his resources in vain, is tired of his patient, and his patient is tired of him, and being aware of this, and that his patient is liable to desert him at any moment for his rival, advises change, without much consideration of the place to which he is to go.

The consultant frequently receives a call from a country patient bringing a card, or saying he was recommended by Dr. A. He feels flattered at the consideration of Dr. A. in sending him one of his richest and best patients for consultation. When the examination is over, the diagnosis made, and it is proposed to communicate with Dr. A., the patient says: "Oh, Dr. A. is not my doctor! Dr. B. is the one we always employ; but Dr. A. told me that I had better consult you." In the same manner Dr. A. advises the patients of Dr. B. that they had better not risk another winter in New England, but get off somewhere.

What is it necessary to know in order to advise patients properly in regard to change of climate? In the first place, it is necessary to know the condition of the patient. In this regard it is not enough to know that he has tuberculosis, or laryngitis, or bronchitis. Treating the name of a disease by climate is no better than treating it by medicine. Colorado is good for some cases of tuberculosis; so is cod liver oil; but either may be very bad. I have been not unfrequently consulted by patients, who have either made up their own minds, or have been advised to make certain changes, and who seem to come for a formal endorsement of what they have already decided to do. A few years ago I was asked to see a lady and her invalid daughter at one of our principal hotels. On calling, I found that by the advice of their family physician they had rented their comfortable home, and were on their way to Colorado for the purpose of restoring the health of the daughter. On examination, I found the patient in the last stages of phthisis, with only a few weeks to live. I advised their going home; they had already given that up; but they did not go to Colorado. Last month I was asked to see a patient, with reference to Colorado, who had pneumothorax of one side, and disease also of the opposite lung.

Even patients with such advanced disease are not always amenable to advice. A few years ago I persuaded a gentlemen, who came to me with his heart set upon the Rocky Mountains, to spend the winter in Nassau. He did exceedingly well there. The next season he avoided me, and slipped off to Colorado, and promptly died.

A lady once came to me with her young son, who had been sent East from the Rocky Mountains the year before on account of heart disease. The physician, under whose care he had been in the East, had pronounced him "all right," and they were on their way back to the high altitude. They took me in on the way for confirmation of this opinion and action. It did not take long for me to convince myself that it was *all wrong*, and so I said with regret, to the mother. As they were going to Philadelphia, I advised her to visit two physicians there, whom I mentioned, not to say anything about my opinion, nor of that of one Philadelphian to the other, and if we all agreed in opinion that the boy should not go back, I should expect her to be satisfied to stay East another year. She did as I requested, and as we agreed without reference to one another, remained East.

It is necessary, in the second place, in order to give proper advice in regard to change of climate, to have some knowledge of the condition of the climate into which it is proposed to send the patient, and of its probable effect on his condition. In many cases, it seems as if it were sufficient that a place had a certain general reputation as a health resort for physicians to send patients thither, no matter what their individual condition might be. In this way, patients with advanced phthisis, and patients with degenerate heart and blood-vessels are sent into high altitudes, and, on the other hand, patients with incipient tuberculosis of the lungs sacrifice golden time by being sent into moist tropical countries. Something should be known, also, of the variation of climate at different seasons of the year. Because certain parts of our country are delightful in the autumn or spring, it by no means follows that they make good winter resorts; and, on the other hand, many a patient has lost all the gain at a winter resort by ignorantly remaining too late in the spring. The usual range of temperature for different seasons should be known, as well as the average amount of moisture in the air, the amount of sunshine, prevalence of winds, etc.

In this connection it is well to consider the social conditions in which the patient will be placed, and especially the quality of the food which he can obtain. There are patients with good appetite and digestion, who will thrive on the canned food of the sheep-ranchman, but there are many who are only helped downhill by it.

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[1] Read before the Boston Society for Medical Improvement, October 23, 1893.

It is well, also, to consider in a general way the suitability of the climate for the wife or other relative who must go along with the patient. It may be that she will be found to have a fatty heart or some other condition, which will absolutely forbid the climatic change proposed.

Again, it having been determined that there would be a risk in remaining at home, as compared with taking advantage of a change of climatic conditions, a very serious and seldom considered question arises, Can the patient properly make the change? This is often a question of expense, and should be ascertained, when possible, before mentioning the subject to the patient himself. It is cruel to set forth the great advantage of change of climate to one to whom it is utterly impossible to accept your advice. To advise a wife that going to Europe is the one thing that will restore her health, when this gratification is wholly beyond the ability of the husband, is very reprehensible, and may lead to unnecessary hard feeling in families.

Here comes in the question of a short, temporary change, or long-continued or permanent residence away. Short, temporary changes may suffice for the relief of acute conditions, but rarely for chronic ones. A patient may afford a short change, who cannot afford a long one. It is a very rare thing, though I have seen such cases, that one season's residence away from this coast will suffice for the arrest of pulmonary tuberculosis, however slight. It may not always be wise to tell this to the patient beforehand, but the fact will have its weight on the physician's own mind. Another consideration which has an important bearing is whether the patient can engage in any occupation. While it is undoubtedly better for most patients to do nothing for the first six months or year, there are certain out-door employments which may be pursued without harm. It is therefore important to know something of the nature of an occupation and its fitness for the case under consideration.

For instance, the digestion and mental temperament will have to be carefully considered in case it is proposed to put a patient on a sheep-ranch, where the life may be like this. Two men live in something which they have erected for a house, miles from anybody else. In the early morning these men rise, cook such a breakfast as they can, also the dinner which each takes with him, one walking east and the other west, till noon, when each eats the dinner which he has brought, turns round and walks "home" to meet his companion, takes supper and goes to bed, never seeing any human being for weeks but the same old chum, and him only at night. Weak lungs may stand this, but it takes also a strong stomach and a healthy brain.

So it may be said, in brief, that in order to advise properly in regard to change of climate, the physician should know:

(1) The exact condition of the patient, as far as it is possible to determine it.

(2) The condition of the climate and its probable effect upon the condition of the patient.

In this connection it is well, also, to consider the social surroundings in the proposed resort, and the food which it will be possible to obtain.

(3) The condition of those who must necessarily go with the patient, and the probable effect of the new climate upon them.

(4) The pecuniary condition of the patient in reference not only to his getting to his destination, but in regard to his ability to stay there long enough, and to provide what will be necessary for himself and family. This should be ascertained as far as possible without consultation with the patient, and before the subject of change of climate is mentioned to him.

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A CÆSAREAN SECTION FOR TWIN MONSTROSITY: RECOVERY.[1]

BY JOHN F. CROSTON, M.D., AND MAURICE D. CLARKE, M.D., OF HAVERHILL, MASS.

By Dr. Croston.

At 9.15 on the morning of Monday, July 17, 1893, I was called to see Mrs. ——, aged twenty-four, primipara, who had come to full term, and who gave a history of having had labor pains since the previous Saturday, and had very likely been in labor about twelve hours. She was a person of slender physique, but had always enjoyed good health, nothing untowards having happened during the pregnancy except at the beginning of the fourth month, when she had a slight hæmorrhage from the uterus, which was controlled in a couple of days by opium and rest in bed. The family history was good; and she remembered nothing unusual in the labors of her sisters or near relatives, and had no knowledge of plural births in their families.

She informed me that the "waters" had come away during the night; and, upon examination, I found the os dilated, the membranes ruptured, and the lower extremities of a fœtus, low down in the vagina, and with toes pointing backwards towards the sacrum, presenting. Her unusual size led me to make a careful abdominal palpation, which disclosed the presence, apparently, of another fœtus in utero. I advised immediate delivery, and set out forthwith to accomplish it, under chloroform anæsthesia. After several vain attempts to extract the fœtus by the extremities, it being impossible to bring the feet lower down than the vulvar orifice, I proceeded to make a second examination per vaginam. Carrying the examining finger well up, I found the extremities of the second fœtus impacted at the brim, and, going still farther, I recognized, for the first time, the fact that I had to deal with a monstrosity and that the fœtuses were joined at the trunk.

At this juncture I sought a consultation, and Dr. W. D. Collins came to my assistance. He agreed with me as to the diagnosis; and we made a second attempt to deliver the woman, but failed. Dr. Maurice D. Clarke, who had been previously sent for, arrived at this point; and, he agreeing as to the diagnosis, the question of operation was discussed, and the Cæsarean section chosen after mature reflection. The husband's consent was obtained with little difficulty, and the operation was performed immediately by Dr. Clarke.

By Dr. Clarke.

I examined the woman as soon as I arrived and found the condition described by Dr. Croston. I could see no use in further attempts to deliver after the ordinary fashion, and I agreed with the others that the question was one of a selection among operative procedures. There seemed, to my own mind, but three methods to be considered, — embryotomy, symphyseotomy, and a Cæsarean operation. The operations for the removal of the uterus and for delivery without incising the uterus (laparo-elytrotomy) were not considered and probably would not have been adopted. Of the others, the Cæsarean section appeared to us to afford the mother the best chance, embryotomy being likely to be complicated, tedious and difficult, if not impossible, while the cutting of the symphysis was not certain to allow room enough for delivery, to say nothing of other objections. For myself, I confess to a dread of a "loose" pelvis. As a matter of fact, the monster could not have been extracted entire per vaginam. So that we reached for ourselves the conclusion of the books, that the Cæsarean section is the operation for election by the average surgeon.

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[1] Read before the Essex North District Medical Society, October 11, 1893.

This point determined, I proceeded at once, upon Dr. Croston's invitation, to operate, with what might be termed comparative antiseptic precautions, by which I mean, that the woman's abdomen had not been soaked over night in antiseptics and was not washed with ether, that the operator's hands were not treated with oxalic acid and permanganate of potash, that neither dressings nor instruments had been previously sterilized by heat, and the ordinary living-room in which the operation was done had no previous preparation. On the other hand, the instruments were put into boiling water, the woman's abdomen was scrubbed with bichloride solution and the hair of the mons veneris shaved, and the hands of the operator and assistant were soaked in the mercurial solution. The patient was anæsthetized by Dr. Collins with ether, Dr. Croston assisting the operator. An incision of six inches in length was made in the linea alba below the navel, a rubber tourniquet tightened around the cervix, and the uterus at once incised. We were fortunate in not striking the placental site, and there was no hæmorrhage of moment. The monster was then pulled out with considerable difficulty on account of its previous impaction at the pelvic brim, and the placenta followed immediately. The elastic tube was removed, the uterine rent closed at once with eight deep silk sutures, the pelvic cavity hastily sponged with gauze, and the abdominal wound united with six deep silk sutures and four superficial ones, and covered with the usual dressings.

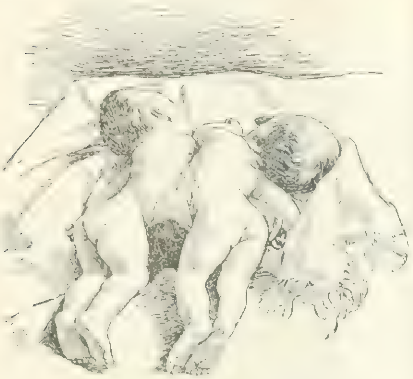
The little operative work that falls to the lot of surgeons outside of the large cities had suggested to me that a chief danger lies in shock from prolonged operations and continued anæsthesia, and it was my intention in this case to proceed with all legitimate haste and avoid at least this source of trouble. This intention may be said to have been fairly carried out, the giving of the ether having been begun at 1.10 P. M. and the patient being in bed at 2, and may have assisted recovery. For the rest, nearly everything seemed to favor it, the patient being a young and vigorous woman, in her first pregnancy, and not worn by a prolonged labor. The surroundings were not perfect, and the antiseptic precautions were not of the *fin de siècle* order (which may account for the temperature), but there was a trained nurse and good care.

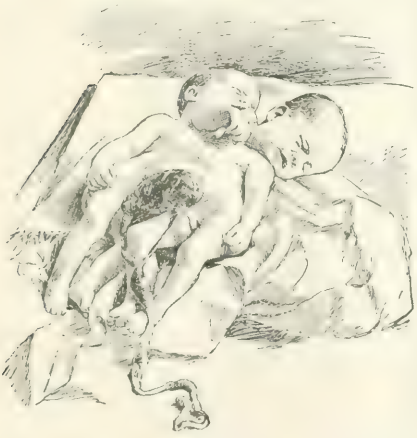
This case makes the eighty-seventh Cæsarean section in this country since the improved method of operating was introduced in 1882, according to the figures of Dr. Robert P. Harris, of Philadelphia, the recognized authority upon the subject. Of the first 43, 22 women and 6 children were lost; of the other 44, 13 women and 7 children were lost, the result in one case not being known. I have been unable to find abnormal size of the fœtus among the enumerated occasions for the operation, and I supposed at the time, and since, that this was the first ever performed on account of a monstrosity. In fact, Dr. Harris wrote me that no one in the United States ever delivered a monster by abdominal section and he did not know of a parallel in any other country. The mention of this case, however, brought to light the fact, as Dr. Harris has since written me, of an operation performed in Philadelphia in 1881, by Dr. James Collins and the late Dr. Philip Leidy and hitherto unreported. The monster was a double female, one having a unilateral hare-lip, and weighed fourteen pounds. One head, protruding, was amputated; the rest was delivered by the Cæsarean operation. The placenta was extracted by the vagina. The uterus contracted at once and there were six silk sutures inserted. The woman had been in labor five days, was much prostrated at the time of the operation, and died in three days of exhaustion. The uterine wound was well closed. With this information, therefore, this operation of mine loses in priority of performance, but retains its place as the first successful Cæsarean section for this cause.

By Dr. Croston.

After the operation the patient was put to bed, surrounded by hot-water bags, and, upon recovering from the effects of the ether, was given a teaspoonful of hot milk every half-hour, and brandy *pro re natâ.* Seven hours after the operation the temperature was 101.4° and the pulse 118. Morphine (gr. $\frac{1}{6}$) with atropine (gr. $\frac{1}{150}$) was given that night for the relief of pain and repeated in three hours, succeeded by three hours' sleep. On the morning of the second day the temperature had dropped to 99.2° and the pulse to 100, rising by evening to 102° and 106 respectively. Urine was passed normally. The morning of the third day found the temperature still at 102°, pulse 93, and the abdomen was markedly tympanitic and tender. One-half ounce of magnesium sulphate was ordered, to be repeated in four hours if necessary. The first dose proving ineffectual, a second was given, followed in two hours by a copious dejection. There were six movements in rapid succession, and the tympanites wholly disappeared and did not return. The dressings were changed on that day. On the morning of the fourth day the temperature was still 102°, but the pulse had dropped to 80 and was of good character. The nourishment was increased in amount, and beef-juice and egg-nog allowed. From this time on, the temperature continued to drop, becoming normal on the morning of the eighth day and so continuing until convalescence was fully established. The abdominal sutures were removed on the tenth day, union by first intention having taken place throughout the whole extent of the wound. From this time convalescence was uninterrupted, and at this writing (September 1st) the woman is perfectly well and able to do light work about the house. The menses appeared normally.

The composite fœtus weighed twelve and one-half pounds, and consisted of two females of equal size, each of the average size at full term and each gaping widely from the pubes to the navel from incomplete closure of the lateral halves of the body, otherwise normal. They were dead when born. They were united from the sternal notch to the navel in front, and from corresponding points on one side only, by a continuance of the skin, best shown by photographs taken on the spot. There was one cord and one placenta, both unusually large.





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PLACENTA PRÆVIA AT THE BOSTON LYING-IN HOSPITAL.[1]

BY CHARLES W. TOWNSEND, M.D.

AMONG the 6,700 deliveries at the Boston Lying-in Hospital in the past twenty years there were 28 cases of placenta prævia recorded. This proportion, four per cent., is four times larger than that stated by Müller, of not quite one case to a thousand births, but is explained by the fact that difficult and abnormal cases are particularly apt to be sent to the Boston Lying-in Hospital, so that the proportion of these cases is necessarily increased.

Of the 28 cases, 15 were marginal or lateral, the placenta reaching to the border of the inner cervical ring; eight were partial, the placenta overlapping the os to a greater or less extent; and five were central, the implantation of the placenta being directly over the os.

The proportion of multiparæ to primiparæ, instead of being six to one as is usually stated, was less than two to one — 17 to 11 — the difference being due partly to the large proportion of primiparæ delivered in the hospital. The proportion of multiparæ was greater in the partial and central cases, there being three primiparæ to five multiparæ in the partial class and only one primipara to four multiparæ in the central class.

Marginal or Lateral Placenta Prævia, fifteen cases.

In four cases there was no hæmorrhage until there were recognized labor pains, while in eleven hæmorrhage was noticed at varying intervals before the advent of labor. Two of these flowed about once a month so as to simulate true menstruation; three began to flow in the seventh month, two at eight months, and three at eight and a half months. In one this point is not stated. Seven went on to full term, six gave birth prematurely at eight months, two of these being delivered artificially, and two gave birth at the seventh month, one of these being delivered artificially. The hæmorrhage was slight in six, considerable in four, profuse in three; while in six the records also spoke especially of the postpartum hæmorrhage.

As regards the treatment of these cases, the majority of the patients came to the hospital in labor with the history of flowing as given above, and proceeded to give birth to their children without artificial help; the diagnosis of lateral placenta prævia being made by examination. Others, labor not being present, were kept in the hospital under close observation, and later gave birth to their children without assistance. This non-interference method was practised in twelve out of the fifteen cases. Of the remaining three, in one case where there was considerable hæmorrhage at the eighth month, a colpeurynter was inserted, and the child was born in eight and a half hours. There was also considerable postpartum hæmorrhage in this case. Two cases were delivered by manual dilatation and version; one at the seventh, the other at the eighth month, both patients having lost considerable blood — one by slow dribbling, the other by a sudden gush of one and a half pints. In the former case manual dilatation took five minutes, in the latter fifteen minutes.

As to the results in these fifteen cases of marginal attachment of placenta: All the mothers recovered. One child, born naturally at the seventh month, died in two days. One born by version died in twenty minutes, probably due to the asphyxia owing to delay with the after-coming head. The child whose delivery at the eighth month was hastened by the colpeurynter was still-born.

Case 19 illustrates this class of cases. C. D., twenty-one years old, primipara, entered the hospital with moderate flowing about two and a half weeks before the completion of her pregnancy. A diagnosis of probable placenta prævia marginalis was made by the feel of the lower uterine segment and by the hæmorrhage. She was kept in bed a week, during which time there was a moderate leaking of blood. The hæmorrhage then ceased, and ten days later labor came on with moderate bleeding until the head came down and acted as a tampon. There was quite a severe postpartum hæmorrhage following the birth of the placenta. Mother and child were discharged well on the fifteenth day.

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[1] Read before the Obstetrical Section of the Suffolk District Medical Society, March 22, 1893.

It may be said that the diagnosis of this class of cases is somewhat uncertain, and that some of them were simply cases of accidental detachment of a portion of the normally situated placenta. This error has been excluded as carefully as possible. In many of the cases the edge of the placenta was actually felt.

Partial Placenta Prævia, eight cases.

In two cases there was no hæmorrhage until labor began, at full term in one case, a week ahead of time in the other. In another case hæmorrhages or pseudo-menstruation occurred twice a month throughout the entire pregnancy, which went on to full term. The remaining cases had hæmorrhages, first, at the fifth, sixth and eighth months and at eight and a half months and at full term respectively. Five were delivered at full term, only one of these by natural means; two at eight months; one by version; one spontaneously; and one without help at the sixth month. In this latter case there had been profuse hæmorrhages every day for three days, when the dead fœtus was expelled spontaneously, the edge of the placenta overlapping the head one-third of its extent. The hæmorrhage was slight in two, considerable in two, and profuse in three of these cases. In two, postpartum hæmorrhage was well-marked.

In the treatment of these cases of partial placenta prævia, the greater hæmorrhage demanded a greater amount of active interference. In three only the delivery took place spontaneously, the remaining five were delivered by internal podalic version, two having been first tamponed. All of the eight mothers recovered, and four of the infants; but four infants were still-born. Two of these infants were born spontaneously, two were delivered by version. It is fair to add, however, that of the two born spontaneously, one was non-viable, the other was macerated. Of the two still-born infants delivered by version, in one case there was a complicating ovarian tumor which had to be pushed out of the way before version could be done.

Case 24 is an example of the more severe cases of partial placenta prævia. A multipara (x), thirty-eight years old, was seen outside the hospital shortly after she had lost about a pint of blood by a sudden gush. She was at full term, and began at once to have labor pains. The os was two inches in diameter, and the edge of the placenta was easily felt. The vagina was packed with charpie as a temporary expedient while she was being brought to the hospital. Here she was at once etherized and easily delivered of a living child by version, the whole operation taking not much longer than one minute. A gush of blood followed the withdrawal of the arm used in turning, but the child's body acted as a tampon and stopped further bleeding. There was a moderate hæmorrhage immediately following the extraction, but the uterus contracted well and everything seemed all right. Three hours later, however, there was profuse bleeding, which was soon checked by a hot intra-uterine douche; but the patient went into an alarming state of collapse, became pulseless, the extremities cold, face blanched, heart sounds weak and irregular. The foot of the bed was raised, heaters applied, and brandy and other stimulants given subcutaneously. The patient was left in an anæmic condition, but made a good recovery.

Central Placenta Prævia, five cases.

This central form of placenta prævia is the rarest and the most serious form, so that it is worth while speaking of these cases more in detail. All of the five cases were delivered by version, a tampon having been first used in two of them. Three of the mothers died, two recovered. Four of the infants died, only one lived. It must be said, in palliation for these results, that all of the five cases entered blanched from loss of blood, two of the three fatal cases being almost in extremis. Such cases are sent to the hospital as a last resort, and in that way the fatal statistics are increased.

In one of the successful cases as regards the mother, a multipara (viii), thirty-four years old, there was no hæmorrhage until the eighth month when there was a sudden profuse flow. She was brought eleven hours later into the hospital plugged with a sponge and colpeurynter, she was extremely blanched, pulse 120 to 140, respiration 50. The os, which was about half an inch in diameter, was dilated manually in ten minutes, and the child delivered by internal podalic version. The child was dead and slightly macerated. The mother recovered after a moderate attack of septicæmia due, no doubt, to the manipulations outside the hospital and to the sponge introduced there.

Case 2, a primipara, had been flowing copiously at the eighth month for a week before she was sent to the hospital. She was delivered by podalic version without much loss of blood, but a secondary hæmorrhage occurred; she never came out of the collapse and died. The child was very feeble but was kept alive for two and a half hours.

Case 3, multipara (iv), twenty-six years old, had her first hæmorrhage at six months and three weeks, — a sudden gush while sitting on a vessel, the blood filling it one-half full. A week later she had a second severe hæmorrhage, and was brought to the hospital in a blanched condition. Manual dilatation of the cervix occupied fifty minutes, and the child was turned and delivered. During the delivery a large amount of blood was lost. The child gasped, but soon died. The mother went into a collapse, although there was no further hæmorrhage, and died in two hours.

Case 4, multipara (iv), thirty-four years old, had her first hæmorrhage, a small one, at seven and a half months. Two weeks later there was a profuse flow and she was brought into the hospital in a blanched condition. The os was at once dilated manually, in thirteen minutes the child quickly turned and delivered. It is stated that from one to two quarts of blood were lost during this procedure. The uterus contracted firmly and the patient appeared bright for an hour after coming out of the ether, and there was no further hæmorrhage. About five hours later, respiration became rapid, the pulse became small and thready and the patient died in twelve hours. The baby lived ten hours.

Case 5 I can speak of more particularly, as it occurred during my service two years ago. M. G., twenty-one years old, multipara (ii), when eight months advanced in pregnancy had several slight hæmorrhages, followed a week later by a very profuse one for which she was tamponed by a doctor at 2 A. M. On entering the hospital at 1 P. M. the same day she was in a blanched condition, the pulse 100, weak and compressible, the fœtal heart about 210 and irregular. The patient was at once etherized, placed in a position for operation and the packing removed. The os was found to be about one and a half inches in diameter and completely covered by placenta. While satisfying myself of the diagnosis of central placenta prævia, the blood suddenly spurted out copiously by my hand. Without withdrawing my hand I at once peeled off the placenta on the left border, quickly finished the dilatation of the os and passed my hand up around the placenta. The child was easily turned, and the half breech at once checked the hæmorrhage. The child was quickly delivered and the head was followed immediately by the placenta. The uterus contracted well, but in all at least a quart of blood was lost, and there was considerable postpartum hæmorrhage, which was controlled by pressure and friction externally, and by a hot intra-uterine douche. The child was anæmic and did not cry at first, but recovered, and was with the mother discharged well on the fourteenth day.

The following table gives an analysis of these 28 cases of placenta prævia:

TABLE OF TWENTY-EIGHT CASES OF PLACENTA PRÆVIA.

	Lateral or Marginal. (15)	Partial. (8)	Central. (5)
No hæmorrhage until beginning of labor.	4	2	0
Hæmorrhage every month.	2	1	0
Hæmorrhage first at fifth month.	0	1	0
Hæmorrhage first at sixth month.	0	1	1
Hæmorrhage first at seventh month.	3	0	1
Hæmorrhage first at eighth month.	2	1	3
Hæmorrhage first at eight and one-half months.	[illegible]	1	0
Hæmorrhage first at ninth month.	4	3	0
Delivery at sixth month.	0	1	1
Delivery at seventh month.	2	0	0
Delivery at eighth month.	6	2	4
Delivery at full term.	7	5	0
Hæmorrhage, slight.	6	2	0
Hæmorrhage, considerable.	1	2	0
Hæmorrhage, profuse.	3	3	5
Hæmorrhage, postpartum.	6	2	2
Delivery natural.	[illegible]	[illegible]	0
Tampon used.	1	2	2
Delivery by version.	2	[illegible]	5
Mothers recovered.	15	8	2
Mothers died.	0	0	3
Infants lived.	12	4	1
Infants died.	2	0	3
Infants still-born.	1	4	1

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THE IMPORTANCE OF EARLY ATTENTION TO THE DISABILITY CAUSED BY INFANTILE PARALYSIS.[1]

BY A. B. JUDSON, M.D., NEW YORK.

I PROPOSE to consider briefly the question whether a certain class of patients should not be committed more entirely and more early than they are to the care of the orthopedic surgeon, a consideration as interesting to the family physician as to the orthopedist, as they meet in friendly alliance to secure the greatest benefit for their common patient.

I refer to the patients disabled by infantile paralysis. The child has passed through the stage of onset. Ergot, electricity and massage have produced their legitimate effect, and we will say that the eighteen months, which are believed to be the limit of spontaneous recovery from the paralysis, are passed. The friends and the patient, with many grievous misgivings, have become reconciled, or at least accustomed, to disability and deformity which now seem to change for neither the better nor the worse. What can now be done? The question whether such a patient may not yet receive benefit from the advance of scientific knowledge, or from the daily increasing facilities for the application of knowledge, will surely spring up in the parental heart.

Now it is curious to note that the deformity in these cases is often found, upon analysis, to be a disability more than a deformity. Take a case, for example, in which the knee cannot be completely extended. When the patient is sitting there is no deformity, but when he stands the apparent deformity is due to a disability — an inability to extend the knee. How easy it would have been to prevent contraction of the hamstrings by providing for their repeated elongation by complete extension of the knee, easy, comparatively, for one who has given himself to such details, and is habitually mindful of their importance and free from the manifold cares which beset the average practitioner. And it should be borne in mind that cases sometimes occur in which shortening of the tendons begins, in a manner not well understood, at a very early stage, before simple desuetude can be fairly accused of being the author of the mischief. The prevention of muscular and tendinous shortening, then, should receive attention on the part of the early observer of the case. It is not an obscure and difficult point, but one which has, perhaps, escaped the consideration to which it is entitled.

To recur to the disabled knee, and this part of the anatomy is used simply as a convenient example to illustrate points in pathology and treatment applicable to all the joints, if the knee is kept extended at those times when walking is attempted, not only are the muscles and tendons kept in normal elongation, but the general welfare of the limb is assured. Neglected patients may be seen in the streets walking laboriously with extension of the knee produced by the hand pressed firmly at every step on the lower part of the thigh when the weight of the body is on the limb. It is doubtful whether this in any case prevents the final resort to a crutch, by the use of which the limb is made to dangle, being carried about as a worse than useless burden, twining limp around the crutch, subject to the painful affections which attack the lower extremities in cold weather in the absence of healthy circulation, and more and more impeding locomotion, until, as has happened many times, the adult patient seeks relief and improved locomotor ability in amputation and an artificial limb. If the knee is stiffened mechanically, the pressure of the weight of the body in standing and the repeated concussion of the limb, as the foot strikes the ground in walking and running, will improve the tardy circulation; but beyond this, and better than this, will be the development of unused muscular fibres and special groups of muscles, by whose action important motions will be acquired which would have been impossible if the limb had remained in suspension.

Now, in order to keep the knee firmly extended under the weight of the body in standing and walking, and to give use and development, as far as may be, to the fragmentary muscular system of the limb, apparatus is required; but it will not be obtained without authoritative medical advice and prescription, and, as a rule, the family physician cannot be expected to work out the tedious processes incident to treatment of this kind. It falls to the lot of the specialist, who can well bear the inconvenience attending final results which are more or less imperfect, after satisfying himself that he has done all that science permits to be done, and whose daily and hourly mastery of the necessary details has enabled him to reduce perplexing and complicating conditions to familiar routine. Treatment of this kind lies far outside ordinary practice, in which the physician renders such signal service. He makes his diagnosis, advises, prescribes, remains on guard against complications, foresees the crisis and prepares for it, leads the way cheerfully through convalescence; and medical science, so dear to us all, finds but another illustration of its power and beneficence. In one home a wasting fever has been finally resolved, and the patient rises in customary, or even improved, health from a bed where the grim alternative has been decided in his favor. In another, the children have been happily carried through the perils of infection, and resume their places at the table. But in the special practice adapted to the cases under consideration, there is no fear of a fatal result and no rejoicing, and the object sought is at the best a palliation. But who will say that important service has not been rendered? for it should be remembered that the conservative and plodding practitioner along his line has for an ally one of the most potent influences in Nature in the growth of the body. The popular reliance on this force, expressed in the common question, "Will the child outgrow the ailment?" whatever it may be, is not always misplaced. Happy the physician who, imparting his confidence to the patient's friends, and relying on the exact science of the physicist, sees grace and power growing out of deformity and helplessness.

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[1] Read before the New York Academy of Medicine, November 2, 1893.

A good general rule in the treatment of deformity in a growing child is to keep the part as near as possible in the desired shape as much of the time, day and night, as is practicable, so that the increment shall be on the right side of the dividing line between the normal and abnormal. The familiar proverb says: "As the twig is bent, the tree's inclined." In the troubles following infantile paralysis the principle should be extended. We should not only persist in keeping the part as near the normal shape as we can, but we should also give as wide play as the crippled condition of the limb will allow to the functions of motion and weight-bearing. From the very earliest attempt to walk, or to make use of the muscles and joints which are imperilled by the cord lesion, extraneous assistance should be afforded. It should not be said, off-hand, that the child is too young. The first and repeated question should be: Is the child not yet old enough, or is he not already giving sufficient evidence of a desire to make use of the questionable muscles and joints to make assistance desirable or necessary?

When efficient treatment is begun it is easily continued. Improved ability is at once appreciated by both parent and child. It is well that such is the fact, for improvement does not stop with infancy or childhood. The process is slow and prosaic, but the benefit cannot be over-estimated in the opinion of the one who is in the best position to judge of its value. A slight improvement in the gait, or an ability to walk a little faster or a little farther without fatigue, confers lasting happiness, and the patient and physician are thus encouraged to go on to new achievements, until, with one step after another gained, the outcome is an adult well able to follow the ordinary pursuits of life, in place of a being who had looked forward to hopeless dependence.

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Clinical Department.

TWO CASES OF ACQUIRED COMPLETE ATRESIA OF THE VAGINA.[1]

BY EDWARD A. KINGMAN, M.D., BOSTON.

Mrs. N. E., widow, thirty years of age, was born in Prince Edward's Island, and had worked as a cook. She was admitted to the St. Elizabeth's Hospital, July 29, 1891.

Eight years before she had been delivered of her first and only child, the labor lasting four days. The puerperium was marked by fever, with pain and tenderness over the abdomen, lasting for four weeks. During this time the urine trickled away through the vagina, but this ceased gradually and did not recur.

Menstruation never returned; but once a month there was increase of pain in the back and lower abdomen, the backache never being wholly absent during the eight years.

Two months before her admission to the hospital she had been operated upon by a surgeon in a neighboring city, he having found complete closure of the vagina, and she being anxious to remarry. The operation did not result satisfactorily, the bladder being opened and the cervix not being found. A second attempt, a week later, had resulted no better. The opening so made had been kept open by the daily use of a glass plug; but the surgeon leaving town for the summer, referred the patient to me for further operative treatment.

Examination, under ether, on August 4th, revealed an opening into the base of the bladder which easily admitted three fingers. Beyond this there extended a small cicatricial pocket about one-half inch deep. The lower part of the urethra was missing. By the rectum it was easily discovered that the uterus was small, and that it was lying in the second degree of retroversion. Between the cervix and the rectum there seemed to be an elastic tumor about the size of an egg.

This tumor I supposed to be the remaining portion of the vagina filled with fluid. An aspirator needle was introduced from the top of the artificial vagina, and what appeared like thick pus entered the tube. On the assumption that this was retained leucorrhœal secretion, an opening was made beside the needle with sharp-pointed scissors, and about two ounces of this purulent fluid were evacuated. The finger passed through this hole into a cavity with a smooth lining, containing at its upper margin a small projecting button, which could be nothing but the atrophied cervix.

Directing the finger downward toward the perineum, a knife was entered just below the existing opening, and was made to cut down upon the finger-tip. In this way an entirely new vaginal entrance was obtained, and a flap of tissue was raised to cover in the base of the bladder.

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[1] Read [illegible] Medical Society, [illegible]

After freshening surfaces wherever necessary, this flap was secured in place by sutures, the opening made beside the needle being closed by one purse-string suture. The remnants of vaginal mucous membrane were now dissected up and united as closely as possible to the external skin. Iodoform powder was dusted over the wound, a sigmoid catheter was put in the bladder, and the knees were tied together.

Four days later the catheter was finally removed, and the patient passed water voluntarily, though a moderate amount of leaking continued for several days longer. The stitches were removed on the eleventh day, and from that time she had perfect control of the bladder, holding her water for two and even three hours at a time.

A plug was used a few times, but the patient soon left the hospital and returned to the care of her former physician.

I had the privilege of examining her once again during the following winter, when I found the condition just as I last saw it, save for a tight ring of cicatricial tissue just at the entrance where the mucous membrane and skin were separated by a narrow interval. This condition could very easily have been remedied by a trivial operation, but further treatment was not then permitted.

The second case is that of a physician's wife, fifty-two years of age, who has always enjoyed perfect health, and only consulted me because of the fear felt by her husband that there might be commencing malignant disease of the uterus. She had had two children, the youngest being twenty-three years of age. Menstruation had been perfectly regular up to within a few months, and without pain or discomfort. For a month there had been a slight but continuous bloody discharge.

I was told that for years the vagina had been shallow, but that recent examination had shown a puckering and apparent closure of the upper portion. This fact I confirmed readily enough, the vagina ending in a blind pouch about an inch below the cervix, marked by a dimple or depression which admitted a small probe, through a sinus, into a pocket which surrounded the cervix.

Operative interference was advised, and a few days later was undertaken. The sinus was slit laterally with a tenotomy knife, guided by a lachrymal director. It was then stretched widely with sinus dilators, and the finger explored the pouch beyond.

The cervix proved to be deeply lacerated on both sides, the scars involving the vagina so extensively as evidently to give sufficient explanation of the stenosis. The cervix and vagina had formed such extensive adhesions as almost wholly to obliterate the vaginal portion of the former. After peeling off these adhesions with the finger, the stenosed portion of the vagina was still further incised and was then packed with iodoform gauze.

The progress to complete recovery was rapid and painless. Some slight narrowing of the vagina still exists and the cervix has not been operated upon, but the patient has not one single symptom referrable to her condition, so does not at present desire operative interference.

As regards the causes of the atresia in these two instances, there can be no doubt. In the first case a long second stage resulted in sloughing of the soft parts, how extensively we cannot say, but certainly so as to cause a vesico-vaginal fistula. Then there was probably a septic condition which favored either extension of the slough or of a neighboring vaginitis, with resultant cicatricial contraction, or more likely plastic adhesion of the walls of the vaginal outlet. At the same time a septic ovaritis destroyed the functional activity of the ovaries, and menstruation ceased.

In the second case, the tears of the cervix extended far into the vagina on each side, so as to almost close it, either by their contraction, by direct adhesion, or, as I think most likely, by both processes combined. Partial retention of menstrual discharge and of the normal secretions, set up a sharp vaginitis, which increased the contraction and developed fresh adhesions.

I have no desire to enter upon a discussion of the general subject of atresia vaginæ, whether congenital or acquired, but in view of the infrequency of the latter condition, I have thought that a brief report of these two cases might prove not only interesting, but instructive. There is nothing in the management of either case which calls for especial notice, unless it be worthy of remark that so much was accomplished in the first case as the result of a single operation.

It is worth our while, however, to consider that in each case a proper appreciation of the condition at the time of injury, would have suggested treatment which could not have failed to prevent any such complete closure as has been described. Of course, every one now examines to see if the perineum has suffered injury during labor, and most men practise immediate suture where, according to their judgment, it seems called for. But if these cases teach anything, they teach the importance, not only of a more careful supervision of the puerperium than is commonly practised, but the value and the absolute need of a vaginal examination before the final discharge of our parturient patients.

The best time for such an examination is near the end of the puerperal month, and no notions of convenience or of prejudice on our part, or of false modesty or timidity on the part of the patient, should be permitted to interfere with the performance of our manifest duty.

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A PECULIAR CASE OF ACQUIRED ATRESIA OF THE EXTERNAL OS UTERI.

BY BARTON COOKE HIRST, M.D., OF PHILADELPHIA.

Mrs. E., aged forty-eight, married twenty-five years, never pregnant. Eight years ago the menstrual flow was absent for about eight months; after one reappearance, it did not return for a year; then again for nine months; and again for a year, since which time there has been no menstruation. Two months ago the woman began to experience discomfort in the lower abdomen. This became rapidly worse until the abdominal walls in the hypogastric and iliac regions were painful to the touch. With the increase of pain there developed very marked dysuria and irritability of the rectum.

On digital examination, a large cystic tumor was felt, filling up the entire pelvic cavity. It was impossible to find the cervix by the sense of feel. On inspection, a very slightly projecting nipple could be seen in the centre of the vaginal vault, and a small dimple could be detected at the site of the external os. The diagnosis was plain.

Under ether, a trocar and canula were pushed through the cervix into the uterine cavity. On the withdrawal of the former, a stream of coffee-colored fluid was projected several feet from the woman's body. More than a pint was evacuated. The uterus contracted vigorously, and directly after the fluid ceased to flow its internal measurement was two and one-half inches.

The interesting and peculiar features of this case are the entire absence of a cause for the atresia; the menstrual history suggesting the menopause; the slow accumulation of fluid and late appearance of symptoms — five years after the cessation of menstruation.

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A CASE OF RECURRENT PARALYSIS OF THE OCULO-MOTOR NERVE.[1]

BY EDWIN E. JACK, M.D.

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Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

The patient, a Swedish woman, twenty-six years of age, was first seen April 14, 1893. Some weeks previous to this she had been at the Infirmary, where the diagnosis of paralysis of the third nerve was made. She was an average-sized and healthy-looking woman, and with the exception of the present trouble, said she was and always had been perfectly well. She had measles when young, but nothing else. No history or physical signs of syphilis. Bowels and menstruation normal. The mouth and nose were slightly drawn up to the left, but a careful examination by Dr. J. J. Thomas showed no paralysis of any branch of the facial. The ears, examined by Dr. F. L. Jack, showed signs of hypertrophic catarrh. Hearing subnormal in left. The father is alive and well. The mother, who died twelve years ago at the age of about forty-five, of "rheumatism and dropsy," suffered with headaches during her life. Whether they were migrainous in character could not be told. Two brothers and two sisters are well.

Toward the end of January last, patient was taken with sudden and severe pain in the left brow, temple, cheek and side of nose. The pain was described as dull, like the blow of a hammer. With the pain there was loss of appetite and vomiting. This lasted for two or three days, during which time patient was in bed. During the first day the left lid began to droop, and in a day or so there was complete ptosis. In the course of two weeks the lid could be raised so as to uncover the pupil, and then there was diplopia, which has persisted in some degree till now.

Examination of the eyes April 14th: O. D. normal; V. = 1; H. O. S. — fundus normal. Pupil well dilated. Reaction to light extremely slight. Associated action with accommodation very feeble. V. = 0.1 — the poor vision being due to an almost total paralysis of the accommodation. With a rough correction of the refraction, V = 1. There was diplopia everywhere except in the lower part of the field from just within the extreme right to the extreme left. O. S. did not move in perfectly. On quick convergence it tended to lag behind and on looking quickly at a distance it deviated outward slightly. Marked limitation in upward movement, movements outward and downward normal. There was apparently a very slight ptosis. An examination October 12th showed practically the same conditions, except that there was no diplopia on the horizontal line.

Attacks similar to the one just described and with the same accompaniments, have occurred many times during the last ten years, beginning therefore at about the age of sixteen. Some years there have been only two or three attacks and in some five or six. In the last five years more than before, but within that time there has been no increase in frequency. The last interval, nine months, is the longest that has ever occurred, so that this year is likely to prove an exception to the previous ones. For the first few years there was no paralysis between the attacks, but the last four or five, the dilatation of the pupil, the paralysis of accommodation and in some degree the diplopia on looking upward, have been permanent. The ptosis and diplopia in the middle of the common field have usually disappeared within two or three weeks. The last time though a certain amount of ptosis remained for two months and the double vision in the middle of the field lasted longer than formerly; this has been the tendency lately. There has never been any connection with menstruation and never any headache between the attacks. The pain is limited to the region stated, never reaching to the occiput. There is a feeling of heat and sometimes of cold, but no chills. The pain comes on suddenly, without warning, and does not seem to be brought on by anything patient eats or does.

The earliest reported case of this kind was that of Gubler in 1860. Mauthner has published the account of a case seen in Graefe's clinic in 1864. With these exceptions all the cases, about twenty-eight, have been reported since 1882. Of these the majority, fifteen, are females. The age at which the attacks first came on varies from eleven months to thirty-one years, the greater number being under fifteen. In a few the age is not stated. In eleven the right side was affected, in sixteen the left, one doubtful. In most of the cases headache and vomiting preceded the paralysis, in some there was no vomiting, and in a few dizziness was present. Other symptoms occurred in separate cases, such as paresis of arm, trouble in articulation, tenderness in the region of the branches of the fifth, tinnitus and transient deafness, a twitching pain down arm and leg on opposite side, salivation and a general feeling of discomfort before the attack. The pain in most instances resembled that of migraine; in a few it was limited to the region around the eye, or in supraorbital nerve, and in one the whole head was involved. The duration of the attacks varied in different cases and in the same case from a few days to six months. The figures given, however, refer in some cases to the duration of the pain and in some to that of the paralysis. The intervals also varied, two weeks and four years being the limits. In at least sixteen, the attacks became worse and lasted longer. In all of these the paralysis, to some extent, became permanent. In a few only did the severity of the attacks decrease. In Von Hasner's case, the trouble came on before the establishment of the catamenia, later the attacks were coincident with them. In no other instance, I believe, has this coincidence been observed. In Dr. Wadsworth's case, toward the end of the headache, there was a discharge of ill-smelling fluid from the right ear. The child had chronic suppurative otitis. Here there was evidently a close connection between the attack and the ear trouble. The sister of this patient had become blind from post-neuritic atrophy, the neuritis having been brought on by meningitis from aural disease. In one case contraction of the fields of vision during an attack was observed.

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[1] Read before the Boston Society [illegible]

Senator divided these cases into two classes, the purely periodic with no symptoms between, and the periodic exacerbating ones. The doubt has been expressed, however, whether there ever has been a purely periodic case, it being claimed that a careful examination would always reveal some paralysis persisting. Charcot suggested the name "ophthalmic migraine," from the supposed analogy to migraine. Another suggestion has been to change the name to "recurrent ocular-motor paralysis" because of the different length of the intervals. Finally, it has been recommended to do away with the artificial division into exacerbating and purely recurrent paralysis, on the ground that the cases with a free interval later acquire some permanent paralysis.

The point of chief interest and importance is the nature of the trouble — functional or organic — and if organic, the kind and seat of the lesion.

Some have thought it functional, the analogy to migraine being strongly insisted on. Others have supposed a circulatory disturbance, which later gives rise to some permanent lesion, perhaps inflammatory in its nature. Von Graefe attributed the results in his case to a probable fracture of the base, which could have been followed by an ostitis or exostosis, this by inflammatory enlargement at times pressing on the nerve. He concluded that a progressive anatomical lesion was probable in every case. This was Manz's view also. Möbius and Von Hasner thought that in most instances the nucleus of the third was affected. Möbius referred the pain to an involvement of the descending band of fibres of the fifth, which lies above and a little to the outer side of the third nucleus. Mauthner and Manz inclined to an extra cerebral lesion.

In three cases there have been autopsies. In Gubler's case, which died in the fourth attack comatose, there was exudation around the right motor-oculi along the base of the brain and a blood-clot in the pons. Weiss' patient died of phthisis. The third nerve as it left the peduncle was flattened, grayish and covered with numerous granulations which contained tubercle bacilli. Thomsen's case died in an insane asylum. The right motor-oculi where it passed through the dura was gray and club-shaped; a fibro-chondroma had separated the fibres of the nerve but had not destroyed them.

The present case seems to throw but little light on the subject, except to emphasize the fact that the tendency of the disease is toward a persistence of the paralysis between the attacks. It is difficult to think of such a disease as functional, but there are certainly strong resemblances to migraine. The character of the pain in most instances and the accompanying disturbances in some are very similar. There have been though, as far as I know, no visual symptoms spoken of, such as are so frequent in ordinary migraine. Heredity and neuropathic tendencies are not so distinctly traceable. The occurrence of attacks in one case under the same conditions as previous epileptic seizures and the substitution of an ordinary migraine headache for a paralytic attack are suggestive. But the persistence of the paralysis points distinctly the other way. The history of Dr. Wadsworth's case is strongly indicative of organic trouble. It is not possible either to ignore the post-mortem findings in the three cases spoken of. In all these the nuclei were healthy, the lesion basilar.

It seems impossible that any process in the neighborhood of the nuclei, lasting so long, could affect the nuclei of the third without that of the fourth lying next to them or the neighboring third nuclei on the other side of the median line. Certainly the known nuclear ophthalmoplegias do not act in that way. It may be that there is no common cause for these disturbances, and it may be also that the seat of the trouble varies.

The prognosis, as far as it concerns improvement of the condition, must be considered bad.

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THORACOTOMY IN A CASE OF EMPYEMA FOLLOWING PNEUMONIA.

BY J. C. HILL, M.D., ROCKLAND, ME.

IN the early summer I was called to see Mr. N. B., aged sixty-three. The wife of the patient informed me that her husband, up to the time of my visit, had been without medical attendance, and had been confined to his bed for over two weeks. Her description of the case outlined very clearly a case of lobar pneumonia.

For the twenty-four hours preceding my appearance upon the scene, the patient had been having very pronounced and protracted chills. I found him with a temperature of 106°, and a pulse of 98, which was weak, steady and intermittent. The eyes were sunken and dull, the countenance livid and greatly emaciated; and the patient was fast succumbing to the malady which was seated upon him. Percussion and auscultation showed marked dulness over anterior and posterior region of lower right lobe of lung. There was noticeable bulging of the right thoracic wall. Patient was having night sweats, a constant cough, and expectorated a large amount of yellowish-gray matter.

Having satisfied myself that I had to deal with a case of empyema, I made an incision into the pleural cavity, two inches in length, in the seventh intercostal space, in front of the latissimus dorsi muscle, and immediately pus welled out of the opening until two pints had been accumulated in a pus-pan at his side. I inserted a drainage-tube (the siphon arrangement under water), and leaving stimulants, both diffuse and cardiac, left the patient for the night.

The following morning the temperature was 100°, and the pulse down to 80. The heart action was stronger and less intermittent. A quantity of pus was drawn out during the night, and lay congealed at the bottom of the receptacle. I removed the tube, and irrigated the cavity with a 1–5000 corrosive sublimate solution. The patient expressed himself as feeling greatly relieved. I put him upon hydrarg. corr. chlor., gr. $\frac{1}{50}$, t.i.d., kept up the stimulation, and prescribed extract of malt in wine-glass doses every two hours. The process of irrigation was repeated every other day for ten days, then twice a week. The discharge gradually grew less in quantity until at the end of the second week the flow ceased entirely, when I allowed the incision to heal.

The patient made visible improvement from date of operation. The chills discontinued, and in five days from the time the pleura was incised the temperature reached and maintained the normal figure. The corrosive chloride was omitted after the second week, and not resorted to again — iron, arsenic and strychnia being substituted. A rapid convalescence was reached and the patient is now, in spite of his age, vigorous, active, and in good health.

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Medical Progress.

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.,

Professor of Diseases of Children, Harvard University.

ANÆMIA OF MINERS IN CHILDREN.[1]

A **GRAVE** form of anæmia is produced by the presence of a worm in the intestine, the Anchylostonum duodenale, first described by Dr. Dubini, of Milan. The author has been able to observe twenty-one cases in children below the age of eleven. Intestinal symptoms are more common than in other forms of anæmia. The anæmia becomes rapidly worse. The fæces are very variable, often diarrhœic, sometimes streaked with blood; in other cases the stools are normal. The diagnosis is based entirely on the examination of the fæcal material, in which the eggs of the anchylostome are found. These are characteristic, being in segments — mono-, bi-, poly-cellular. The eggs of the ascarides lumbricoides often accompany those of the anchylostome. The disease arising in an infected locality (such as mines, collieries), the presence of other anæmics in the family, especially if among them there were miners or men in similar work, the resistance of the disease to different treatments, point to the diagnosis, and this is determined by the microscopical examination of the fæces. The treatment is by the ethereal extract of malefern. The dose in children should not exceed four grammes, and should be given in an emulsion of some essence to conceal the disagreeable taste. It is necessary to repeat the treatment several times (four or five) at intervals of two to three days. As a contribution to the pathogeny of this form of anæmia, numerous experiments upon animals were made, which demonstrated very beautifully the auto-intoxication which takes place. After having prepared the toxine of the urine from two patients, after the method of Brieger-Otto, rabbits were inoculated with progressively increasing doses. The animals presented, from the first injections, all the characteristic symptoms of the anæmia in question. Quickly, upon stopping the injections, the animals returned to a state of health. Control experiments with the urine of patients after the expulsion of the worms, produced no changes in the blood of the rabbits experimented upon.

ARSENICAL NEURITIS.[2]

Barrs showed before the Leeds and West Riding Medico-Chirurgical Society, a boy, aged twelve, who was almost totally disabled by palsy, following upon a severe attack of chorea, for which arsenic was given in increasing doses, the maximum dose being eighteen drops of the liquor arsenicalis, from November 12, 1892, to January 6, 1893. During the course of the chorea the knee-jerks were entirely absent, and, beyond a little sickness on two or three occasions, there were no symptoms of arsenical poisoning. The boy walked home from the hospital, a distance of a mile or more, on his discharge on December 6, 1892, when he was quite free from choreic movement, but the knee-jerk had not returned. He was readmitted a month later with serious loss of power in the arms, legs and trunk muscles, wasting of the affected limbs, and some anæsthesia, with tenderness of nerve trunks, dropped feet and hands, and loss of all tendon reflexes. Dr. Barrs thought the paralysis was due to arsenical neuritis and not to chorea.

PSEUDO-HYPERTROPHIC PARALYSIS.[3]

Pasteur showed before the Medical Society of London, a case of pseudo-hypertrophic paralysis in a youth, aged seventeen. The thighs were small, while the calves were characteristically enlarged. The wasted parts showed diminished electrical excitability. The case was remarkable in that it appeared to be an instance of the disease having become arrested in an early stage. The lad was intelligent, but his father was an epileptic.

CROUPOUS PNEUMONIA IN CHILDREN.[4]

The paper was read before the Medical Society of London, and based on 226 cases. Most cases occur during March, May and July; the fewest in January, August and December. They occur, as a rule, independent of antecedent disease, and in the great majority the onset could not be attributed to any definite cause. Fifty of the cases occurred under the age of five years, one hundred and twenty between five and ten, and fifty between ten and fourteen. The disease was most frequent at the ages of five and nine respectively.

Connecting his table with a further series of over seven hundred cases compiled by others, he found that the frequency of the affection gradually rose from the fifth to the twentieth year. Its onset was usually sudden and its chief symptoms of invasion were vomiting, cough and pain, while rigors and convulsions were very infrequent, and hæmoptysis extremely rare. An arrangement of symptoms into groups showed that the nervous system was the one most variously affected. The average daily temperature before crisis was 103° and 104° F., and in about one-seventh of the cases, the fever was of a hectic type, though in only three was such associated with pus in the pleural cavity. The sixth was the commonest day of crisis, it being very frequent on the seventh and eighth days. In basic pneumonia it was rather later than in apical. A dull tympanitic note was often present before any differentiation was detected in the character of the breath sounds. In one hundred and forty-six cases, the base of the lung was attacked in sixty-nine, the apex in forty-five; in the remainder the seat of the disease was in other parts. The most rapid respiration noted was 68. Typical rusty expectoration was present in seven cases, the youngest being six years old. Pleurisy coexisted in sixteen cases, pus being found in three. Gangrene of the lung occurred once. A soft systolic murmur was detected as arising during the course of the disease in six cases. Pericarditis was noted in one case, the patient having had rheumatic fever previously. Albuminuria was discovered during the disease in seven cases, and herpes in thirty-six, being in one case on the wrist as well as the angle of the mouth. Delirium was more frequent during the course of the disease than at the onset, and more in apical than basic cases. In the treatment, ice should be used with great caution when the pneumonia was on the left side, as the heart might become slowed and dangerous symptoms arise. As to alcohol, discretion was required to select the cases in which it was needed.

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[1] [illegible]

[2] Barrs: British Medical Journal, [illegible]

[3] Pasteur: [illegible]

[4] [illegible] British [illegible] Journal, [illegible]

CHOREA IN A BOY: NECROPSY.[5]

The patient, a boy aged nine years, died December 29th, two months after the onset of the chorea, which was bilateral. A post-mortem examination was made in the afternoon. Rigor mortis had commenced in the lower extremities; no subcutaneous nodules were found. The pericardium was rough and thickened, covered with fibrinous exudation, and contained a considerable quantity of turbid effusion. The heart was slightly hypertrophied, the muscle paler than normal, but not friable. There were some very small vegetations on two of the aortic valves, and less on the mitral; the right side was normal. There were evidences of broncho-pneumonia in both lungs; the brain and abdominal viscera were normal. The rarity of fatal cases makes this one of interest, although there is no fresh light thrown on the pathology of chorea.

SCLEREMA NEONATORUM.[6]

The infant was first seen when four days old. On the second day after its birth, the peculiar condition of the skin drew the attention of a neighbor. The following appearances presented themselves when first seen: The legs, feet, arms, hands, back of shoulders and upper part of chest had the feeling of india-rubber stretched over a frame. The color of the skin varied from a deep purple to a light pink. It cried feebly, and every few seconds stretched its body to its full extent, as if struggling for breath, or as if it felt stiff all over. The pulse was 120 beats per minute, and the temperature 97°. There were no pulmonic nor cardiac abnormal sounds. The bowels had moved shortly after birth, but not again. The constipation was most obstinate. Hot-water baths and friction of the whole surface of the body was given. It was enveloped in cotton and wool, and a temperature of about 75° was maintained in the room. Several punctures in the skin were made with a view of releasing any fluid that might be there, and thus relieving the tension, but only a very little blood and yellow fluid escaped. On the sixth day the temperature fell to 87°, and the infant died that night.

ETIOLOGY OF "RÖTHELN" (GERMAN MEASLES).[7]

Reference was made to the clinical symptoms generally known as rötheln, rubaoloa, or German measles. Attention was drawn to the extreme diversity of opinion held by various writers on the etiology of this affection, and it was pointed out that these opinions differed not only as to the essential nature, specific or otherwise, of the contagion, but as to what might be looked upon as the fundamental symptoms of the disease. The author endeavored to prove, from clinical as well as theoretical grounds, that an hypothesis was not untenable which assumed that the specific contagion of measles, being a living organism, as such would be liable to undergo variation, and would be subject to evolutional changes in adapting itself to varying conditions of "soil," and that some such hypothesis would afford a clue towards explaining the many affections of exanthematous character which departed more or less from the true measles type. Clinically, many conditions were known as rötheln. These conditions differing widely in both intensity and symptomatology, the writer asked: "Are such affections due to the same contagion, assuming different degrees of force or intensity, and profoundly modified by different states of 'soil' and environment; or are they due to contagia specifically distinct, the one from the other?" In support of the hypothesis, attention was directed to many points in the clinical history of measles and so-called rötheln. These points were severally discussed under the following heads: Personal experience of the various forms of exanthemata differing materially from ordinary measles. The variation of symptoms found with measles. Immunity: does it depend upon intensity? Will a mild attack of measles confer immunity in the same degree as does a severe one? Second attack of measles. The modification of measles by environment and by different "soil." The mutual want of protectiveness between rötheln and measles: may it possibly depend upon degrees of intensity? Is the general type of measles less severe than formerly? Special reasons why the contagion of measles is placed under conditions which will apparently favor variation.

THE PERSPIRATION IN CHILDREN IN PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS (IN SCARLATINA AND NEPHRITIS).[8]

The perspiration in healthy children is chiefly influenced by the relative moisture and the temperature of the surrounding air, in inverse proportion to the former and in direct proportion to the latter.

The ordinary variations in atmospheric pressure have no noteworthy influence. The perspiration in healthy children is inversely proportionate to the age and the body temperature. Introduction of food and drink increase the perspiration. In scarlatina, in all stages, the skin perspiration is diminished. The most notable retention of water is in scarlatina just before the appearance of albuminuria and with the appearance of uræmic symptoms.

Affection of the kidneys has for a cause this diminution of the skin perspiration.

Increase of the moisture and lowering of the temperature of the surrounding air favors the occurrence of scarlatinal nephritis. Therefore, it is to be recommended to keep scarlatinal patients in dry and warm air. Warm baths increase the skin perspiration notably, while inunctions of fat diminish it. Therefore warm baths are to be recommended as early as possible for scarlatinal patients, while inunctions of fats are to be avoided.

NINETY OBSERVATIONS ON ACUTE ARTICULAR RHEUMATISM IN CHILDHOOD.[9]

This affection is less common among children than among adults. The influence of the seasons does not appear very clearly, but heredity plays an important part in its production. Two peculiarities are noted with regard to localization: first, as in adults, its rarity in the hip-joint; second, the frequency in children as compared with adults, of manifestations in the vertebral column. General phenomena are commonly but slightly marked. This is perhaps due to their relation to the number and intensity of joint-affections. The thermometric curve, as with adults, is irregular, and bears a relation to the exacerbations and extensions of the lesions. Sweating and sudamina are observed; also hæmorrhages, and particularly nasal hæmorrhages. The urine presents no differences from that of adults. Anæmia is an almost inevitable consequence of the rheumatism of children, as that of adults. It surpasses that of any other disease, with the possible exception of malaria, and it leads not only to pallor, but to souffles in the neighborhood of the pulmonary artery and of the vessels of the neck.

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[5] Wm. Gosse: British Medical Journal, London, 1893, i, 231.

[6] J. Lindsay Porteous: New York Medical Journal, 1893, lvii, 442.

[7] Donald Hood: British Medical Journal, 1893, i., 582.

[8] B. Ssokolow: Arch. f. Kinderh., 1892, xiv, 257.

[9] La Province Medicale, Nos. 19, 20 and 21, May, 1892; Revue de Med. Chir. Obstet., June 22, 1892; Revue Mensuelle des Maladies de L'Enfance, June, 1893, page 278 (Perret).

Much the most frequent complication is endocarditis. It is very difficult to determine the precise moment when endocarditis begins, for it can only be diagnosticated when the souffle appears. It persisted in the great majority of cases until they were able to be out; nevertheless, in eight cases it became materially lessened, and in five it disappeared. In one of these last, resolution took place very slowly, and it was not until eight months that the child had regained its former state. Therefore one should not be in a hurry to make the diagnosis of a permanent lesion. Pleurisy must be cited among other complications. When it occurred, it was much more often in the beginning than in the course of the disease. Six cases presented a more or less abundant eruption.

SPASMODIC MOVEMENTS OF THE HEAD IN INFANTS.[1]

Five cases of rotatory spasms of the head in infants are reported. The author proposes the name of "gyrospasm" for this condition, but does not suggest that its etiology is different from that of other spasmodic movements in infants, such as nodding. In one case only was there associated nystagmus, and in this case the movement was confined to one eye. In another case there was convergent strabismus. Gyrospasm was first noticed in these cases at the ages respectively of three months, four months, five months, seven months and eight months. "Taken together, therefore, the cases do not support Henoch's view that dentition is a cause." Pertersen suggests that in most of the cases cerebral concussion will be found to be the determining factor, and observes that in adults severe concussion may give rise to rapid though temporary nystagmus. The prognosis is, he believes, good; but a recovery may be hastened by the administration of bromide of potassium in doses of from one and one half to three grains thrice daily.

A MATERNAL GUILLOTINE. — The Boston *Herald* relates an actual occurrence which is interesting as an example of the entire disassociation of meaning and intent from the words actually used by an irritated person. The writer when shopping overheard the following remark made by a woman who was buying some handkerchiefs in a crowded store. Her little girl was idly twirling a box by the string, while waiting by her mother's side. The string slipped off. The mother saw it and snapped out: "You bad, naughty girl; I'll chop your head off."

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[1] Pertersen, Archives of Gynecology, Obstetrics and Pediatrics, January, 1893, p. 15.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.
OBSTETRICAL SECTION.

G. H. WASHBURN, M.D., SECRETARY.

REGULAR Meeting, Wednesday, March 22, 1893, DR. INGALLS in the chair.

DR. C. W. TOWNSEND read a paper on

PLACENTA PRÆVIA.[1]

DR. E. REYNOLDS: I think in dealing with placenta prævia, it is necessary to divide the subject, first, as to the degree of prævia, and then, as to the period of pregnancy at which hæmorrhage begins. Few things of serious import are more easily managed than marginal placenta prævia; its mortality, untreated, is not very high. Almost nothing is more creditable to an obstetrician than to get out of a central implantation with a living mother and child. Few emergencies are more dangerous. The question of treatment, apart from the greater urgency of the more complete prævias, rests mainly upon the period of pregnancy at which hæmorrhage occurs; more on the period at which the first hæmorrhage occurs than on the amount of hæmorrhage. When it occurs in the second third of pregnancy I think there can be but little question of judgment as to the treatment which should be employed. When hæmorrhage occurs at that period the dangers to the mother, which must necessarily ensue, to my mind, greatly outweigh any possible question of the survival of the child, which has not a very good chance if left to nature. I should unhesitatingly interfere in the second third of pregnancy so soon as I had the diagnosis established. When the hæmorrhage, however, first appears in the course of the seventh calendar month or even when six calendar months have been completed, I think the question of treatment is an extremely delicate and difficult one. The question is whether the case may be carried along until the child reaches the period of viability, with fair regard to the safety of the mother, and I think it must be determined largely by the circumstances of the patient rather than by any other consideration. If she is so placed that she can command the constant attendance of a physician, or if she is in a hospital where aid can be rendered at any moment, I think it is fair to carry her along so long as the hæmorrhages do not distinctly weaken her and raise her pulse. If she is in a situation in which she is distant from competent aid, is unable to command the time of any physician to such an extent that he will be safely within reach, I should prefer to sacrifice the fœtus; and I should do that as readily for moderate bleeding, with a well established diagnosis of placenta prævia at six months, or in the seventh month, as I should for moderately severe hæmorrhage. If it is a very bad hæmorrhage, of course we must interfere. A first hæmorrhage of one drop may be followed at any moment later by a hæmorrhage that will be promptly fatal within a few minutes. Of course with the circumstances of the patient must be included the degree of prævia; yet even a marginal placenta prævia in a patient remote from aid is a pretty dangerous thing to let alone. I think that question of interference in the course of the seventh calendar month of pregnancy is the most difficult question in the whole subject of placenta prævia.

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[1] See page [illegible] of the Journal.

I want to speak of one case illustrative of that point, that I have recently had. I have seen a number of cases of placenta prævia, and I have never seen but one patient who has died of placenta prævia and that was this one. Last autumn I saw in consultation a lady, six and a half months along, who had had moderate flowing which had been checked promptly by putting her to bed. It had occurred, I think, twice. She was in good condition. On vaginal examination I thought I could feel the edge of a marginal placenta prævia, or perhaps hardly more than a low implantation, through the cervix. The flowing was very slight at that time. She lived next door to the doctor. Within one hundred yards there were two other thoroughly competent physicians. Her circumstances were such that they were able to make an arrangement by which one of the three physicians should be within call all the time, and I advised him to carry the case on until the child was viable, stating my opinion that if the lady was kept in her rooms, and in bed whenever there was any question of flowing, the chances were that she would go along until the child was in a condition of good viability, or perhaps to term. She went on about a month without losing a drop of blood. Then the physician was called to find her exsanguinated, arriving within a few minutes of the first appearance of bleeding. He immediately etherized, dilated, turned, and delivered a living child, had but slight postpartum hæmorrhage, and yet lost the patient within an hour. I still think at that period of pregnancy and under those circumstances, that is, where the patient could command constant care, it is only fair, in view of the value of the life of the child, to carry the case along to viability, or until something in the way of severe hæmorrhage urges immediate interference. I report that case as illustrating the fact that after a very slight hæmorrhage we are taking a risk for the mother for the sake of a child which will shortly be viable, and that, however slight the first hæmorrhage may have been, however high the implantation of the placenta, this risk is never absent. When the first hæmorrhage occurs after the child is viable, there is less question about the treatment. In such cases outside of a hospital, or without the most constant attendance of a competent physician, I should interfere, in the belief that here the undoubted risk to the life of the mother more than counterbalanced the risk to the child.

As to treatment when interference has been resolved upon, I think there is but rarely any choice, and that internal podalic version is generally the better treatment. In marginal cases of partial prævia, I am inclined from a moderate experience in the expedient, to prefer the performance of version through the undilated os by the use of two fingers, rather than dilatation and the whole hand, a tamponade of the lower uterine segment by the half breech and waiting. It is much more rapid and I think is, on the whole, a less severe operation to the mother. I have not lost a child in that way. I think that two things are to be spoken of further in connection with the treatment of a case that must be interfered with at once. The first is that the very moment the diagnosis is made, I think that the hand should be passed into the vagina, one finger passed into the os to nearly its whole length and the placenta detached from the margins of the os for a distance of two or three inches. In my experience that expedient is invariably followed by a considerable increase in the dilation of the os and by prompt, though temporary, arrest of flowing. It gives the patient a chance to recover a little from such loss of blood as may have occurred, and gives the physician time to make his preparations. Hæmorrhage may recur at any moment and the fact that it has stopped after the detachment of the placenta, should not be allowed to induce the physician to absent himself a moment from the bedside. Further, the great liability of postpartum hæmorrhage after placenta prævia and the great danger that follows slight additional losses of blood after moderate hæmorrhage has once occurred, should, I think, make it incumbent on every one who has to deal with a case of placenta prævia to use the most careful manual guarding of the fundus from the moment he begins his delivery, to have the fundus followed down the moment the extraction of the child begins, and have it guarded by the hand during every individual second that follows the delivery; without the omission of a single second, until he is convinced that the retraction of the uterus is sufficient to guard the patient against any likelihood of postpartum hæmorrhage. The hand should be held against the fundus and at any sign of softening of the uterus, rapid, light friction should be applied to the fundus through the abdominal wall. It is my experience in labor in general, that anticipation of postpartum hæmorrhage, does more to prevent loss of blood by postpartum hæmorrhage, than all the means of controlling postpartum hæmorrhage that are within the control of the profession, and I think it is very important in placenta prævia to remember the likelihood and great danger of *postpartum hæmorrhage.*

DR. KINGMAN reported

TWO CASES OF ACQUIRED COMPLETE ATRESIA OF THE VAGINA.[2]

DR. E. W. CUSHING sent the following history of a case, which may be of interest in connection with Dr. Kingman's paper:

Mrs. M., of Canton, Mass., about twenty-five years of age, entered the Charity Club Hospital in the following condition: There was a complete rupture of the perineum extending some two inches into the rectum; there was a large opening in the base of the bladder, and the vagina was apparently perfectly obliterated, as not enough space remained to pass a probe up towards the uterus. This condition was the result of labor some three months previously; the delivery had been effected with forceps with great difficulty. I first repaired the vesico-vaginal fistula and the perineum at one operation; the perineum united well, but in about ten days the bladder began to leak again. At a second operation I separated with great difficulty the anterior and posterior walls of the vagina, as far as seemed safe and possible. To do this required real dissection; if the woman had not previously had a child, I would not have believed that she had ever had a normal vagina. At length, however, I reached the cervix with an opening sufficient to admit the finger, and packed with iodoform gauze the channel thus formed; I then proceeded to close the vesico-vaginal fistula, which was much smaller than at the first operation. This time it united. The packing of gauze was renewed at intervals for some three weeks, when I again gave the patient ether, and working laterally with the finger and scissors, I was able to enlarge the

[2] See page 615 of the Journal.

vagina, and also to separate the adhesions in the anterior and posterior vaginal fornices, so that the cervix was liberated. The passage thus re-established was packed at due intervals with iodoform gauze, and the patient finally left the hospital in a good condition. She soon became pregnant again, and by my advice went to the Boston Lying-in Hospital, to apply for admission for an operation for premature delivery, owing to the contracted pelvis. I learned afterwards, indirectly, that although such an operation was recommended to her by the physicians of that institution, she did not appear in due season, but was finally delivered there at term.

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BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

[illegible], M.D., SECRETARY.

Regular Meeting, Monday, October 23, 1893, the President, Dr. C. F. Folsom, in the chair.

Dr. F. I. Knight read a paper on

SENDING PATIENTS AWAY FROM HOME.[1]

Dr. E. N. Whittier: Mr. President, it is my privilege, through your courtesy, to express the high appreciation entertained by the Society for this timely presentation of a most important subject, at the hands of our distinguished associate, for to him more than to any one else in this country is due the large advance made in the treatment of tubercular diseases by the method known as "high altitudes."

I have been pledged from my earliest recollection to the expression of a favorable opinion, as to the results of a judicious selection of cases to be "sent away from home," particularly when such selection is combined with an accurate knowledge of the various health resorts: for as far back as the time when cod's livers were fat and frequent in the pure water of Casco Bay, I remember our hired-man in the garden back of the barn, trying out cod-oil, then in its therapeutic infancy and but little known to commerce; that on three separate occasions the family gathered at the bedside to receive the last words of one blanched with hæmorrhages. I shall never forget the sublime courage imparted by the promise of the physician, that though the distance was long, and the months of separation would be wearisome, a return to fair health could be assured by going away from home; the voyage to South Carolina was most distressing, the journey across the State most tedious, and a planter's house in Aiken the only place then affording sheltering care. A second winter completed the good work begun in the first, and the patient returned home free from all signs of pulmonary disease, to live many and invaluable years, yielding at the last to an acute disease bearing no relation to that, for which in early years so great anxiety had been experienced and for whose cure a measure then rarely appealed to, was resorted to and not in vain. It is for this reason I advocate careful study of the rules set forth by Dr. Knight, and would ask your cordial commendation of his insistence of the principle now well established, that by a wise selection of patients and places tubercular processes can be arrested and cured. It is of frequent mention that about 30% of the residents of Colorado are of tuberculous history. Dr. Solly states, however, that in his experience of seventeen years in that State he has known of but four cases of phthisis contracted there, a most remarkable comparison. The conclusions now reached are based upon the tabulation of results in nearly five thousand cases, at the hands of sixteen or seventeen of the most competent observers, here and abroad, and represent the most careful painstaking observations of cases, during the earlier stages of the disease, in advanced stages, through all the time they were under treatment, and for considerable time afterwards.

These results show the marked advantages, claimed by Dr. Knight in his papers on the high altitude method of treatment, as well as the fact that the sanitariums and closed resorts do not offer in any degree the inducement found in the open-air resorts. For the percentage of cases in closed resorts and sanitariums, is only ten, as compared with thirty-two per cent. in open-air resorts, for phthisis in all stages; while for the first stage of this disease the closed resorts give only twenty per cent. against sixty-two per cent. for the open-air method: the conclusions are irresistible. We can, therefore, maintain in practice, that there is abundant promise of good result, and of benefit commensurate to the large effort and sacrifice frequently and freely made.

Dr. Knight makes a strong point when he discusses the financial side of the question, the large expense incident to the process of sending patients away from home, and the necessity of learning before advising change of climate, whether or not it would be reasonable to expect the patient to follow such advice if given. To hold out to a patient the promise of cure by going away from home, when it is impossible to obtain the means to do it, is a refinement of thoughtless cruelty too often inflicted by consultants, neglecting to secure information, at hand, to guide them. I know that physicians sending their patients for advice and opinion, are sometimes made to feel not only that the consultant is too careless, but that he shirks the responsibility in all forms of any process which is in any sense a departure from an inflexible inelastic rule of sending away from home all whose physical condition offers hope of remedy.

Dr. S. W. Langmaid: I regret very much that I did not hear the whole of Dr. Knight's paper, but I have no doubt that I am familiar with what he has said in it from a knowledge of his previous papers, to which I heartily subscribe. I do not know that I can say anything in addition to what he has said. The only thought in my mind is in regard to the influence of altitude. Taking it in a large way, it has seemed to me that altitude has much to do with cure. One may obtain palliation without altitude; but, so far as my experience goes, cure has been accomplished ordinarily in those cases in which patients have been sent to some considerable altitude, like Colorado. This is generally accepted, I believe. Here, then, is an important factor in the selection of residence. Where cure can be hoped for, a region of high altitude may be selected even if all the conditions of the place may not be in accordance with the patient's comfort. Other considerations enter into the selection of a residence for those who are manifestly beyond the hope of cure; considerations of comfort, of distance from home and friends, etc. By formulating his views, in this and others papers, Dr. Knight has greatly assisted those who have the responsibility or choosing residences for their patients.

Dr. F. B. Greenough: I would like to endorse two practical points; one is the absurdity of sending patients in whom the disease is too far advanced to health resorts to die. In the old days people with tuberculosis were sent South and died like sheep. The other point is the absolute absurdity of sending a patient to Colorado or to any health resort who cannot buy bread and butter. It would be as absurd as to advise dispensary patients to buy woodcock and champagne.

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Dr. G. W. Gay: I think this is one of the most important subjects that could be brought up at this time. It was very forcibly brought home to my mind last winter, which I was obliged to spend on the Pacific coast. There one is brought in contact with this subject all the time. I think the most pitiable objects I ever saw were those far gone in consumption sitting on hotel piazzas trying to keep warm, and to look on the bright side of life. Many of these poor creatures would have been infinitely better off at home under any circumstances; therefore I think this subject cannot be too widely agitated, in order that properly selected cases may be sent away to these various health resorts. That infinite good is done in many cases everybody must bear witness. I had this forcibly brought to my notice last fall in the case of a young lady friend, who was examined by Dr. Knight and sent to Colorado. She was in a deplorable condition, with high temperature, quick pulse, constant cough and rapidly emaciating. It seemed as though the young lady could not live six months here. At Dr. Knight's suggestion she went to Colorado Springs, and was placed under the skilful care of Dr. Hart. It was with the greatest difficulty that she reached there. After arriving at her destination she had to stay in bed about three weeks before she could breathe with comfort. She remained during the winter and spring and in the summer went to some resort near by. The result was that she got perfectly well so far as any physical or objective sign could be detected. Rather against our advice, she has come back here for the winter. I think this is the most marked case of benefit from change of climate I have ever seen.

There is another practical point, which people should understand who go West, and that is, as to the kind of weather they are to experience there. They are apt to think that because the sun shines the year round it must be warm, and consequently they take thin clothing. They had better put their thin clothing at the bottom of their trunks, and have all their warm clothing on top, because the climate of the Pacific is peculiar. While in the sunshine one is comfortable without an overcoat, but if one goes into the shade he needs an overcoat. At San Diego I was fortunate enough to have a room on the sunny side of the house, and many an afternoon I sat writing with my window open and without a coat, while across the hall my neighbors had to have a fire. In the shade the climate is cold, in the sun warm. As to having hot weather, they may have it in the summer; they certainly do not in the winter or spring. Personally I never had so many colds, as while on the Pacific coast. I think that was because I was ignorant of the climate, and did not know how to dress.

The mental characteristics of the patient are important. Some patients are contented anywhere, others nowhere. The latter, I should say, had better stay at home. If they go West, whatever their surroundings, they will be homesick and unhappy, and derive little benefit from the change, whereas, those who look upon the bright side of things, would stand a much better chance under the same circumstances than the first class. Those are points that will be brought out more and more by such papers as Dr. Knight's. For my part I am very much obliged to him for presenting it to the Society.

Dr. Knight: I am very much obliged to the gentlemen for endorsing my remarks. I wish to say one word in regard to the patient Dr. Gay has mentioned. I do not remember the exact condition of the young lady, but I should not like to have the Society think that was exactly a picture of the case I would usually plunge into a high altitude. I do not remember what determined me to feel that that was the place for her, but ordinarily a very high temperature and very rapid pulse and rapid respiration would make me hesitate to send most patients at once to a very high altitude, but there was undoubtedly something about the case which made me feel that that would be the best place for her, and so it proved.

Dr. Edwin E. Jack reported

A CASE OF RECURRENT PARALYSIS OF THE OCULOMOTOR NERVE.[2]

Dr. G. L. Walton: I do not remember having seen one of these cases. It has seemed to me they must be rare in this country, especially since a conversation with an oculist who has had a large experience in one of the ophthalmological clinics, and who said he did not remember having seen a case. On general principles and judging from the literature there would seem to me to be two classes of these cases. I can hardly believe that all those collected come under the same head. A patient, for example, who becomes comatose and dies, revealing on autopsy an exudation at the base of the brain involving the nerve, can hardly be classed along with the cases (rather more typical), which begin in infancy or early life and recur at more or less varying intervals until middle or advanced life with no effect on the general system, no other paralysis or any important symptoms between the attacks. It seems to me that in this class of cases we have something analogous to migraines and also analogous to the transient monoplegias, hemiplegias which we call hysteria, the typical hysteria of Charcot, in which there is a real paralysis of one or more extremities, which is not under the patient's control but of which we do not understand the pathology, analogous again perhaps to some of the transient paralyses occurring in organic disease where after death we do not find anything to account for the symptoms. I remember a patient with general paralysis who died in an attack of hemiplegia, where the post-mortem examination showed no definite localized lesion in the brain, to gross appearances at all events, to cause any such symptom. I understood Dr. Edes to suggest in a paper read last year before the Boston Medico-Psychological Society that there was in these cases perhaps a localized œdema, and it seems to me that is not an unreasonable theory. We see in hysteria in certain parts of the body œdema, swelling of the ankle or wrist, for example, which lasts a certain length of time and disappears. I have seen the leg so swollen that the skin would crack and the leg become superficially gangrenous, in a case of hysterical hemianæsthesia and hemiplegia of that side; typical hysterical symptoms persisted a number of years in this case and the patient was sent to the Home for Incurables, where she recovered completely. Now it would hardly do to call that functional, for there was a definite lesion, and yet it disappeared. I have myself advocated rather strongly in these cases of hysteria where there are definite paralyses, going back to Eulenberg's theory of disturbance of the vaso-motor system in migraine, although a good deal of contumely has been cast on vaso-motor theories. I cannot imagine anything else than a vaso-motor disturbance, however, which will give rise to paralyses that will suddenly disappear and suddenly recur or suddenly shift from side to side of the body. I cannot imagine a dynamic change working in this way. I can imagine also that there is localized œdema of the brain in some of the more lasting cases. Of course, it is all theory where nothing is found post-mortem, and one person's judgment is perhaps as good as another's in ante-mortem pathology. Probably some cases reported are the results of organic disease and perhaps have been confounded with these recurrent paralyses of functional, perhaps reflex character.

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[2] See page 617 of the Journal.

Dr. S. G. Webber: These cases are interesting, especially when grouped with other cases of recurrent or periodical paralyses. Speaking first of such cases as have been reported, I think I should agree with what Dr. Walton has said about the vaso-motor condition, that many of them are reflex in their origin, but it is not always easy to find the seat of the trouble which causes the reflex action. I do not remember any reported case where the condition of the eye was examined to discover whether there was any disturbance of vision, such as is found in so many cases of sick headache, which produces the sick headache, and it seems to me it would be worth while to make such examinations when the opportunity offers, to examine the eyes carefully to see if there is any refractive disturbance. I do not know why refractive disturbance should not cause motor as well as sensory trouble, why it should not cause paralysis of the motor oculi nerve as well as sick headache or, as in some cases, spasm.

The case of Thomsen, which came to autopsy, is interesting and instructive. Thomsen, I believe, reasoned that it could not be a disturbance of the peripheral nerve, that it must be a disturbance of the nucleus of the nerve. Some time afterwards the patient died and there was found a growth around the nerve. The fibres of the nerve were pressed apart by the abnormal growth. The nerve fibres on both sides the tumor were healthy and the paralysis was evidently due to congestion temporarily increasing the pressure. It is hardly possible that every case can be explained in that way. In fact this case by its rarity would be a proof that the lesion in periodic paralysis is generally not peripheral, not organic. The very singularity of this case would make it more likely that in other cases the paralysis is due to local congestions of the nerve centres. Most peripheral disturbances would destroy the fibres of the nerve, and there would be a more decided and absolute loss of power which would be persistent. The very fact of the periodicity and of the complete recovery in the intervals would exclude the peripheral origin. Any gross lesion near the nucleus could hardly be accepted as a cause, because if large enough to produce so much disturbance it would be likely to produce still more disturbance, and even a small growth near the nucleus would affect other functions if it did not affect the nucleus itself, and if the nucleus was affected by other than vascular changes we should have permanent symptoms which in many cases we have not. To be sure one class of these cases shows symptoms connected with the limbs and various other disturbances which must be due to gross lesions, but I am speaking of that class of cases in which there is simply temporary motor oculi paralysis without any other symptoms. There are probably two classes of periodic paralysis, one with gross lesions, one without. In the former there are other nerves affected and the disturbance is more permanent. I should rather favor the reflex vascular disturbance as the probable cause in cases truly periodic. There is one peculiarity in many of these cases which gives a little hesitation in fully accepting this and that is that after long continuance of the paralysis some of the symptoms become permanent, certain muscles, perhaps the superior rectus or the levator of the eyelids or muscles of accommodation remain permanently affected, showing that a permanent change has taken place, but this may be the result of repeated vascular changes.

I said that these cases were interesting with reference to other similar cases. I had a case of periodical aphasia once under my care. At first the patient was completely himself between the aphasic attacks. Later the attacks became rather more severe, lasted longer, and the patient between the attacks would miss words or use wrong words in talking, no more than some persons in apparent health would do; but as the attacks continued in frequency they became still more severe, and at length he was not able to talk properly between the attacks and not able to attend to business. He was put in an insane asylum. He died; and at the autopsy there was found more or less meningeal adhesion and some softening of the cortex, especially in the neighborhood of the island of Reil. Some of the cells of the brain had undergone fatty degeneration, and the small arteries were calcareous with degeneration of the cells, so that on cutting the brain the arteries were pressed down by the knife, and as the section was made the arteries projected as small twigs above the cut section and there was a little grittiness to them. The aphasic attacks were at first probably purely vascular. Of course later there was inflammatory change of the membranes and cortex as you find in general paralysis.

A peculiar case which I had and which was more of the nature of spasm was that of a man, seven members of whose family were similarly affected. The affection consisted of attacks of more or less difficulty in walking, chiefly stiffness, but when these attacks came on at night he would wake up in the morning unable to move. His whole body would be helpless. The attack would last until about noon when he would recover the power of motion. That was perhaps stiffness rather the opposite of paralysis, and it is possible the man may not have known the difference between contraction or rigidity and paralysis.

Five cases of general periodic paralysis have been reported by Consot; several of the five patients were of the same family. There was paralysis of all the limbs, the attacks recurring every day in some of the patients, in others at varying intervals from a week to ten or fourteen days. The attack lasted from five or six to ten or twelve hours, some longer. There was complete loss of power of motion and complete recovery. The attacks began in comparatively early life; in some of the patients they continued till quite late in life. One patient had no more attacks after her first pregnancy. Westphal has reported a similar case of periodical paralysis in which there was complete loss of motor power in all the limbs with loss of electrical reaction which lasted a certain length of time and recurred, and in which there was complete recovery between the attacks.

Now these are very peculiar and singular cases and they seem to have an analogy to those that were reported as well as the cases of hysterical paralysis which Dr. Walton has referred to, and we cannot think of these cases of total paralysis as having any other source than the brain, that from some cause either by reflex influence, or by some other influence upon the circulation, there has been a vaso-motor disturbance which has destroyed the power of the cells to respond to the will. I suppose it might be called an inhibition of the motor power. I should be rather inclined to say it was a vaso-motor disturbance. It would be valuable and interesting if we could have more autopsies, but unfortunately we have not, and we are in the dark and have to grope about reasoning from analogy rather than from facts.

DR. P. C. KNAPP: I have been so fortunate as to see two cases in which I have made this diagnosis. The first case was referred to me by Dr. Wadsworth and is the one which he reported to this Society some six or seven years ago. The other case I hope to publish later. I would take issue with both Dr. Walton and Dr. Webber in regard to the pathology of these cases. In the first place, I question whether we can regard them as being analogous or akin to migraine, although Charcot has given the cases the name ophthalmoplegic migraine. I would agree with Mauthner in his conclusions that the difficulty is more probably with the oculomotor nerve after it leaves the nucleus. The fact that the condition is always unilateral, always recurring on the side in which it began in later attacks, speaks somewhat against the involvement of the nuclei. Furthermore, in the majority of cases the internal muscles of the eye are affected as well as the external, while in the nuclear palsies the accommodation and the movements of the iris are not usually affected. I must confess myself also sceptical in this as in many other affections in regard to the vaso-motor theory. We must not forget that in this affection there are only twenty-eight cases on record with three autopsies, but in every one of those cases there were distinct lesions found in the third nerve, either a tumor or inflammatory exudation, and in many of the other cases the clinical symptoms were such as to indicate some lesion in the neighborhood of the nerve. It seems to me, therefore, that we must confine ourselves to the limits of absolute knowledge without going into theoretical pathology, and absolute knowledge points as far as we have it to distinct changes within the nerve itself. In regard to the analogy and kinship to hysteria, that seems to me most remote, I do not know of a case of hysteria with the history of paralysis of the third nerve involving the external and internal muscles of the eye.

DR. JACK: I do not see how œdema can explain the persistence of the paralysis. Dr. Wadsworth's case, which seems to be so clearly connected with the otitis, cannot be explained in that way. One of the typical cases was in a tabes patient and it was considered that there was a connection between the two troubles. If this is true the paralysis in that case was certainly non-functional. It seems to me that the theories most distinctly in favor of the migrainous character of the affection are the accompanying disturbances.

Möbius thought that if there were a basal lesion the pain would not cease with the appearance of the paralysis. He therefore placed the origin of the pain near the nucleus. I would add to the reason which Dr. Knapp gave against the nuclear origin of the trouble, the non-involvement of the fourth nucleus and the completeness of the ptosis in most instances, the ptosis in known nuclear ophthalmoplegia being usually slight.

Cases analogous to these involving other nerves, the facial especially, have been reported. In one case there was in the different attacks an alternate paralysis of the facial and abducens.

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Recent Literature.

Chirurgie des Voies Urinaires: Etudes Cliniques. Par le DR. E. LOURNEAU. Bordeaux: Feret et Fils. 1894.

Under the above title the author presents a varied assortment of clinical observations, together with his comments upon a number of cases of diseases of the genito-urinary organs. Many of these cases are sufficiently interesting in themselves; but they offer too little that is new or important to be considered valuable contributions to the subjects which they illustrate.

The observation which seems to us the most instructive is No. VII, which contains the reports of seven cases of chronic hydrocele, the cause of which in each case the author considers to have been urethral stricture — the latter being responsible for chronic inflammatory areas in the deep urethra and in the tail of the epididymis. One of these cases is very striking from the fact that hydrocele developed in the course of the formation of a stricture, disappeared spontaneously after an internal urethrotomy, recurred later as double hydrocele synchronously with the recontraction of the stricture, and again underwent spontaneous cure when the stricture was dilated.

The work suffers much from the diffuseness of the author's style in many places. A conspicuous example of this fault is to be seen in Observation III, which relates a case of the impaction of a bit of a pipe-stem in the urethra and bladder of a young girl. Six pages are occupied by the report of this case. All that is at all essential is contained in the space of a page and a half, the remaining pages being filled with such details as the visits of the mother and daughter to the doctor's office, the anger of the girl's father at the mysterious loss of his pipe, etc. These matters are, it is true, dealt with in a manner sufficiently entertaining, but scarcely appropriate to the serious consideration of the case *per se*.

The introduction of somewhat elaborate reports of such cases as those of a peri-urethral abscess occurring in the course of an acute gonorrhœa, or of a certain abnormality of the meatus urinarius, seems rather trivial.

The book would gain much if it were reduced to one-half its compass. We must confess that we do not find in it a *raison d'être* for so imposing a volume; nor do we think it will appeal strongly to the profession at large.

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THE PATHOGENY OF BRONCHITIS.

Mosny, in a useful treatise on broncho-pneumonia,[1] recently published in the Charcot-Debove series, emphasizes equally with Netter, the microbian origin of this disease, and ascribes its pathogeny to four species of microbes:

(1) The diplococcus pneumoniæ, or Talamon-Frænkel lanceolated pneumococcus.

(2) A streptococcus which Netter and others identify with the streptococcus of erysipelas and of suppuration.

(3) The staphylococcus aureus and albus.

(4) The encapsulated pneumo-bacillus of Friedlander.

This writer insists that these are all common micro-organisms normally existing in the upper air passages (bucco-pharyngeal cavity and nasal fossæ) of most people in health, and ready under the influence of predisposing causes to become virulent and morbigenous. We live, then, he says, in perpetual menace of pulmonary infections, of which our organism harbors within itself the cause; it is this category of infections which Bouchard has felicitously designated under the name *auto-infections*. Happily, the organism possesses ordinarily means of protection, which suffice to prevent the pullulation of the pathogenic agents and even to produce their destruction.

Claisse in an elaborate article in the *Semaine Médicale* (1893, p. 297) takes the stand that the microbian nature of the bronchitis is now demonstrated. Certain causes heretofore regarded as efficient, are to-day ranked among the predisposing causes; cold, for instance, only prepares the way for the microbian invasion. He takes, as the type of bronchial affections, those which occur in children, without alveolar lesion, and apart from any general disease. This type is seen in certain rapid forms of suffocative catarrh, so often fatal in infants.

The presence of the microbe in the bronchi manifests itself by both local and general effects.

The local effects have to do with the secretory reaction of the bronchial tree, which in certain conditions may bring about obliteration of the tubes, thus interfering with respiration. Bronchial obstruction is always an element of great danger, and doubtless gives to these respiratory infections of early childhood their principal gravity. But there is another pathogenic factor which also has its importance, as it has much to do with the general symptoms, namely, the toxicity of the bronchial secretions.

Beau, in a memoir published fifty years ago,[2] speaking of the bronchial catarrh of infants, observes that the products of bronchial secretion when swallowed, are the source of true poisoning accidents. Hayem, many years later in writing on bronchitis,[3] explains certain symptoms as due "to alterations of the blood by poisons secreted." The systemic intoxication thereby caused accounts for the febrile temperature, and in some measure for the dyspnœa.

Claisse, who has made a particular study of these bronchial auto-infections, divides the respiratory tract into (1) regions normally aseptic, (2) regions normally septic. The first are constituted by the bronchial network, the second by the mouth and naso-pharynx. The communication between the two systems is a wide one, hence the transition is not abrupt. There is an anatomical zone of transition constituted by the larynx, trachea and larger bronchi where there is a progressive decrease in septicity. Thus, there is a marked difference in septicity between the upper bronchi and the pharynx, and the finer bronchi normally contain no microbes. These passages, however, have a constant communication with the septic region, and hence the facility with which infective inoculations can be made. Claisse contrasts this anatomical condition with that of the liver and gall-bladder and the urinary bladder, aseptic viscera which are better protected from microbes, both by their situation and by sphincters. The greater frequency of bronchial infections over infections of the liver and urinary bladder is what we might expect from these anatomical differences. The bronchi are armed against infection by their system of vibratile ciliated epithelia expelling the figured elements, and by the microbicide quality of the adhesive secretion of their caliciform cells and glands. The lymphoid stratum of the mucosa constitutes a leucocytic infiltration resembling that of the pharynx, having an especial importance, when the epithelium is destroyed, through the phagocytic function of its lymph cells. The lymphatic glands also play an important rôle in the defence of the organism. The upper air-passages are endowed with reflex sensibility, enabling them to throw off by expectoration divers noxious substances. The medium-sized bronchi, less exposed to infection, are less efficaciously armed, though possessing a muscular coat which helps expel mucus and foreign bodies. The ciliated epithelium disappears at the extremity of the bronchial tree. The secretory apparatus, the cartilaginous rings and the muscular fibres are here lacking; reflex sensibility has disappeared; on the other hand, absorption is more active, being favored by the thinness of the epithelial layer. Hence, it is apparent that the finest bronchi are poorly defended against the penetration and stagnation of septic products, and are especially adapted for the absorption of toxines.

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[1] Broncho-Pneumonie, [illegible]

[2] Beau, [illegible]

[3] Hayem, [illegible]

We have not space for the clinical picture which Claisse has drawn of capillary bronchitis, and the arguments by which he explains the general symptoms in accordance with his theory of systemic intoxication. The well-known syndrome certainly markedly resembles that of some forms of uræmic or ptomaine poisoning rather than that of simple pulmonary obstruction; note the myosis, the frequent typhoid prostration from the onset, the multiform cutaneous (purpuric or erythematous) manifestations, the extreme oliguria, and the fact that the fulminant bronchial infection is not always accompanied by the boisterous symptomatic cortége of suffocative catarrh. There may even be absence of cough from the first. The autopsy shows the bronchi engorged, in places eroded of their epithelium, stuffed with an exudation containing modified epithelium, leucocytes and the microbian agents of infection. The liver is often found fattily degenerated, and the spleen fatty.

Claisse affirms that the hyper-acute bronchial infections of infants at the ***Hospice des Enfants Assistés*** are habitually streptococcus infections. This microbe attains in the disease-focus a preternatural virulence, and when inoculated in guinea-pigs produces a fatal septicæmia, without reaction at point of inoculation.

What are the causes which favor the microbian invasion? "We may," says Claisse, "suppose the bronchial tree to be injured in its resistance, epithelial or lymphatic, by cold or some other agency which modifies the mucosa. There is no longer a sufficient defence against the infection. The microbes obtain a lodgement and multiply; triumph over the divers means of resistance already mentioned; and spread or are carried in the air to the fine bronchi where they meet with little opposition; there they elaborate their poisons without stint."

The bronchial lesion is then the necessary starting point of the infection.

Claisse has artifically provoked bronchitis in animals by different methods. In a first series he produced aseptic lesions by intratracheal injections of dilute sulphuric acid or ammonia. The animals (healthy hares) were killed in twenty-four hours, and reparation of their lesions was nearly complete. In a second series he injected into the trachea of hares a few drops of cultures of the streptococcus and staphylococcus. At the end of twenty-four hours the animals were killed, and no lesion was discoverable. A third series was subjected first to the action of the aseptic caustic, then, at the end of an hour, to the injection of the microbian culture; at the end of twenty-four hours the animals were killed and were found to be the victims of an intense bronchitis.

These experiments were designed to imitate conditions occurring in nature where lesions of an irritative or erosive nature (physico-chemical traumatisms) are the antecedents of the bronchitis. It is known that the inhalation of gases, irritant by their high or low temperature or chemical properties, also dust, perhaps of some kinds of pollen, the elimination through the bronchi of certain toxic substances as alcohol and iodine, etc., may usher in attacks of bronchitis. Doubtless many microbes (as those of measles and whooping-cough) are able by their natural virulence, in many subjects, to immediately overcome the resistance of the bronchi.

Claisse has made some interesting experiments to elucidate the toxicology of bronchitis. We can only sum up the results which, together with considerations before advanced, have led this writer to the conclusion that the symptomatology of the bronchial infections is dependent largely on systemic poisoning by the toxines elaborated by the specific microbes.

Portions of the infected bronchial tract are broken up in sterilized water and filtered through porcelain. The filtrate when injected in hares produces very marked toxic effects, among which are hyperthermia and dyspnœa.

Streptococci taken from the same bronchial exudate are sown in bouillon; this bouillon is filtered through porcelain and injected in hares, producing precisely similar constitutional effects.

Benign forms, when the general phenomena are slight and the symptoms of local reaction conspicuous, manifest the preponderant resistance of the organism and the triviality of the lesions; while the grave forms betray the insufficiency of the organism in the struggle and the profundity of the intoxication.

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MEDICAL NOTES.

CHOLERA. — The cholera still prevails to a considerable extent in Russia, Odessa particularly being infected. Hungary has been officially declared free from the disease.

INFLUENZA. — Newspaper reports from the Continent state that the influenza is widespread and general, though of a mild character. There are said to be 10,000 cases of the disease in the Province of Rhine Hesse. Throughout the United States there continues to be a spread of the disease, many cases being reported from all quarters, usually of a mild and short course.

SUCCESSOR TO SIR ANDREW CLARK. — Prof. J. Russell Reynolds, M.D., has been elected to succeed Sir Andrew Clark as President of the Royal College of Physicians. He received seventy-five votes. Dr. Samuel Wilks of Guy's Hospital received seventy-two votes.

MR. ANTHONY COMSTOCK AND GYNÆCOLOGICAL TABLES. — The action which Mr. Anthony Comstock, recently brought against the manufacturers of gynæcological tables for sending indecently (?) illustrated circulars through the mails has been dismissed by the Commissioner at Albany.

A Severe Penalty. — An Italian physician has just been tried for refusing to visit patients ill with the cholera, and sentenced to twenty days' imprisonment, to pay a fine, and is enjoined from practising his profession in any way for three months. During the previous epidemic of cholera the peasants were accustomed to shoot and stone physicians who attempted sanitary improvements or to give medical aid. Between the law, which says *must*, and the people, who say *shall not*, physicians have a hard time in Italy during cholera epidemics.

A Remarkable Prescription. — The following prescription has appeared in the column of therapeutic notes in two esteemed medical contemporaries:

FACIAL NEURALGIA.
℞ [illegible]
Sulphate of quinine . . . aa. [illegible]
Ext. of valerian, q. s.
M. F. [illegible]
Sig. [illegible]

The New Orleans Lepers. — The condition of the nine lepers confined in the hospital at New Orleans is said to have become a matter of public attention in that city. The building is reported in an almost untenable condition, unprotected from the weather and insufficiently heated. The eight men and one girl are expected to wait upon themselves and provide their own food upon a small weekly allowance, which admits of nothing more than the necessities of life.

The Vienna Food Exposition. — An international food exposition is to be held in Vienna next spring, to which our Government has been invited to contribute. While no special appropriation is available for the purpose, the Department of Agriculture has taken an interest in the exhibit, and directed its representative in Central Europe to do all in his power to aid American exhibitors.

Human Sausages. — A story comes from Saxony of a most attractive character. A soldier having purchased a ten-pfenning sausage found in it the tip of a human finger-nail and bone. The vendor was brought to trial, and testified that the finger was cut off by the chopping machine and while he went to staunch the wound his assistant came in and completed the making of the sausage meat, in which he incorporated his master's finger.

BOSTON AND NEW ENGLAND.

The New England Cremation Society. — The annual meeting of the New England Cremation Society was held in Boston, December 19th. Bishop Lawrence was the chief speaker, and gave as his opinion that cremation, as a means of disposing of the bodies of the dead, is reverent, proper and healthful. As showing the progress of public opinion with reference to cremation we may mention that the remains of the Dowager Duchess of St. Albans, who died on December 2d, and Dr. Bradby, formerly Master of Haileybury College, were cremated recently, in accordance with the terms of their wills.

Small-Pox in Boston. — During the last week there have been four new cases and one death from small-pox.

Small-Pox in Brookline. — A case of small-pox occurred in Brookline December 16th, which is traced directly to the Morrison family in Boston.

Small-Pox at Methuen. — A case of small-pox has occurred this week at the Methuen almshouse. The man had recently come from Boston.

A Physician's Bequests. — The will of the late Dr. Lucius F. Billings of Barre, bequeaths his medical library and surgical instruments to the Worcester County Medical Society. On the decease of Mrs. Billings, $5,000 is bequeathed to Harvard University, to be kept as a permanent fund for the medical department, the annual income of which is to be used for scholarships for the benefit of poor but deserving medical students.

Hydrophobia in Connecticut. — A considerable epidemic of hydrophobia exists at Westville, Conn., among dogs and cows. All the cases are traced to the flying visit of a strange and rabid dog some four weeks ago.

Influenza in Connecticut. — Many cases of influenza are reported from New Haven, Norwich and Middletown, Conn., while many smaller places report their share. The cases are all said to be mild, though one town is said to have many cases of the grip, while "colds and incipient pneumonia are numerous."

NEW YORK.

Discussion upon Dr. Biggs' Report on Tuberculosis. — At the meeting of the Board of Health held December 13th, the report of Dr. Biggs on Tuberculosis came up for discussion; and Commissioner Cyrus Edson offered the following recommendations:

"(1) That a circular be prepared for distribution setting forth the danger of contagion from tuberculosis.

"(2) That physicians be required to report all cases of tuberculosis within seven days of the time when such sick person comes under observation.

"(3) The medical sanitary inspectors should, as part of their duty, investigate cases of the disease reported, and take specimens of sputa for diagnostic purposes, as is done in cases of diphtheria. Upon the verification of the diagnosis, the inspector should visit the physician reporting each case and request him to fully instruct his patient, and the person with whom he is in contact, concerning the nature of the disease and the danger of its transmission."

The following resolutions were also adopted:

"*Resolved*, That this Board urge upon hospital authorities of the City of New York the importance of separation, so far as possible, in the hospitals of this city of persons suffering from pulmonary tuberculosis from those affected with other diseases, and urge that proper wards be set apart for the exclusive treatment of this disease: and, be it further

"*Resolved*, That the Commissioners of Charities and Correction be recommended to take such steps as will enable them to have and control a hospital to be known as 'The Consumptive Hospital,' to be used for the exclusive use of this disease, and that, as far as practicable, all inmates of the institutions under their care suffering from tuberculosis be transferred to this hospital."

The Board also ordered that the disinfecting corps disinfect places where evidence of infection exists, whenever in the opinion of the Chief Inspector for Contagious Diseases it shall be necessary.

APPOINTMENT TO THE BUFFALO STATE HOSPITAL FOR THE INSANE. — Governor Flower has appointed Dr. Wm. S. Tremaine, of Buffalo, manager of the Buffalo State Hospital for the Insane.

DEATH FROM HYDROPHOBIA. — Cornelius Minton, of Fair Haven, N. J., a lad fourteen years of age, died of hydrophobia on December 9th, after a two days' illness. He was bitten by a rabid dog on October 20th, while riding a bicycle, and the wound, which was slight, was cauterized; but no other precautionary measures were taken. It is said that two other individuals were bitten by the same animal.

DR. H. W. SPENCER. — Dr. Henry W. Spencer, formerly of New York, died at his residence in Paris, France, in November, at the age of eighty-six. In 1858 he was appointed United States Consul to Paris, and his house there became a famous rendez-vous for his visiting fellow-countrymen. During the Empire, he gave a number of handsome entertainments, and at these, American artists and medical students, however straitened their circumstances, were always most welcome guests.

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Miscellany.

HOT BATHS IN JAPAN.

AN interesting account of use of hot baths by the Japanese is given by Prof. W. K. Burton, in a recent number of the *China Medical Missionary Journal*. Every Japanese of every rank in life takes his bath daily, and in water at a high temperature. The private and public baths vary only in size and arrangement, enormous tubs, square or oval in shape, with large copper tubes passing through them, in which charcoal is burned to heat the water.

"In the public baths it used to be the universal custom for men and women to bathe together, and the baths were commonly open to the street. Of late years, out of deference to foreign prejudice, the baths in the towns have been closed in, and there is always a division between the women's and the men's bath, although it is of the flimsiest nature. It is sometimes merely a bamboo laid across the bath at the surface of the water. In the country, and specially at all places where there are medicinal baths, promiscuous bathing is still common, but there is never any evidence of indecent thought or feeling."

The general time for taking the bath is after the work of the day is done, but those who have leisure bathe several times a day. The temperature seems astonishingly high to one who has not tested it. "Anything below 110° F. is considered too cold, anything over 120° F. unpleasantly hot, though in some cases this temperature even is exceeded." The bather, after laving himself with the hot water, and pouring some on his head, enters the bath and sits immersed in the water quite up to his neck for from two or three minutes to a quarter of an hour, according to his inclination and the heat of the water. There is no ill effect upon the health of those who bathe so often in this hot water: and the general healthiness of the Japanese who live among sanitary conditions in many ways defective, is considered greatly due to this habit.

When Japan was first opened to the world, and the people began to take advice of western nations in all things, the foreign physician strongly condemned the practice as bad; and "a regulation was issued that the public baths must not be heated above a comparatively low temperature. The great discontent of the people led to an investigation by physicians, both Japanese and foreign, with the result that except in cases of those suffering from weak heart, the custom was pronounced harmless."

"It might be supposed that the habit of public bathing would lead to the communication of infectious diseases, the more especially as, in some of the public baths and the hotel and tea-house baths, the water is not changed as often as might be advisable. All that can be said is that investigation has so far failed to detect such communication of diseases, and that, if there is occasionally a solitary case, the evil is much more than counterbalanced by the general improvement in health that results from the cleanliness gained by general hot bathing, which could not be indulged in by the poorer classes were it not for the public baths."

The charge for the use of the public bath is one cent. The many hot volcanic springs are much used for the baths. The most famous of these is that of Netsu-no-yu (literally fever bath) or Kusatsu. The springs of this town have been in use for more than a thousand years, and their repute is indicated by an odd proverb that "even Kusatsu cannot cure love." The highest value of the bath is in the treatment of syphilis, leprosy and skin diseases. The temperature of the bath at its source is 160°; but the water is cooled before using to baths of three temperatures, the hottest being 128° F., at which heat it is actually used. The water contains free hydrochloric and sulphuric acid to the extent of one-quarter per cent. of the whole volume, and about three volumes of sulphuretted hydrogen per thousand, and one part of sulphide of arsenic in one million parts. The effect of all these after about ten days' treatment is to produce "blisters about the scrotum, between the legs and under the arms, resulting in the characteristic 'Kusatsu walk,' the patients moving slowly along, with legs stretched wide apart and the arms held well away from the body." The pain of bathing in this state is such that for the two hottest baths the patients undergo a sort of semi-military drill under a master.

"About half an hour before bathing time a trumpet is sounded, and the bathers begin to arrive. They take their places around the bath, and take turns in vigorously churning up the water with broad boards. This exposes the water to evaporation, and cools it to the temperature mentioned above. As the time for bathing approaches, the bathing-master, in a white dress, takes his place amongst the bathers. He gives a signal, and every bather takes a large wooden ladle with a short handle, bends down and begins to pour water over his head. This is to prevent the likelihood of congestion from the excessive heat of the bath. The pouring continues for five minutes. And then there is a second signal, at which all stop for a rest of three minutes. During this time, those who have been most affected by the treatment wrap thin cloth bandages around the parts most affected, as this reduces somewhat the torture of the parboiling process. At the end of the three minutes, the signal to enter the bath is given, and very slowly the bathers lower themselves, taking about thirty seconds before they are completely immersed. And now begins the most extraordinary part of the whole affair. It is a sort of a chant on the part of the bathing-master, with an answering chorus from the bathers, the whole thing intended to encourage them in bearing the pain. The chant of the master, freely translated, is somewhat as follows:

> [illegible] ready [illegible] the water.
> [illegible] minutes.
> There are only two minutes more.
> Persevere a little longer.
> There is only one minute more.
> Persevere only a very little longer.
> Get out of the water *slowly*.'

"To each of these sentences, chanted in a strange manner, the hundred or so of bathers answer from the bath with a sound that is between a shout and a wailing cry, and that can be heard all over the town. The order to get out of the bath is obeyed, but there is no slowness about the movement. Each bather leaps and scrambles from the bath with an agility that shows how hard he has found it to bear. Nearly a hundred enter the bath at once, sitting just as closely as they can, and the bathing goes on for more than an hour, five times a day. The usual course is about a month, and, after it is over, the bathers generally proceed to another hot-spring village where the waters have the effect of very quickly healing the skin."

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THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

Rome, March 29 – April 5, 1894.

Prof. E. Maragliano, M.D., of Genoa, Secretary-General of the Eleventh International Medical Congress, makes the following announcement through Dr. A. P. Clarke, of Cambridge, Mass.:

In consequence of the adjournment of the Congress, Articles I and II of the Statutes have been altered as follows:

Art. I. [illegible]

Art. II. Papers to be read before the Congress should be announced not later than the 31st January, 1894. The title should be accompanied by a very short *précis* of the paper and by the conclusions; the latter will be printed by care of the board, and distributed among the members.

Papers announced after the 31st of August, 1893, will be [illegible] Provisional Programme [illegible].

The Provisional Programme will contain also those previously announced papers which have been published in scientific papers after the adjournment.

The railway companies have established that the reduction of fares should be available from the 1st of March till the 30th of April, 1894.

The travelling tickets and railway passes will be sent by the Secretary-General's Office to each member enrolled before the 1st of February, 1894.

The first edition of the Provisional Programme is going to be printed, and will contain [illegible] the Congress and a list of all the papers announced till November 15, 1893.

It should be well to remember the following articles of the Statute:

Art. 2. All physicians are admitted to take a part in the work of the Congress, provided that they have satisfied the conditions of inscription and obtained the required ticket of membership.

Art. 3. The doctors of other sciences who, for their special studies, [illegible] in the work of the Congress may be enrolled, with the duties and rights of the members of the Congress who are doctors of medicine, being entitled to partake of the work, either by reading papers or by having a part in the discussion.

Art. 4. The admission fee to the Congress is fixed at twenty-five francs — one pound sterling; it entitles to a copy of the report of the Congress, which will be forwarded to the members as soon as it is published.

Art. 17. The persons, who, not being comprised in the Article 3, are interested in the work of a Section, may obtain admission by consentment of the President of the Congress.

Such persons will receive a special ticket, and will pay the admission fee like the other members, being entitled, however, to a copy of the Report of the Congress.

The persons thus admitted to the Congress may speak neither in the general sittings nor in the sittings of the sections to which they are not [illegible].

Art. 18. The students of medicine may be invited or admitted by the President to attend the sittings, but only as hearers.

They must obtain a special ticket which will be granted them without payment.

Members may apply to the Secretary-General's Office for railway passes for their wives and adult members of their families; the latter may be enrolled on payment of a fee of ten francs.

Medical gentlemen and all persons who wish to take part in the Congress are requested to give their names as soon as possible, writing for this purpose to the Secretary-General of the Eleventh International Medical Congress, Genoa.

Fees should be paid by post-order or draft to the order of the Treasurer, Prof. L. Pagliani, M.D., Director-General to the Office of Public Health, Home Department, Rome.

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THERAPEUTIC NOTE.

Sub-Conjunctival Injection of Corrosive Sublimate.[1] — Dufour, after making use of sub-conjunctival injections of corrosive sublimate in over ninety patients, concludes that it is the best treatment for the following five varieties of ocular inflammations: (1) in purulent ulcers and suppurative keratitis; especially when pus is present between the corneal lamellæ; (2) in deep keratitis from local causes; (3) in deep exudations, with the development of cells in the vitreous, which almost surely leads to phthisis bulbi; (4) in sympathetic ophthalmia; (5) in even non-syphilitic choroiditis in the early stages. The solution used varied in strength from 1 to 1,000 to 1 to 4,000. The most to be recommended is one of 1 to 2,000, which is easily tolerated and of sufficient strength.

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[1] [illegible] Zeitung, [illegible]

METEOROLOGICAL RECORD,

For the week ending December 9, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S.. 3	[illegible]	[illegible]	42	24	[illegible]	[illegible]	[illegible]	E.	N.W.	22	1	N.	R.	.90
M.. 4	30.12	[illegible]	[illegible]	20	90	[illegible]	88	N.W.	N.W.	[illegible]	18	N.	C.	.79
T.. 5	[illegible]	18	22	14	78	100	[illegible]	N.	N.	17	26	O	N.	.57
W.. 6	[illegible]	[illegible]	40	18	[illegible]	[illegible]	74	W.	W.	8	10	C.	C.	[illegible]
T.. 7	30.31	[illegible]	46	[illegible]	78	77	78	W.	N.W.	4	6	O.	C.	
F.. 8	[illegible]	[illegible]	51	24	[illegible]	64	64	N.W.	N.E.	6	2	C.	F.	
S.. 9	[illegible]	[illegible]	41	29	77	100	88	S.W.	S.E.	4	3	F.	R.	.33
☞	30.19		[illegible]	22			82							2.85

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 9, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal Diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,891,306	731	288	18.48	21.14	1.26	.70	10.50
Chicago . . .	[illegible]	—	—	—	—	—	—	
Philadelphia .	1,115,562	452	143	11.00	12.76	.88	2.86	5.06
Brooklyn . .	[illegible]	340	114	11.07	21.17	.58	.58	[illegible]
St. Louis . . .	[illegible]	—	—	—		—	—	—
Boston . . .	[illegible]	191	57	16.43	16.43	1.59	1.59	10.07
Baltimore . .	[illegible]				—	—	—	—
Washington .	[illegible]	118	31	13.60	17.30	2.55	5.10	1.70
Cincinnati . .	305,000	176	42	[illegible]	27.93		2.28	[illegible]
Cleveland . .	290,000	130	39	10.78	23.87	.77	3.08	3.08
Pittsburg . .	263,709	—	—	—	—	—	—	
Milwaukee . .	[illegible]	111	39	11.81	27.27	.90	-	6.36
Nashville . .	87,754	[illegible]	[illegible]	6.66	13.33	—	3.33	[illegible]
Charleston . .	[illegible]	42	13	2.38	11.90	—	—	—
Portland . . .	40,000	13	2	7.69	15.38	—		7.69
Worcester . .	96,217	22	11	9.10	27.30	—	4.55	
Fall River . .	87,411	40	16	17.50	25.00	12.50	-	2.50
Lowell . . .	87,191	[illegible]	[illegible]	[illegible]	18.50	3.70	3.70	—
Cambridge . .	77,100	33	10	9.09	18.18	—	—	—
Lynn	62,656	—	—	—		—	—	—
Springfield . .	[illegible]	15	4	13.33	6.66	—	—	6.66
Lawrence . .	48,355	—				—	—	—
New Bedford .	45,886	14	4	14.28	7.14	—	14.28	—
Holyoke . . .	41,278	9	5	11.11	44.44	—	—	11.11
Salem	32,233	13	1	—	7.69	—	—	—
Brockton . .	32,140	9	4	—	—	—	—	—
Haverhill . .	31,396	9	2	—	11.11	—	—	—
Chelsea . . .	[illegible]	18	6		5.55	—	—	—
Malden . . .	29,394	13	2	7.69	—	—	—	7.69
Newton . . .	[illegible]	12	1	—	25.00	—	—	—
Fitchburg . .	27,146		—	—	—	—	—	—
Taunton . . .	26,972	15	3	6.66	20.00	—	—	—
Gloucester . .	26,688	-	—		—	—	—	—
Waltham . .	22,058	8	2	12.50	12.50	—	—	12.50
Quincy . . .	19,642	2	1	—	—	—	—	
Pittsfield . .	18,802	3	1	—	66.66	—	—	—
Everett . . .	[illegible]	4	3	25.00		—		25.00
Northampton .	16,331	8	1	37.50	25.00	—	12.50	—
Newburyport .	14,073	3	0	—	33.33	—	—	—
Amesbury . .	10,920	1	1	—	—	—	—	—

Deaths reported 2,149: under five years of age 868; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 341, acute lung diseases 304, consumption 384, diphtheria and croup 166, typhoid fever 44, diarrhœal diseases 29, scarlet fever 28, measles 24, whooping-cough 19, cerebro-spinal meningitis 18, malarial fever 8, small-pox 4.

From scarlet fever New York 5, Philadelphia and Boston 4 each, Brooklyn and Cambridge 3 each, Milwaukee and Chelsea 2 each, Cleveland, Fall River, Somerville, Northampton and Medford 1 each. From measles New York 15, Brooklyn 4, Milwaukee 3, Philadelphia and Northampton 1 each. From whooping-cough New York 6, Philadelphia 5, Brooklyn 3, Boston, Washington, Cincinnati, Cleveland and Taunton 1 each. From cerebro-spinal meningitis New York 5, Washington 4, Lowell 3, Cleveland 2, Brooklyn, Worcester, Springfield and Chelsea 1 each. From malarial fever New York 6, Cleveland and Nashville 1 each. From small-pox New York 4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 9, 1893, TO DECEMBER 15, 1893.

Leave of absence for four months, to take effect about January 6, 1894, with permission to go beyond sea, is granted **Major Alfred C. Girard**, surgeon, U. S. A.

First-Lieut. Allen M. Smith, assistant surgeon, granted leave of absence for four months, to take effect on or about January 4, 1894.

The leave of absence granted **Major Peter J. A. Cleary**, surgeon, on surgeon's certificate of disability, is extended four months, on surgeon's certificate of disability, on condition that he report in person to the commanding officer, Army and Navy General Hospital, Hot Springs, Ark., on or before December 11, 1893, for treatment therein.

Leave of absence until February 22, 1894, is granted **Major John Brooke**, surgeon, U. S. A.

First-Lieut. Benjamin L. Ten Eyck, assistant surgeon, is assigned to station at Fort McIntosh, Texas, for field duty in the department of Texas.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 16, 1893.

C. A. Siegfried, surgeon, detached from U. S. Training-ship "Richmond" and granted four months' leave.

J. A. Hawke, surgeon, detached from Widows Island Hospital and special duty Portsmouth, N. H., and to the U. S. Training-ship "Richmond."

M. H. Simons, surgeon, ordered to Widows Island Hospital and to special duty at Portsmouth, N. H.

R. C. Dean, medical director, ordered as President, Board of Medical Examiners, Washington, D. C.

A. A. Hochling, medical director, detached from Board of Medical Examiners and wait orders.

Michael Bradley, medical director, relieved as President of Board of Medical Examiners and ordered as member of the Board.

SOCIETY NOTICE.

Norfolk District Medical Society. — A meeting for Scientific Improvement will be held at the Norfolk House, Roxbury, Tuesday, December 26, 1893, at 7.45 p. m.

Communications: "A Case of Acute Infection, simulating Acute Yellow Atrophy of the Liver," Samuel Crowell, M.D.

"Puerperal Eclampsia, with report of cases," H. D. Arnold, M.D.

Coffee at 9.30.

James C. D. Pigeon, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The lecture on the "Structures and Functions of the Uterus" by Dr. Charles S. Minot, in the course of free evening lectures at the Harvard Medical School, which was announced for Wednesday, December 27th, will be delivered instead on *Tuesday evening, December 26th*, at 8 o'clock. Dr. Minot's second lecture will be, as announced, on Wednesday evening, January 3, 1894.

RECENT DEATHS.

Elbridge Gerry Wheeler, M.D., M.M.S.S., died recently in Middlefield, Mass.

John Renton, M.D., M.M.S.S., died in Boston, December 15th, aged seventy-four years.

BOOKS AND PAMPHLETS RECEIVED.

Charaka-Samhita. Part VII. Translated into English and published by Avinash Chandra Kaviratna. Calcutta: D. C. Bass & Co. 1893.

New York County Medical Association, State of New York; Register of Members; Manual of Information. New York: Published by the Association. 1893.

Lecture.

LECTURES ON SURGERY.[1]

[illegible]

[illegible]

XXII.

DISEASES OF THE JOINTS.

We begin to-day with diseases of the joints. I need not say that they are very common. Why they are so common seems to depend on two causes. In the first place, the parts around the joints are the centres of bony growth, epiphyses, consequently they are changing and only partially formed up to adult life. That would explain a good deal the tendency to disease in children. Again, in adult life, as in children, they are always centres of motion, always subjected to friction, always subjected to strains, to overuse; and they are the working centres, so to speak, of the bony frame, on which all the wear and tear comes, — causes certainly why, in susceptible persons, they so easily become the seat of disease.

SYNOVITIS.

Take the simplest form of affection about the joints which concerns only the synovial sac, — synovitis. In the simple acute form the progress is about as follows: The patient after a blow or sprain feels a slight lameness in the knee-joint, we will say. There is pain on flexion and in putting weight on the joint. Very soon a slight puffing on each side of the patella. This expands soon afterward across the bottom of the patella under the patellar ligament, increasing symmetrically, forming an ovoid and finally fluctuating swelling, and lifting the knee-pan up from the joint. While this is taking place, of course the synovial sac is removed away from its position around the bones. The muscles and fascia which are attached and prolonged into it lose their firm grip and bearing upon the bones themselves; and the joint becomes weak, and moves from side to side; and although it may not be the seat of great pain, yet the patient feels insecure, and is in constant danger of falling if he puts his weight on it. As the fluid increases the pain generally diminishes very much. During this effusing stage there is heat about the joint; and this continues during the acute stage; but after the fluid has been all poured out; after a few days, the heat and pain pretty much cease. The weakness of the joint remains. The swelling is very marked and characteristic. The patella together with the quadriceps extensor is lifted up from the front of the femur; and the result is what is called floating patella, and increased insecurity in using the quadriceps extensor muscle.

This disease may have various terminations. If properly treated and in a good subject, this fluid may be wholly absorbed again in a short time; in a few weeks, not in a few days. It goes away slowly, lingers last, naturally, at the bottom of the sac; and when it is nearly gone can still be detected by making the patient strip and stand upright and comparing the two knees; it is found that there is a manifest puffing below one patella, which does not exist on the other side. As this fluid goes down, it is apt to leave some thickening of the sac itself; and after the sensation of fluid is absent, there is still a little doughy feeling about the joint. In the perfect restoration of the part this finally disappears, and the knee becomes as it was before; but in order to become as it was before usually several months are consumed. What is more apt to take place is that the fluid is absorbed to a certain degree; and then the latter portion of it is indolent; the sac becomes slightly thickened like an inflamed pleura, and finally slight fibrous thready adhesions are formed across from one side of the synovial sac to the cartilages and the bones; and what is called fibrous anchylosis results. If now this goes on, finally the fluid is wholly absorbed. These threads shorten and become firmer; and what is called false anchylosis, a stiff knee, stiff by fibrous attachments, is the result.

On the other hand, acute synovitis may pass into the chronic form. In that case the patient frequently has recurrent attacks; has his acute synovitis; has it restored to a certain degree, and then the joint puffs up again; fluid re-forms; and the fluid is slow in going away the second time, if it can be noticed to go away at all. The reason is that successive inflammation of the synovial sac renders it incapable of absorption, and the knee becomes bathed in an indolent fluid of serum and perhaps some fibrin; it is not absorbed and forms the condition called chronic synovitis; sometimes called dropsy of the knee-joint.

The treatment of acute synovitis to be best should be immediate. Unfortunately the patient does not generally apply to the surgeon or physician until the disease has existed some days, and effusion is already well-formed. Immediate confinement in bed or on a sofa should be insisted on; the limb put on a ham-splint so that the joint may be restricted in motion and yet the front of the knee-joint left uncovered so that it may be treated. At first it should be treated with cooling and evaporating lotions during the early inflammatory stage; later with more stimulating applications like blisters and tincture of iodine; and finally by pressure; and pressure and firm bandaging will usually complete the cure. This all takes several weeks. Afterwards the patient should be instructed to wear a flannel bandage a number of weeks; to use the limb with caution; carry a cane; and be careful not to strain the recently healed parts, so that any other effusion may take place. This usually suffices to cure an acute synovitis in the healthy subject.

The chronic synovitis, on the other hand, is extremely obstinate of treatment; and although we rest it; put it on a splint; apply blisters, iodine, etc., yet the fluid sometimes does not go away. Under these circumstances the judicious application of continued pressure is of great benefit; and this should be applied in one of two ways. In the old way, — still a very good way, — by putting on dry compressed layers of sponges, wetting them and making firm compression on the whole synovial sac. After this has done its work and is beginning to loosen, re-apply. In this way a strong uniform pressure is got over the sac, and the result is to gradually absorb the fluid by compression.

Another method, which is more ready and perhaps as good, is to apply around such a joint a rubber bandage which can be put on and the patient strictly confined to bed. That can be readjusted from time to time, and firm pressure made on the joint.

Still there sometimes remain obstinate cases of dropsy of the knee-joint, which are indolent, painless, free from fever and irritation, with no signs of absorption. In such a case as this, tapping of the joint may be done with advantage; and aspiration having been used, the joint can be pumped off by the vacuum, and pressure put on. If this measure proves insufficient and fluid afterwards re-forms, a second time we may tap and draw off a portion of the fluid, and inject into the joint some irritating preparation: tincture of iodine, a preparation of ammonia, a weak solution of carbolic acid, or something of that kind. Absolute alcohol has been injected with a good deal of benefit. This lights up an inflammation; converts an old chronic dropsy into a pretty lively synovitis for the time being; and after that has subsided, we put on pressure, and by subsequent bandaging lead to the absorption of the fluid.

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[1] [illegible] part of the regular course.

In a person not strong we always have a dread that an acute synovitis, if not promptly cured, may lead to something worse; and that something worse is the change in the synovial sac described by Brodie as pulpy degeneration of the synovial membrane. The change takes place in the inner lining of the synovia, where it becomes thickened and roughened; and softens and undergoes a change somewhat like that undergone in the arteries in atheromatous disease. Bony plates are not formed; but ulceration of the surfaces; fatty degeneration and formation of flakes of fibrin; and such a change in this membrane that it is impossible for it ever to wholly recover. In these cases we find the young subject with a permanently altered joint as to its usefulness. The natural outlines of the joint are lost. The patella is no longer distinct. The sulci on either side cannot be made out. The shape of the joint is still entirely symmetrical, alike on both sides. If it is alike on the two sides it means disease in the synovial sac; if on one side more than the other, it means disease outside the synovial tissue, or else inside of the bone. The joint becomes spindle-shaped; the muscles above and below waste to a certain degree; the shape of the joint is lost. It is doughy; not hot to the touch, particularly; slightly painful, and remains in an indolent state. It cannot remain in this condition without some subsequent change; and the next change which takes place is that the effusion which was present in the joint gradually degenerates, and finally, incapable of absorption and subject constantly to friction and motion, and also subject to the influences of a feeble constitution in the patient, the fluid becomes changed into pus, and suppuration in the joint takes place. Now occur fever and chills and sweats and pain, all the phenomena of hectic. Finally the joint begins to lose its symmetrical appearance; swells on one side or the other; reddens; becomes acuminated; thins and bursts; and we have suppurating disease of the knee-joint, with a sinus leading into it, and the constant discharge of pus.

ULCERATION OF CARTILAGE.

We have another form of disease of the joint, called ulceration of cartilage. By that we mean decay of the cartilage.

The cartilage is an extremely lowly-organized body, nourished mainly by imbibition from the neighboring vessels and tissues. Its nutrition is never at a very high point. It easily falls into decay, and anything which affects either surface of the cartilage from the sides where it gets its nutrition, cutting off the supply of blood and the proper absorption of fluids into it, may lead to its decay: hence decay or ulceration of the interarticular cartilages, or the articular cartilages of the bones may arise, on the one hand, from the diseased synovia bathing it in a purulent secretion, and preventing its nutrition on that side; or it may arise from the disease beginning in the bone itself, whereby its nutrition on the side where it clings to the bone is cut off by occlusion of the vessels. In the first place, it is due to suppurating synovitis; and, in the second place, to disease of the cancellous tissue of the epiphysis of the femur or tibia; and frequently that, also, is of a tuberculous origin. Tuberculous disease, cheesy degeneration in the cancellous tissue of the head of the bone, soon affects the overlying cartilage, cuts off its nutrition, and leads to its ulceration. The result is, that as this diseased condition goes on in the feeble subject, that the cartilage loses its lustre and becomes yellow and dull, flattens off; a portion decays and drops into the joint. If the disease is going on on both sides, erosion takes place rapidly; and in the advanced state we find only shreds of cartilage lying about the bone, and the cancellous tissue of the bone already exposed, and rough and carious.

So far, then, with the exception of tubercle, every change we have described is in the joint and symmetrical, and outside of the bones themselves. All these changes, then, for example, would be accompanied by no change of shape of the bones whatever, and, were we to judge by the bones alone, we should not say that the joint was diseased in the slightest particular.

I will speak now of the other series of changes which begin in the bones. When tuberculous degeneration or any change begins in the epiphysis of the femur between the two condyles, it leads to a congestion, and then to inflammation and effusion of false products into the cancellous tissue. This gives rise to dull, aching pains which are persistent in character, to elevation of the temperature in the joint itself, and to the usual symptoms of hectic. The most peculiar change which takes place, which may be noticed by the outside observer, is the expansion of the bone itself; and the end of the femur visibly grows, enlarges, and broadens under observation, so that from being normal it widens out, until it is immensely enlarged on one side or both, sometimes more on one side than on the other, frequently more on the inner than outer condyle, until there is a large bulging of bone over the inner side of the condyle of the femur. This means bone disease, an ostitis going on in the cancellous tissue, a softening and caries taking place there, generally from a tuberculous deposit. The pulpy degeneration of the synovial membrane, which follows in the scrofulous subject, in acute or chronic synovitis, and the ulceration of cartilage, which is the next stage in the diseased process, and which is, in consequence of the cutting off of the nutrition of the cartilage, eventually leading to suppuration and change in the joint, and finally to disastrous disease — all these forms of disease have been called, among the laity, by the common name of white swelling. White swelling, in popular parlance, means chronic synovitis affecting the sac, the cartilages and the bone, generally of strumous origin, and finally resulting either in anchylosis or abscess. The reason of the name was probably because it is a swelling of the joint which does not change its color. It never reddens until the acute process has burst through the sac into the cellular tissue. It is a pasty, pale, œdematous, soft tissue, which retains the imprint of the [illegible] has lost the true shape of a joint, is rather free from acute heat or inflammation, and is in this chronic strumous state which will end, probably, in suppuration, ulceration of cartilage, abscess in the joint, caries, anchylosis, if cured; excision, or amputation if not cured.

Still another change, a very [illegible] takes place. After the sac is altered, these diseased fluids poured out, cartilages eaten away, bones become carious, still inside the sac are shut-up pus and decayed products; if acute abscess does not take place on the outside, the joint still retaining its contents to the last, by and by another change begins to be observed in the knee. It is spontaneous dislocation of the head of the tibia back of the femur. The disease has gone so far, it finally attacks the ligaments, loosens them; and the power of the long muscles pulls the tibia backwards and dislocates it almost entirely behind the condyles of the femur. In such a joint as this you find a peculiar shape beginning to develop in the front of the joint. The outlines originally lost and indefinite become more distinct. The patella stands out, the condyles of the femur stand out. You will see, on close observation, that the tibia is no longer on a line with the femur, and is dropping back; and the condyles and the patella are projecting out over it at a sharp angle. This change goes on further and further; and in very old, crippled subjects, who have had this disease a very long while, instances are found where the tibia is absolutely dislocated backwards into the popliteal space, the limb shortened, and the femur thrown entirely in front of the lower bone. Usually it does not go so far as that.

If a moderate and partial dislocation, it is still capable of spontaneous cure. After a term of years, without the occurrence of any external discharge of pus, inspissation of pus takes place, the formation of fibrous adhesions, the formation of bony adhesions, and finally, cure results, with a partial dislocation and a firm, bony anchylosis.

This bony union is called true anchylosis, but is not necessarily accompanied by dislocation.

What are the symptoms of this graver class of diseases? We have seen how insensibly in the bad subject they shade off one into the other, usually pursuing a line of well-marked steps or stages of gradual degeneration of the part. We have said it is quite easy to recognize an acute synovitis. The swelling is great, fluctuation is considerable, the disease is painful, the cause is quite evident, the patient is fully aware of what is taking place and the diagnosis is practically made with great facility, and a mistake perhaps is seldom made. Not so with these insidious stages of chronic synovitis, for the symptoms are slight and obscure, and they continue for months, perhaps, before the attention of any one is called to them. One great reason for this is that both in the knee and in the hip they occur largely in young children, too young to tell their symptoms, and indifferent, as children always are, to bodily suffering, providing they can keep about without having to lay up, and play around with their companions under the emulation that always exists at that age. Children are very peculiar in this respect. They of course never simulate disease; never have hysteria or mimesis. They do not pretend to have what they do not have. It is only by sharp observation that you can find out in the little child that something exists which is pulling him down. In the knee-joint, for example, if the disease begins as pulpy degeneration and ulceration of cartilage, slight limping; favoring of the limb; bending of the knee; not carrying it quite straight; favoring it by walking on the toe; occasional attacks of fever and pain; starting pains at night. These last are the most characteristic signs of articular disease at all ages. They occur from the spasmodic contraction of the muscles after one falls asleep; and they occur also after amputation, making a painful jumping of the stump, after the limb is gone. The control of the muscles is lost in sleep. A spasmodic action of the muscles occurs, and the child wakes from pain, and falls asleep again. This occurs from diseases of joints; those affecting the synovia, the cartilages and the bones; and it does not occur usually in the simple forms of synovitis; and does not occur in the series of joint diseases which are hysterical, or mimetic. The signs then of this condition are insidious. We have a little limping, a little bending, yielding of the foot, a little change of shape, slight attacks of fever, frequent starting pains at night, and if we look at the joint it is somewhat altered in shape. Still more insidious are those changes where tuberculosis begins in the bone itself and expansion takes place in the condyles of the femur and the femur grows out on either side; and the child also limps slightly, bends the leg slightly, and has a certain amount of pain. You will frequently see children at the out-patient departments who run along with a slight limp, without good motion of the joint. Examining the two ends you find a great expansion on one side, not present on the other. At a later stage when suppuration has taken place and abscess is about to form, the symptoms become extremely severe and intense up to a certain point, and then are promptly relieved on the bursting of the abscess itself.

So much for the diseases of children and youths and young adults. Now the old people have their peculiar diseases of the joints which are very characteristic. We know that most of them are ascribed to rheumatism or gout, and with justice; but besides these there exists in the old a form of chronic arthritis which has sometimes been described as senile hip disease. The hip disease of old people is a matter of months, or years. The leg slowly shortens; the shape of the part changes; the joint still moves to a certain degree, but is stiffened; there is constant pain and lameness; and the patient, although accused of having had a fall that they may never have had, manifests all the signs of shortened femur, and goes about with increasing symptoms of hip disease, during the remainder of life. They are essentially cold inflammations; and the changes which take place are those of softening and absorption, rather than of acute suppuration. On the other hand, the very large class of diseases in the joints of old people which are due to gout or rheumatism are marked by very peculiar and easily recognized symptoms. The chronic rheumatic arthritis, or rheumatoid arthritis, in elderly people, is characterized first, by what is called a dry joint; the joint creaks and snaps on motion. This is especially true of the knee. The patient sometimes may be heard in the house walking down the stairs, while the patellæ snap upon the front of the femur. Similar creaking and rubbing takes place in the hip; in the bodies of the vertebræ; or in other joints. The shoulder becomes roughened and cracks on motion. This change is due to gouty deposits on the articular surface of the joint itself. The joint surfaces become roughened; bony growths take place; fringes of little osteophytes grow about the articular surface; and creaking and rubbing take place which simulate exactly the crepitus of a fracture, no injury, however, having occurred. The patient being at an age to have this disease, we may diagnosticate this bony affection as chronic rheumatic arthritis. The joint is dry; rubs and grates; motion is restricted; anchylosis does not always take place; but restriction of motion to a very marked degree takes place, so that finally the patient becomes unable, perhaps, to get the hand up or behind the head, but can still make the to and fro motions in the joints. The motions of the knee and hip become restricted. These patients go on through life and die in this condition, lame, stiff, disabled; but the disease does not reach any higher grade of destructive process. Occasionally nature makes another change, which is very remarkable; and after they have been rough and crackling sometime the knee gets smoother and works better, and eburnation or ivory-like polishing of the surface takes place. The cartilage is gone; the bone is smooth and hard and rubs against another surface without the intervention of cartilages; and a species of smooth polishing down, without much synovial assistance, is made, and the patient moves about pretty well.

NEURALGIA OF THE JOINTS.

It is rather hard to say what it is. I believe it is almost always due to some unsuspected and unrecognized diseased condition of the bone itself, in the neighborhood of the joint. For example, a person too far advanced in life, and too active and of too many interests in this world to be suspected of wanting to lay up, complains of constant lameness in the knee. It is always located in one spot; shows nothing outside; you can feel nothing; appreciate nothing; no swelling, heat or change of outline, but an everlasting boring pain in the inner condyle when he gets tired; which obliges the patient after a half day's work to come home and rest his leg on a sofa, when the pain gradually subsides. It is probably due, so far as we can make out, to gouty changes in and about the joint itself; and just as in the arthritis deformans, so about the femur and in the larger joints, occasionally, gouty deposits take place, which are the seat of pain; these are probably chalky deposits, which are not sufficient to throw the joint out of position; but are the subject of constant painful friction, after the patient has long used the part.

A very large class of supposed diseases of the joints are due to an hysterical condition. They generally begin in the young and susceptible subject; not always a female, but often females; in consequence of a real injury. The patient gets hurt a little, not much; but she does not get well. When the time has passed for the effects of the bruise or slight synovitis or blow to be cured; when you think you can take the knee-joint and move it; and she says she cannot stand upon it; and cannot move it herself; and you can detect no ostensible disease whatever, you have got to suspect that the disease is in the mind, and not in the joint itself. It is what is called hysteria, a very false name. It has nothing whatever to do with the uterus. It is better called mimesis or simulation; not always conscious simulation. The patient may be perfectly honest, and self-deceived, on account of this peculiar mental tendency; weakness of will; the imaginative faculty, which is in excess. They get into a condition when they believe that the joint is diseased; that they cannot stand on it; that it is going to kill them if they get on it; and the longer this delusion exists, the more helpless becomes the joint. Finally, in such cases, unless relief can be given in some way, the patient, who cherishes this illusion, takes to her bed, and becomes what Dr. Channing described as the bed case; and nothing gets her up, except something which appeals more strongly to her imagination, than the surroundings in which she is. If there is a fire and the bed gets on fire, she will get up and go out. If influences of a hypnotic or spiritual kind are brought to bear, she may be immediately cured. If she can be shocked to get up, or induced to get up, she may be cured; but unless her will can be in some way got hold of, she does not make that effort; and the limb remains, what is called, an hysterical joint. Brodie, who practised among the wealthy and indolent classes in the latter years of his life, says hysterical joint disease was very frequent; and a majority of cases of joint disease he saw in the young were purely mimetic, and not real. In these cases the difficulty comes in making the diagnosis. We all know that organic disease may be behind these manifestations. Patients thought to be hysterical may be found to have internal cancer. We must be as sure as possible that the diagnosis is correct; and exhaust every means to try to find it. Try such a limb with the electrical current; test it carefully as to its temperature; have careful watch kept in the patient's sleep, to see whether she ever has those painful, nightly shrieks, which are almost pathognomonic of disease of the joint, and do not occur in the simulated variety. When the joint keeps the same temperature and shape and appearance, and the only change about the leg is that fatty degeneration is taking place in the muscles with wasting; meanwhile, the patient looking and remaining in perfect health; keeping a good complexion and a pretty good color, and only yielding to this peculiar condition of the joint; we may then be pretty sure that it is due to a misplaced effort of the mind; want of will, error in the imagination. It is a species of insanity, and should be treated with charity; but the cure will be brought about by mental treatment, and not treatment of the limb itself. Such a patient should be encouraged in every possible way to get up and try to put the weight on the limb. One may perhaps induce them to do so by the aid of crutches; massage and gymnastics are useful. Passive exercises may be given by other persons while the patient is lying down; and finally, perhaps, the patient may be persuaded to resist against the hand of the rubber, and make motions herself. If she once finds out that she can do that, the cure commences. Electricity is of great assistance. In addition to this, diversion of the mind; if the patient can be carried out of doors, amused; led to forget herself; and brought on from stage to stage, until she can be cured. More depends, I am inclined to think, in the treatment of this class of cases upon the personal magnetism of the individual, than anything else. Some people have the power of impressing those with whom they come in contact; of preserving always a certain belief and confidence in their assertions; and finally lead the patients out of their beds, and on to their feet, so that they walk. The most unfortunate thing which can happen is to remain at home and be surrounded by a set of [illegible] lieve in the reality of [illegible] every supposed pain and ailment; [illegible] anything being done; and unless the patient can be removed from such surroundings and started anew, frequently a cure is almost impossible. These cases, as I say, should be [illegible] treated charitably; for they are practically and really a disease of the mind, and should be treated like other mental affections. Most of them, sooner or later, get well. Sometimes they take a year or two, sometimes some years. Occasionally one remains permanently through life; and such instances, of course, are very painful, because as time goes on it is evident that there is no disease; because the patient does not alter; no change in the joints; no abscess; no anchylosis; no formation of cancer; no pulpy degeneration; and the patient remains bedridden, but perfectly well.

HIP DISEASE.

Hip disease is one of the more marked diseases of the joints. It most frequently comes in children, fortunately, because in children it is capable of cure; and in adults it is not; unless the spontaneous stages of the disease have been gone through and the diseased condition terminated by the time puberty comes on; so far as my experience goes, the patient never gets well if the age of puberty is passed, and the active changes of hip disease go on; they last then through life, or until they destroy the patient.

This disease is supposed to originate in two different ways. Undoubtedly it does, like all the forms of which we have spoken, originate in two ways; beginning in the synovial sac, or in the head of the bone itself. It may begin as a chronic synovitis, with pulpy degeneration of the synovial membrane and ulceration of the cartilage, from cutting off of nutrition from that side of the cartilage; or it may begin as a tuberculous deposit in the head of the femur, and from want of nutrition from the inner side, lead to erosion of the cartilage; abscess, and all the phenomena of hip disease.

The symptoms which present themselves first are, usually, that the child begins to throw out the foot of the affected side a little more than the other side, as it walks. The limb is apparently lengthened. The child limps a little as it walks. It does not complain of much pain. No changes have taken place about the joint which give any characteristic appearances from the outside. As the disease goes on a little further, more pain is manifested; inability to walk with any freedom; and, after a while, the position of the limb and foot changes, and apparently a little shortening takes place. About this time the child usually becomes very sick, and an acute fever supervenes, with intense pain in the joint; the child lies in bed with the limb drawn up towards the abdomen to relieve and relax the part. The parts all about become shiny and thin and change in shape. The fold which exits normally between the buttock and the femoral muscles is lost. The hollow in the groin becomes filled up, so that the diseased side is full and flat; and, in addition, intense nightly starting pains with hectic; rise of temperature; sweats, chills, etc.; and then sudden and immediate and perfect ease. The child turns over, begins to laugh, feels better, wants to get up. The explanation is, that the earlier stages, marked by such extreme suffering, were those of an abscess distending the synovial sac to the point of bursting. Finally it bursts; pus pours out into the cellular tissues; the pain ceases; all symptoms are relieved, and there is a great remission in the course of the disease. This remission, however, is not of long duration; and after the child gets up it is soon found that dislocation of the femur takes place; the foot is [illegible] half inches occurs. Another attack of fever comes on. The child goes to bed; is sicker than before; the hip becomes shiny; abscess bursts and the pus escapes externally. Relief of symptoms again follows. The child gets up and goes around with a stick or crutch, with dislocation on the dorsum; inverted foot; and the disease goes on through its other stages, which are chronic caries; and if cure can occur, finally, drying up of the abscess, and bony anchylosis on the dorsum of the ilium, with the head fastened in its new and false position.

Original Articles.

STRANGULATED HERNIA.[1]

[illegible]

It is to be hoped that a report of the following cases of strangulated hernia may draw the attention of the younger members of the profession to the importance of giving to these patients *early* relief, and also to the necessity of rapid operations under certain circumstances. Another important lesson which one learns, before he has had very much to do with these cases, is that in many instances the vitality of the patient is exhausted to a much greater degree than is indicated to the ordinary observer by the general symptoms and appearance.

A Case of "Compound" Inguinal Hernia.

Mr. S., aged thirty-seven years, was operated upon at the City Hospital in 1878, for a recent hernia, which was attended by urgent symptoms indicating danger of strangulation. Eleven years later an effort was made to obtain a radical cure of the rupture by operative measures, but without success.

On April 18, 1893, this man came to the hospital in a buggy, walked into the accident room, and letting down his trousers showed what has been very aptly termed a "compound" hernia, by which is meant a protrusion of a portion of the intestines through the skin. The patient gave the following account of the accident: Twenty-four hours before coming to the hospital, while lifting a heavy weight, the cicatricial tissues at the site of the previous operation gave way, thereby letting the bowel protrude through the rent in the skin. He got into a car, rode home, went to bed, and remained there without any treatment whatever until the following day, when he got up, dressed, and rode to the hospital with a friend in an ordinary wagon.

Upon examination, about four inches of the small intestines were seen protruding from a small opening in the skin in the right inguinal region, between one and two inches in diameter. The bowel was distended and covered with a thick layer of dirty, grayish lymph. There were no signs nor symptoms of strangulation, a [illegible] condition that would probably not occur as readily from the constriction of thin, attenuated skin, as it would from the pressure of dense, unyielding fasciæ and tendons.

There was no vomiting, and the pain was only moderate. The belly was not distended, nor was there other evidence of general peritonitis. In short, the man was in very good condition.

The patient was profoundly etherized, the exposed gut was cleansed as thoroughly and carefully as possible, and after enlarging the opening in the skin, an effort was made to replace the protruding bowel. This proceeding required the combined manipulations of two pairs of hands for several minutes for its accomplishment, owing to the coughing and straining of the patient, who was very strong and muscular.

The lower or outer pillar of the external ring was absent, but a fairly successful effort was made to close the large aperture in the abdominal walls by uniting the inner pillar to the deep fascia below with silk sutures. The external wound was partially closed, and dressed with antiseptic compresses and spica bandage.

Little shock followed the operation. He vomited occasionally for two or three days, for which calomel was given in small doses. The bowels moved freely on the third day, and the convalescence was tedious and uneventful. The wound suppurated freely as was to be expected, but there were no complications. He was discharged from the hospital in eleven weeks, wearing a truss over a small granulating surface.

Considering the exposure and irritation of this patient's intestine, it is surprising that he did not develop general peritonitis. The external causes would seem to have been ample to produce such a result. We may express our ignorance upon this point by saying, that his tissue or his system was in a favorable condition to resist the onset or extension of serious inflammatory processes.

Several years ago a girl was admitted to the hospital with a large rosette of intestines protruding from a rent in the abdominal walls. The accident was due to the sudden rupture of an abscess. The bowel was covered with recent adhesive lymph, which matted the coils more or less firmly together. Dr. Cheever carefully cleansed the mass, separated the adhesions, and replaced the protruding structures. No untoward result followed.

Intestinal Resection for a Strangulated Inguinal Hernia. Death in eleven days.

Mrs. P., aged fifty-two years, entered the City Hospital April 6, 1893, with a strangulated inguinal hernia upon the right side. The rupture had existed fourteen years, and had been controlled by a truss till within a year. Symptoms of strangulation had been present for a week, and consisted of vomiting, constipation and pain in lower abdomen. A tumor the size of a hen's egg was situated over the right inguinal canal. It was free from impulse, and was irreducible. Considering the duration of the symptoms, the patient was in fair condition. The pulse was frequent, but of pretty good strength. The vomiting was stercoraceous. No delirium nor stupor.

The sac was opened quickly, and a perforation half an inch in length was found at the seat of the tight constriction at the internal ring. Three and a half inches of the small intestine, which was purple, thickened and not glistening, were excised. The bowel was closed by end-to-end coaptation with two rows of continuous silk Lembert sutures. Operation lasted about three-quarters of an hour. Only an ounce and a half of ether was required. Shock was moderate, from which she rallied well.

With the exception of some diarrhœa, the patient was very comfortable the next day. Two days later, she was taking food without difficulty; there was no vomiting nor pain. Everything went on favorably for over a week, except that on the fifth day the temperature dropped to 96.4°. Wound united by first intention, and the sutures were removed on the seventh day. There was no tenderness, nor distention, nor other local signs of peritonitis at this time. On the ninth day pain in the belly came on with vomiting and tympanitis. The wound opened, and its edges became dark and sloughing. Exploration revealed extensive adhesions everywhere among the intestines, but no pus nor fæces could be found. The urine, which was examined and reported normal when she entered the hospital, now contained albumen, and hyaline and granular casts.

The patient gradually sank, and died eleven days after the operation, from peritonitis and nephritis. No autopsy was made, and hence the condition of the intestinal wound is not known.

This is the third case of intestinal resection done by the writer during the past few years. The first patient lived a week, and died from peritonitis. The second patient, a feeble old woman, recovered in a surprisingly short time, but died several months later from an operation for the removal of an ovarian tumor. She had no further intestinal trouble, and her death was due to shock and exhaustion consequent upon a laparotomy of moderate severity. No autopsy could be obtained in any of these cases; hence we are in the dark as to the exact condition of the intestinal suture.

Strangulated Inguinal Hernia. Patient in collapse when brought to hospital. Quick operation: Recovery.

Mr. M., aged fifty-six years, entered the City Hospital April 23, 1893, in a state of collapse. An inguinal hernia had existed upon the left side a year, for which he had never worn a truss. It had been strangulated a week, and profuse stercoraceous vomiting had persisted for three days. The extremities were cold; he was pulseless at the wrist, and had hiccough. The superficial arteries were calcified. Urine contained albumen, and hyaline and granular casts.

The patient was surrounded with heaters, well covered up, and brandy freely injected under the skin. A very little ether was given, the sac was quickly opened, and the bowel found to be covered with a thick, dark layer of lymph, mottled in places, threatening sphacelus. The constriction was divided, the bowel placed just inside the wound, which was packed with baked gauze. This was done to give exit to the intestinal contents, should occasion require it. The operation lasted but a very short time.

The patient rallied very slowly from his most desperate condition. The vomiting persisted for five days, gradually diminishing in amount and frequency. He was fed and stimulated by the mouth and rectum. At the end of a week the hiccough and vomiting had ceased, and there seemed a chance for his recovery. The wound was closed with sutures in five days after the operation, and it was healed completely in five weeks. Although the rupture returned before the patient left the hospital, yet the rings were so large that strangulation in the future would seem to be impossible. He was ordered a truss, and told to wear it during the remainder of his life.

This man had wonderful powers of endurance and of recuperation, yet it may fairly be claimed that his recovery was due in no small degree to the mode of treatment which was adopted. The method was fully described in a paper presented to this Society ten years ago,[2] and consists of the following essentials:

Just enough ether is given to control the cutaneous sensation; scarcely more than the primary effects are requisite. In other words, the anæsthesia is light and frequently interrupted, the patient at no time being profoundly unconscious. The operation is best performed in the warm bed, the body being well covered, surrounded by hot bottles, kept dry, and moved as little as is necessary. The operation is to be done as quickly as possible, and no time is to be wasted in trifling refinements of technique. It goes without saying, that hæmorrhage must be controlled in the speediest manner compatible with the patient's safety. The sooner the necessary dressings are applied, and the person is arranged in his bed, and left alone with his nurse, the better are his chances for recovery. In three cases of gangrenous hernia operated upon by me, while the patient was in a state of marked collapse, I have deliberately opened the bowel, as one would open an ordinary superficial abscess, with one stroke of the knife, and have then divided the constriction by carrying the herniotome into the lumen of the intestine. This very unscientific method was adopted rather than to risk a long, tedious, and hence dangerous dissection in a mass of gangrenous and extensively infiltrated tissues, in which all of the ordinary anatomical landmarks were obliterated by the prolonged morbid processes. Two of these patients lived a fortnight. The third, an old man at the time of the operation, is alive and well, and is earning his living as a printer, now, several years after his serious illness.

This method of relieving strangulation is manifestly justifiable only under the most desperate conditions, such as those which have been described above, and under no other circumstances should it be resorted to, or thought of.

A case of very large omental hernia is here alluded to because of an unusual complication, namely, hæmorrhage. A man, twenty-five years of age, had never worn a truss upon a rupture in his right inguinal region, although it had troubled him for ten years. Had been operated upon for strangulation some years ago. Present symptoms, vomiting and pain, were of twenty-four hours' duration.

On opening the sac, about six inches of small intestine was found entangled in a large mass of adherent omentum. The bowel was readily returned after a free division of the constriction had been made, but the omentum was returned with great difficulty, owing to the numerous firm adhesions. While dividing some of these dense bands upon the inner side of the mass, an enormous omental vein was wounded, giving rise to a profuse hæmorrhage. As is frequently the case in wounds of large veins, it was impossible to control the bleeding with forceps. It was readily done, however, by packing the wound with sterilized gauze, which was removed piecemeal from the third to the fifth day, without recurrence of the bleeding. The patient made a good recovery in five weeks, and left the hospital wearing a firm pad and spica bandage.

Another case of strangulated hernia lately operated upon is of interest by reason of the obscurity of the origin of the symptoms. A young man was sent to the hospital by Dr. Boland, with the appearance of approaching collapse; general abdominal pain, tenderness and distention, fæcal vomiting of three days' duration, cool extremities, congested skin, and pinched features. There was evidently general peritonitis. For fifteen years he had had a rupture in the left inguinal region, which [illegible] according to the position of the body. Had never worn a truss. Present symptoms began five days before entrance to the hospital.

In the left inguinal region was a soft, painless tumor the size of an almond. It was not tender, nor was the skin reddened or indurated. The bunch could be moved about in all directions, and felt very much like a lymphatic gland. The question naturally arose as to the relation of this apparently insignificant tumor, and the grave symptoms, as related above.

An exploratory incision showed that the little bunch was a mixed hernia, composed of omentum, in which was entangled about an inch and a half of small intestine. The constriction, which was very tight, firm, and located high above the internal ring, was freely divided with the herniotome, and the contents of the sac were easily returned to their proper place.

The patient rallied slowly, and the convalescence was tedious, owing in part to an attack of septicæmia, as indicated by chills, fever, parotitis, and a sloughing condition of the wound. He recovered, and left the hospital in seven weeks, wearing a pad and bandage.

This case leads me to mention three others in which I have been called upon to operate, for the reason that the symptoms did not subside after the hernia had apparently been reduced. The first case was that of a middle-aged man, with a strangulated hernia in the right groin of about twenty-four hours' duration. It was reduced by his physician at night without undue force. Upon the following morning, the symptoms not having subsided in the least, the abdomen was opened just above the inguinal canal upon the right side. A knuckle of small intestine was found to be tightly constricted by the neck of the sac, situated above the internal ring, and freely movable. It had been reduced *en bloc*, but there were no signs of injury from the taxis. The intestine, while deeply congested, showed no indications of mortification or other lesion. The constriction was divided from above. The patient died from shock and exhaustion in about twenty-four hours.

A patient of Dr. Goss, an elderly man, had a strangulated inguinal hernia upon the right side. Moderate taxis applied by the patient himself caused the tumor to disappear several hours before summoning the physician; but the symptoms, pain, restlessness and vomiting, persisted. At the end of twelve hours an ordinary herniotomy was done. The constriction was reached with difficulty by carrying the finger high up through the canal and rings. It was divided, the bowel brought down, examined, and found to be in good condition. Union by first intention followed, and the patient made a quick recovery.

The third case was that of an old man, seen with Drs. Reed and Gavin. Shock, prostration and vomiting were urgent. An operation revealed a tight constriction high above the internal ring. The bowel was in fair condition, but the patient died in about twenty-four hours.

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[2] [illegible]

It is a noticeable fact, that the constricting band in these four cases was located above the internal inguinal ring, and with its contents was very movable, thereby explaining the ready disappearance of the hernia. These cases serve to emphasize the fact, that the only reliable indication of the success of taxis, is a marked change in the symptoms for the better. If they do not show unmistakable signs of improvement within twelve hours after an apparent reduction, the probabilities are, that the obstruction is not removed, and that operative measures are called for to ascertain beyond a doubt the exact condition of the structures involved. Intestinal obstruction, complete enough to produce vomiting, cannot be relieved too early. The prostration resulting from this calamity is always serious, oftentimes insidious, and not infrequently deceiving the surgeon as to its severity. The recuperative powers of the patient are often reduced to a much lower state than are indicated by his general appearance and symptoms. Hence the danger of delay. The risks of an operation are as nothing compared to the perils of a strangulated bowel. The sooner obstruction is relieved, the safer the patient.

In conclusion, I can only say what has already been better said many times before in relation to the treatment of strangulated hernia. If the symptoms are urgent, waste little time upon efforts at taxis, as they seldom succeed under these circumstances. The tissues, already more or less damaged, are rendered still more incapable of repair by the manipulations. While the application of cold, and pressure by means of weight and elastic bandages, raising the foot of the bed, etc., may succeed occasionally in reducing a rupture, yet, as a rule, more harm than good follows their use, owing to the difficulty in making a proper selection of cases, and also to the fact that valuable time is lost in making the experiments. Be chary in the use of opiates before and after taxis, and after operation, lest they mask the symptoms, and lull the attendant's suspicion, until the patient is beyond relief.

If a rupture, real or suspected, is accompanied by vomiting, herniotomy, as a rule, is not only justifiable, but it is demanded. Operate early. If the patient be not in good general condition, operate quickly, and avoid shock and prostration. In desperate cases do as little as possible beyond dividing the stricture at the primary operation, and complete the work later, when the patient has rallied sufficiently to justify it. If in doubt as to the reparative powers of the damaged tissues, pack the wound with sterilized gauze for a few days, or until the point has been decided by the natural course of events.

Husband the patient's resources in every possible way. Save time, and avoid shock. Preserve the animal heat, and keep the body dry. Disturb the patient as little as possible by moving. Avoid all unnecessary manipulations inside the peritoneal cavity, as they increase shock. Stimulate and nourish by the skin and rectum. Let the anæsthesia be light, and often suspended. And, finally, never lose sight of the fact that the keystone to the operation is a thorough division of the constricting band.

The editor of the Russian *Grazhdanin* has been sentenced to ten days' imprisonment for defamation of military surgeons.

ON CERTAIN DANGERS ATTENDING THE USE OF ATROPINE, AND THE EMPLOYMENT OF A NEW MYDRIATIC.[1]

BY HASKET DERBY, M.D.

In his recent text-book of ophthalmology Professor Fuchs uses the following language:

"The mydriatics may bring about an inflammatory attack (of glaucoma) in an eye predisposed to the same; and this is true not only of the powerful mydriatics, like atropine, but also of homatropine and even of cocaine.

It is therefore better to always inquire into a possible predisposition to glaucoma, before applying a mydriatic in the case of an elderly person."[2]

Priestley Smith includes duboisine in the above list.

Attention was first called to the unfavorable effect of mydriatics, or rather of belladonna, in acute glaucoma, by Mr. Wharton Jones, more that a generation ago.[3] I am not aware however that he alluded to the possibility of its favoring the production of increased pressure where this might be impending. I believe the two cases I reported to the American Ophthalmological Society in 1868,[4] one occurring in my own practice and the other in that of the late Dr. Althof, of New York, to have been the first published instances of glaucoma supervening directly on the instillation of atropine. At about the same time, although the fact subsequently came to my knowledge, von Graefe published in his *Archiv*[5] a short observation bearing on this same point; giving no cases, but stating his own experience, and advising the avoidance of the instillation of atropine in chronic glaucoma.

These views met at first with little favor, but they are now generally entertained. Probably the most accepted theory of the causation, or rather acceleration, of the outbreak of glaucoma through mydriatics is that they interpose an obstacle to filtration by pressing the thickened, peripheric portion of the iris from the ciliary processes, towards and against the cornea, thus increasing the narrowing of the filtration angle. "When the filtration angle is already dangerously narrow" says Priestley Smith in his recent excellent treatise on the pathology and treatment of glaucoma (p. 132), "the thickening of the iris base, which accompanies dilatation of the pupil, may suffice to complete the blockade."

If this view be true it must apply to all mydriatics without exception, and it is in fact known that all those in common use have accelerated the onset of glaucoma. In consequence of this we hesitate to employ them on patients who have passed middle age, at any rate for the investigation of refraction, certainly in no case to use them without some preliminary examination.

For therapeutic purposes atropine is undoubtedly the mydriatic in most general use. While its benefits are unquestioned, the occasional disadvantages it entails are by no means to be lost sight of. I shall never forget once instilling two or three drops of a half-per-cent. solution in the eyes of a boy of thirteen, of seeing him after the lapse of an hour stagger as he left the office, and of being sent for the evening of that day, to find him with a flushed face, great dryness of the fauces, and possessed by hallucinations, all of these symptoms passing away in the course of the night.

[1] Read before the New England Ophthalmological Society, December 5, 1893.

[2] Lehrbuch der Augenheilkunde, S. 370.

[3] Medical Times and Gazette, vol. i, pp. 111, 112.

[4] Transactions for 1868, p. [illegible]

[5] A. F. O., Bd. xiv, Abth. ii, S. 117; see also A. F. O., Bd. xv, Abth. iii, S. 123, note.

[illegible] tivitis, where its use has been long continued; and not to be at all borne by certain individuals, who manifest a peculiar susceptibility to its influence.

The discovery of a mydriatic free from the above dangers and inconveniences, would mark a distinct advance in therapeutics, and facilitate examinations of the eye, whether of refraction or for purposes of exploration. Such an agent, it is claimed, has been found in scopolamin, an alkaloid furnished by the roots of the scopolia atropoides. It is contained, with hyoscin, in the hyoscyamus niger or henbane, but differs materially from hyoscin in a chemical point of view.

A recent article published by Raehlmann (Kl. Monatsblätter für Augenheilkunde, Jahrg, XXXI, S. 59) drew attention to this new mydriatic. It is more active than atropine, being used in about one-fifth the strength of that agent, a solution of from one to two parts to a thousand being the one usually employed. It acts with efficiency, its first effect on the pupil being in most of my cases visible at the end of five or six minutes, and full dilatation secured in from twenty to twenty-five minutes. Mydriasis lasts several days, but seems to be less prolonged than that due to atropine. Dr. H. H. Haskell, ophthalmic interne at the Massachusetts Charitable Eye and Ear Infirmary, has had the kindness to observe the results of the application of a one-fifth-per-cent. solution of scopolamin in a series of seven cases, and the figures are here appended. The first column gives the age, the second the number of minutes that elapsed before any effect was perceptible, the third the minutes required for maximum dilatation, and the last the number of hours that elapsed before the pupil became again normal.

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Unlike atropine the effect of scopolamin on the cerebral cortex is to paralyze rather than to irritate, and the frequency of the pulse is not increased but diminished. This has been proved by experiments on animals. It is said to cause no nervous excitability, and not to affect appetite.

The advantages claimed by Raehlmann for scopolamin over atropine are as follows:

(1) Dryness of the throat occurs only after excessive use.

(2) Its application can be prolonged without causing irritation, and it may even be substituted for atropine when the latter is no longer borne.

(3) It is better adapted to the treatment of certain inflammatory affections, particularly those connected [illegible].

(4) It causes no increase of intraocular pressure, has even been used with relief to pain in cases of acute glaucoma.

If experience corroborates these facts, the new remedy may well supersede atropine. The last advantage claimed is one of the utmost importance. If we have indeed, in the case of scopolamin, a mydriatic which is unlikely to cause an increase of intraocular pressure, in an eye predisposed to the same, the theory of the action of this class of agents must be revised. In that case we must abandon the supposition that excretion is checked by crowding the iris up against the filtration angle, and recur to the former hypothesis that atropine diminishes filtration by contracting the vessels, thus thickening their walls and diminishing transudation.

Raehlmann's article is based on observations made with scopolamin hydrochlorate. For four weeks past I have used the hydrobromate, the only form of scopolamin I have been able to procure, and which was [illegible] I can judge with so limited an experience the effects are similar. Since commencing with it I have used no atropine.

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Clinical Department.

REMARKABLE [illegible] OF DIVULSION OF THE URETHRA.[1]

[illegible]

It is very seldom that a surgeon has an opportunity to examine the urethra immediately after divulsion. Such an opportunity has lately been afforded me, and I bring the specimen for the Society to see.

The patient died from the combined effect of hæmorrhage into the cerebellum, hæmorrhage into the bowel, tuberculosis of the mesenteric glands, abscesses in the prostate, and the etherization and operation done on the day of his death. The case was an extremely interesting one in every aspect, but more particularly in its pathological appearances.

The patient was a single man, twenty-five years old, who had led an irregular but very active life for several years, and had taken no care of himself. Some abscesses in the perineum and scrotum had either opened spontaneously or had been opened about a year before his death; and this fact together with a history of gonorrhœa and occasional purulent discharge from the urethra, had given rise to the belief that a tight stricture existed, and that the urethra had ruptured behind it, causing abscesses and sinuses.

When I saw the patient early in October, 1893, he was quite emaciated and very pale. He was extremely unwilling to have any instrument passed, and it was with the greatest tact that I was able to persuade him to let me pass a small one. I tried several, and nearly all of them brought up in false passages, only one went through. Finding these false passages and seeing the sinuses old and healed, only confirmed me in my belief that there was a tight stricture. At the same time the young man said that he had no trouble in passing water, but his attending physician said that urine came at times through the sinuses. In this he was mistaken. There was an acquired phymosis with much thickening of the prepuce, and considerable thin pus between the prepuce and the glans. If I could have persuaded the patient to let me pass a medium-sized instrument, my belief in the existence of any very narrow stricture would have been dispelled.

The patient lived six days after I first saw him. H[illegible] intense headache. The pain was terrific, absolutely unbearable, and was accompanied by a spasmodic twitching of both sterno-cleido mastoids. His favorite attitude was with his hands folded behind his head, or with his head and shoulders bent forward, lying curled up with his back very much rounded.

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[1] [illegible], November 13, 1893.

After etherization, I laid open the sinuses in the scrotum, perineum and buttocks. Two of them were symmetrical and were found to spread out beneath the skin, as tubercular abscesses do. None of the sinuses communicated with the urethra; they were curetted and packed with iodoform gauze. A small bougie was then passed into the bladder, and the urethra divulsed with Bigelow's divulsor. The points of most resistance were near the glans and in the membranous portion of the urethra. There was no bleeding. A large-sized elastic catheter was easily passed into the bladder, and was tied in and connected by a rubber tube with a bottle. But little urine was secreted after the operation. Eight hours later the patient died. The autopsy showed clearly the causes of the pallor, weakness and headache and the effects of the divulsion.

Dr. Whitney reports that the calvaria was thin and its inner ridges and markings extremely prominent, recalling the appearances in the skulls of very old people. In the right hemisphere of the cerebellum was an area of red softening occupying the central portion for its entire thickness. The area was rather pyramidal in shape, and its greatest area was about one inch square. The blood was dark red in color, and was evidently of quite recent origin (probably within a week). About six inches above the ileo-cæcal valve was an irregular ulceration, about three-quarters of an inch in diameter, which was well into the muscular coat. The lymphatics were distended with an opaque cheesy material. The glands at the root of the mesentery were enlarged from the size of a pea to that of an orange, and on section contained abundant creamy pus with cheesy periphery. The intestine below the ulcer was filled with dark tarry blood. In the prostatic portion of the urethra were several holes, capable of admitting a sound, which passed into the prostate and from which yellow pus could be squeezed. The prostate was completely riddled with abscess formations. To sum up: Red softening of the cerebellum; tuberculosis of the mesenteric glands and tubercular ulcer of the intestine; abscesses in the prostate and about the perineum and anus; recent rupture of the urethra from divulsion. Any other changes in the viscera, if present, were masked by the fluid injected by the undertaker.

The appearances of the urethra in the recent state were as follows: At a point two and a half inches from the meatus, and extending two and five-eighths inches downwards, is a clean cut, or tear, parallel with the axis of the urethra. This cut or tear (linear) extends through the mucous membrane and through the submucous tissue, an eighth of an inch in depth. In the alcoholic specimen you see at the side of this cut, a shred of membrane (possibly mucous membrane, probably not), but I am not sure that this was there when the autopsy was made; it may have been made in the slitting open the urethra. In the membranous portion is a clean cut or tear on the floor of the urethra, one inch long and extending to the prostatic urethra, but not into it. The prostatic urethra and the prostate gland are riddled with holes and abscesses of long standing. At first sight this seemed to me rather too extensive a splitting, as the result of the passage of the divulsors, but the more I have studied it and thought about it, the more I am convinced that it was a most excellent result and could not have been obtained in any other way. There was absolutely no hæmorrhage, nor an ecchymosis. The cuts were as straight and clean as if made by a knife and not ragged and there was no bleeding as there would have been with a knife. There were two strictures, one in the pendulous portion of the urethra, the tightest, and one in the membranous portion. If the urethratome had been used there would have been considerable bleeding and the division of the stricture would have been no more satisfactory, though the incision in the urethra would probably have been shorter.

On the whole, I regard this linear splitting of the urethra, without hæmorrhage, almost the ideal treatment for stricture of the urethra, and if divulsion often effects such a bloodless and thorough division, I regard it as perhaps the best method of treating a stricture, at least a deep-seated one.

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ŒSOPHAGOTOMY, WITH HEALING BY FIRST INTENTION.[1]

BY ABNER POST, M.D

THE following case of œsophagotomy presents some features of interest, especially in its recovery. The patient was a little girl twelve years of age who on her birthday received as a present a bright new silver twenty-five cent piece, which was a larger sum of money than she had had at her own disposal before. In her excitement she put it in her mouth, and accidentally swallowed it. For the first day after the accident she was unable to swallow anything. On the second day the coin evidently shifted, and she was able to swallow liquids. At the end of the second day she was brought to the hospital. I saw her late the next forenoon. She was evidently in pain; and when I approached her, she screamed, and grasped her throat by both hands. It was impossible even to touch her without anæsthesia, and the next day was appointed for the operation. The next morning she persuaded her nurse that she was able to swallow, that the coin had passed down; and I was so informed, so that I did not see her till late that forenoon, when I asked to see her swallow. She took but a single swallow, grabbed the throat with both hands, and made that characteristic painful deglutition which is so well-known with difficulty in the œsophagus. I was obliged again to postpone the operation until the next day, which was the fifth since she swallowed the coin.

When she was etherized an attempt was made with the coin-catcher to catch and extract the coin. I succeeded in locating it, but did not catch the coin. The bristle probang was then passed; it came up showing that the bristles had spread irregularly, and that the portion of the probang where the bristles had been thinnest had caught in the coin. The instrument was passed again, but no force that I dared apply would stir the coin. The probang came up with a little blood, and it was evident that œsophagotomy was necessary. The child being already on the table, the head turned to the right exposing the left side, which was made prominent by placing a rolled sheet beneath the neck, it was then possible to feel the coin from the [illegible] cartilage and the [illegible] was [illegible] terior border of the sterno-mastoid which was loosened, and with the vessels beneath was pulled outward with a spatula; the depressors of the hyoid, which were pretty wide, were loosened at the edges and pulled inward. The sterno-mastoid had been pulled to the outside, the trachea gently pulled to the inside, and the omohyoid depressed, so that there were three spatulæ, one pulling in, one out and one down. Very little manipulation with the trachea in the region of the œsophagus liberated a few bubbles of gas, which were explained later by seeing that the coin had begun to [illegible] the walls of the œsophagus so that it was just visible. The œsophagus was then incised by a small tenotome tracing the position of the coin, which could be made out very plainly. The coin was then seized with forceps and extracted. The coin was firmly grasped by the œsophagus, firmly held on two sides, if one may speak in that way of a circular object, and when it was extracted the median line was thoroughly discolored by sulphuretted hydrogen, while the two parts on the sides that had been grasped by the œsophagus were left comparatively bright. There had been practically no loss of blood. The record places the loss of blood at less than one-half drachm. The parts were then allowed to resume their natural positions, and the external wound was closed at the top and bottom, leaving the middle portion freely open, and the child was sent back to bed. There was no vomiting.

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[1] Read before the Boston Society for Medical Improvement, November 13, 1893.

When I visited the ward the next day the child was up, dressed and playing about the ward. To my surprise I found that she had already been fed with cracker soaked in milk, and that none of the food had appeared through the wound. From that day until she was discharged there was absolutely no leaking. It was, then, an œsophagotomy which closed by first intention. So far as I have been able to find, this is the only case on record in which so successful an issue has been reached.

In trying to explain this good fortune, I think it lies in great measure with the child. She presented a neck which seemed to have been formed by nature for the operation. It was a little long, entirely devoid of fat, and the connective tissue very slight, so that the muscles were separated with a minimum of traumatism. No vessels were cut, so there was no blood to prevent immediate union.

I think this must be the only œsophagotomy that has been done with simple aseptic precautions. So far as I know, after the skin was cleansed there was nothing that should be called antiseptic that entered the wound. The instruments were sterilized by heat; the dressing put on afterwards was gauze that had been baked.

In the majority of cases the wound does not close under two weeks. This child must be one of the youngest on whom the operation has been performed. Dr. Leroy McLean, of Troy, N. Y., reports the case of a child of sixteen months. In that case the recovery is said to have been "rapid and complete." Dr. George W. Gay has operated on a child of three and a half years.

The little girl is here to-night. She has only the scar to show. She is good enough to let us see how slight a scar can result from so serious an operation. She now eats food of all descriptions without difficulty.

PREGNANCY IN THE LEFT HORN OF THE UTERUS, SIMULATING EXTRA-UTERINE PREGNANCY. LAPAROTOMY.

[illegible]

Some months ago I saw in consultation Mrs. M., twenty-two years of age. Menstruation (which had always been regular) had been absent for three months. During this time she had had more or less pain in the left ovarian region. At times the pain was sharp and cutting, causing her to wince and cry out. I saw her about 12 M. The family physician was called the evening before. He got a history of flowing of only a few hours' duration. "Nothing" had passed from the vagina. Great pain, at times cutting like a knife, was complained of in the left ovarian region. There was marked sensitiveness on pressure over the left ovarian region. Patient was restless, and had an anxious expression. Pulse, 120; temperature, 101°. There had been no chill. Ether was administered, and nothing was detected by the finger inside the uterus. He told her it was probably a case of extra-uterine pregnancy. When I saw her the above-mentioned symptoms were present. She had flowed some during the night and forenoon, but had passed nothing except blood from the vagina. She was pale and restless, and vomiting was present. The abdomen was distended, and so sensitive that palpation revealed nothing. Vaginal examination revealed an enlarged uterus, with an ill-defined, sensitive swelling extending from the left horn. Pulse, 130; temperature, 103°. There had been no chill. Morphine had been necessary to relieve the severe pain.

At 2.30 the abdomen was opened. Nothing except an enlarged uterus, with the left horn enlarged, and an enlargement of the left tube close by the uterus was found. With the sharp curette, a quantity of placental tissue was removed from the left horn.

Convalescence was uneventful, and she was discharged in four weeks.

She is now four months pregnant. The symptoms in this case pointing to extra-uterine pregnancy were certainly as well marked as in some of the cases where I have removed a fœtus either from the tube or the abdominal cavity.

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Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

[illegible]

ANATOMICAL CHANGES UNDERLYING OCULAR DISTURBANCES OF CEREBRAL SYPHILIS.

Uhthoff[1] reports the anatomical changes of the eyes and optic nerves of 17 cases of cerebral syphilis which resulted fatally in the Berlin hospitals.

In two cases there were intra-ocular changes; in one, irido-choroiditis, with very noticeable vascular changes (peri-vasculitis) in the retina; in the other, a gummatous formation in the iris. The optic papillæ, nerves, chiasma and tracts were involved in 14 of the 17 cases; in several the anatomical changes found *post-mortem* had not given rise to any disturbances of function.

[illegible]

"Choked discs" were found in three cases (once unilateral); optic neuritis in two; simple atrophy of the papillæ in three. In six cases no ophthalmoscopic changes were discovered.

In the orbital portion of the optic nerve were found perineural changes varying from simple hydrops of the sheath to an intense descending perineuritis, and interstitial neuritis with secondary atrophy; also simple descending atrophy. The intracranial portion of the optic nerve showed pronounced gummatous degeneration, severe perineuritis and slight perineuritic changes. The chiasma was affected in a comparatively large number of cases. In one case the optic tract in its entire length was converted into a gummatous mass. In eight of the 17 cases there was third-nerve affection, twice bilateral. The sixth nerve was paralyzed in two cases. The trigeminal nerve was involved in three cases, in one of which neuro-paralytic keratitis occurred.

THE OPTICAL TREATMENT OF CONICAL CORNEA.

Mackay[2] estimates the refraction of the apex or any other more desirable portion of the cone in conical cornea by means of retinoscopy done through stenopaic discs with central circular apertures of three to five millimetres, using the disc with the smallest aperture, through which the glow can be recognized and its motion followed. He cites two cases. In the first case, the best glass selected by the trial with test-types and lenses alone resulted in R. — 3.00 D., sph.; L. — 9.00 D., sph.; R. V. = [illegible] parts; and L. V., — [illegible]. By retinoscopy through a three millimetre aperture, the refraction of the summit of the cone proved to be R. — 13 D., sph. $\bigcirc$ — 6 D. cyl. axis hor.; L. — 15 D., sph. $\bigcirc$ — 8 D., cyl. axis 130°. Vision with practically these glasses, through the same opening, proved to be R. V. = $\frac{6}{12}$, L. V. = $\frac{6}{18}$; and J.1 from 8 to 20 inches R., J.2 from 2 to 10 inches L. The interpupillary distance was carefully measured, and a pair of spectacles prescribed having the posterior surface coated with an opaque black varnish, leaving clear central areas of two millimetres in diameter. With these she eventually obtained four letters of $\frac{6}{9}$ with the left eye, and was most grateful. In the second case, with an opaque summit, he was able by the same method to determine the existence of nearly twelve dioptres of myopic astigmatism near the visual axis, and to improve vision from "fingers at one metre" to [illegible].

IRITIS AS A SYMPTOM OF BRIGHT'S DISEASE.

Schapringer[8] reports a case of iritis which he deems to have been due to a nephritis from which the patient suffered. The eyeballs were extremely sensitive to the touch; there was intense photophobia, well-marked œdema of the conjunctiva, but not associated with any congestion of that membrane. The cornea was clear, but the aqueous humor slightly turbid. No precipitate on the posterior wall of the cornea. The iris was discolored and dull, and the pupil contracted. The optic disc was slightly swollen; its outlines were indistinct. The retinal veins were enlarged and tortuous. In the region of the yellow spot there was a faint indication of white discoloration in two or three spots. Under treatment the eyes improved, and were well in six days. The white spots in the macula region disappeared. The patient died in about six weeks' time.

WOLFE'S OPERATION.

Weeks,[4] in the report of the restoration of the eyelids in a case of severe burn, presents a tabulated report of 37 cases collected by him of the transplantation of skin without a pedicle (Wolfe's operation) for the restoration of lost tissue in the eyelid; from which it appears there was no sloughing in fourteen cases, or 37.8 per cent. Partial sloughing occurred in eight cases, or 40.6 per cent. Complete sloughing occurred in eight cases, or 21.6 per cent. The final result was good in 18 cases, or 48.6 per cent. Sutures were employed in 23 cases; of these cases there was partial or complete sloughing in 18, or 78.25 per cent.

No sutures were employed in 14 cases; of these, partial or complete sloughing occurred in five cases, or 38.5 per cent. No sloughing occurred in nine cases, or 61.5 per cent. The maximum shrinkage, where reported, was reached in four months (four cases). The amount of shrinkage is reported to range from 50 to 80 per cent.

OPHTHALMOMETRY.

Lautenbach,[5] in an article upon ophthalmometry, as to what the Javal instrument will do and what it will not do, comes to the following conclusions: The ophthalmometer will not give the refraction, nor will it give the total astigmatism except when this is confined to the cornea; or any knowledge as to whether there is or is not lenticular astigmatism. It will give the axis and degree of astigmatism when this is corneal; practically he finds that it gives the axis in 88 per cent.; and the amount of the astigmatism in 45 per cent. It reveals a knowledge of diseased conditions of the eyeball when the disease is of such a nature as to interfere with the nutrition of the cornea or increases or decreases the ocular tension. It will, in connection with other methods, enable a calculation to be made of the lenticular refraction and astigmatism as well as the depth of the eyeball.

SIMPLIFIED DIAGNOSIS OF OCULAR PARALYSIS.

Wegmann,[6] in an article upon the differential diagnosis of paralysis affecting a single extrinsic muscle of the eye, formulates the following rules:

Rule 1. — Paralytic squint manifests itself in the direction of the affected muscle.

That is to say, covering one eye with a red glass in order to differentiate the images, if the test object, the light of a candle, is carried to the right and the images then separate, the affected muscle would be either the right external rectus or the left internal rectus.

Rule 2. — The paralysis is to be found in the muscle of the eye whose image keeps in advance during the test movement; the image lagging behind belongs to the sound eye.

Rule 3. — In case of paralysis, the recti of the vertical meridians cause crossed diplopia, the obliqui homonymous diplopia.

After it has been thus determined whether the paralysis lies in the vertical recti or the oblique, it only remains to apply Rule 2 to determine the particular muscle affected.

Rule 4. — The faulty image will show such a position to the correct one as the eye would assume if acted upon [illegible] by the muscle now paralyzed.

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[2] Ophthalmic Review, November, 1893.
[3] American Journal of Ophthalmology, July, 1893.

[4] New York Eye and Ear Infirmary Reports, January, 1893.
[5] Ophthalmic Record, December, 1893.
[6] Op. cit., February, 1893.

Rule 4 is not, as will be readily seen, necessary in order to simply make a diagnosis.

THE USE OF PRISMS.

Maddox,[7] gives the following maxims to be observed in prescribing prisms:

(1) Never order them unless indications for their use are unmistakable.

(2) Never order them simply on account of an anomaly in the behavior of the eyes under various tests, unless there is asthenopia, headache, tendency to diplopia, or giddiness, possibly relievable by them.

(3) Do not judge by one test, but by the "finger," "rod" and "card" tests, and if specially indicated by the relative convergence test also.

(4) Remember that considerable latent deviation in distant vision is more important than in near vision (though the latter is not to be ignored), and that moderate divergence in near vision is physiological.

(5) Always more or less under correct with prisms.

SYMPATHETIC OPHTHALMIA.

Schirmer,[8] in a comprehensive article of more than two hundred pages, has gone over the whole question in regard to sympathetic ophthalmia. The article is timely, as Deutschmann's theory is not nearly so fully accepted now as it was upon its first publication. Sympathetic inflammation is again differentiated from sympathetic irritation. The latter has two well-marked characteristics; there is no inflammation, and the influence of the injured eye stops short upon its enucleation.

In regard to the cause of sympathetic inflammation, our author divides all reported cases into two groups: (1) cases in which the tunics of the eye have not been perforated; (2) cases in which the tunics have been perforated. All the reported cases of the first group are gone over from whatever cause; and our author does not admit that the resulting sympathy of the second eye was anything more than sympathetic irritation in any case, with the exception of three cases of choroidal sarcoma with no perforation of the tunics but with a well-marked irido-cyclitis and its complications. In these cases Schirmer thinks the sympathetic inflammation probably due to the irido-cyclitis, which may have been due to endogenous infection through the presence of organisms in the system at large, and that the presence of a tumor provided specially favorable conditions for such an infection, and that a migration of the infection from one eye to the other was then reasonable. In considering the second group of cases, he shows that all the cases which excited a true sympathetic ophthalmia either had at the time or had in some past time had a uveitis, thus confirming the assertion of von Graefe that an inflammation of the uveal tract was a necessary factor in the production of all cases of sympathetic inflammation.

In most cases an interval of three weeks intervened between the injury and the inflammation of the sympathetic eye; in a few cases the interval was less than this by two or three days; and in two reported cases in which the interval was only fourteen days, our author considers the evidence not conclusive.

Inflammation has appeared in the second eye after the removal of the injured eye many times. It may occur at any time within three weeks; and in a few cases the interval has been even a few days longer. In two cases the eye was removed within a day or two after a severe injury, which caused a severe and somewhat persistent orbital cellulitis, and sympathetic inflammation began in one case after five weeks and in the other case after seven weeks, and was attributed in each case to the transmission of the infective inflammation from the orbital tissue. Two cases of sympathetic inflammation after evisceration are reported; but as the outbreak occurred within the period in which it may occur after enucleation, they do not prove that evisceration affords less safety than the entire removal of the eye.

An optico-ciliary neurotomy has been followed a considerable number of times by sympathetic ophthalmia. It is well established that reunion of the optic and of the ciliary nerves may take place, and even in one neurectomy in which the optic nerve to the extent of fifteen millimetres was removed, sympathetic inflammation began four weeks after the operation. It is probable, however, that the operation diminishes the risk to the other eye.

Our author advances the following facts as opposed to the theory that irritation through the nerves is the cause of sympathetic ophthalmia. Irido-cyclitis in the exciting eye is an essential condition. In the vast majority of cases this irido-cyclitis is of bacterial origin. Mechanical irritation of the ciliary nerves even associated with intense pain, as in glaucoma, does not induce the disease. A transmission of such a nerve influence along the optic nerve is inconceivable when, as is often the case, the nerves are completely atrophied. Finally, when a sympathetic irritation is produced by a nerve influence, it is cut short by enucleation.

The bacterial theory of the disease would account for all these facts. There is little reason, however, for supposing that the ordinary pyogenic coccus is the organism in question, and until we learn the tests for detecting the presence of the specific germ of this disease, we cannot definitely determine its method of transmission. A direct migration from one eye to the other seems probable.

For treatment our author formulates the following rules: An eye which is blind, and which is in a condition to excite sympathetic inflammation, should be removed, without waiting for any sign of sympathetic inflammation. If sympathetic inflammation has already broken out, the exciting eye, if blind, should be removed. If the sympathetic inflammation breaks out while the exciting eye retains some vision, the exciting eye should not be removed, for sometimes the second eye is entirely lost, while the exciting eye recovers more or less vision, and permanently retains vision. It is possible that both eyes may recover useful vision. From the clinical records the best treatment, aside from enucleation of the exciting eye, appears to be, sweating, mercurial inunction, warm compresses, darkness, atropine, and absolute rest of the eye. Operative interference to aid vision should be postponed as long as possible.

PURULENT OPHTHALMIA.

Hindl,[9] in an abstract of a paper upon purulent ophthalmia from the standpoint of its specific microbic cause, gives, among others, the following conclusions:

[illegible]

(1) That all cases of purulent conjunctivitis are of microbic origin, and due to Neisser's gonococcus.

(2) That all cases originate from a gonorrhœal focus, by devious paths often, and not always traceable.

(3) That those parts of the conjunctival sac having a cylindrical, or a modified cylindrical epithelium, namely, the palpebral portions and that of the fornices, are the seats of election of the micro-organism.

(4) That the location of the gonococcus on the mucous membrane is first super-epithelial, then inter-epithelial, and still later sub-epithelial, and all combined.

(5) That its special habitat is within the pus cell, yet it is also extra-cellular as well as intra-epithelial.

(6) That the associated inflammation of the adjacent lid-tissues is due to the lymphatic absorption of the ptomaines of the microbe.

(7) That the compact stratified epithelial layer of the scleral conjunctiva and cornea is very resistant to the attack of the gonococcus.

(8) That ocular complications are due to pressure-necrosis, producing an infection atrium through which the streptococcus, and may be the staphylococcus, find ready entrance to tissues with greatly impaired physiological resistance and often rapidly destroy them; resulting in perforation of the cornea, intra-ocular infection and loss of the eye. This is a secondary infection.

(9) That the therapeutical indication is the mechanical removal or destruction of the gonococcus with its ptomaine, and that if this is done early and thoroughly in the weeping stage, the period of acute inflammation will be cut short and the ocular complications avoided.

(10) That it is well, in the incubative stage, even without positive evidence of a gonorrhœal origin, to regard with suspicion all cases of severe monocular catarrh, and especially so in the female, irrespective of age or condition, and to treat them as if due to the gonococcus. . . .

(11) That, of all local remedies, nitrate of silver is the most potent and at the same time, least irritating microbicide we possess. It prevents complications and can be used in sufficient strength to destroy the gonococci without risk of injury to intact ocular tissues and that solutions of greater strength than two per cent. are unnecessary.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, November 13, 1893, the President, Dr. C. F. FOLSOM, in the chair.

DR. G. W. GAY read a paper on

SOME CASES OF STRANGULATED HERNIA.[1]

DR. D. W. CHEEVER: I understood the reader to say that opium after taxis, and previous to operation, might mask the symptoms. I should like to add to that, that its effect is even more dangerous and insidious, as concealing what we ought to do, if it is given, as it often is, by the physician before taxis is attempted. I have seen in private practice a good many patients who had strangulated hernia so comfortable under the influence of opium that they were not willing to be operated upon. Now this is a very serious state of things. The surgeon who is called to a case and finds capillary stasis on the surface of the abdomen, on the hands and about the nails, who finds the cool skin and flickering pulse, and that peculiar pinched look which is so characteristic of strangulation, who finds a bunch and has heard the history, cannot hesitate to think that operation is imperatively and immediately required. But the patient is very comfortable; his friends are naturally averse to having anything done; and all this may enforce a fatal delay. This is occasionally due to the subcutaneous injection of morphia, which has been given to such an extent as to mask those symptoms which are the only ones that can be appreciated by the patient and his friends. As an illustration of what quickness of operation will do, I should like to mention one case that I think was relieved perhaps as quickly as cases ever are. I take no special credit to myself for the occurrence, but I wish to put the credit where it belongs — upon the very sensible views of the patient, who was a woman of middle age. I saw her about two o'clock in the morning. She had been aware of the existence of a hernia, but had been perfectly well up to nine o'clock the evening before. At that time she went to the closet, had a somewhat constipated stool, during which she felt the hernia slip and come down. Pain, colic, nausea, etc., supervened immediately. She went to bed, and within a short time sent for assistance. She was in a lodging-house. I asked her if she was willing for me to telephone for an ambulance and take her to the hospital immediately. She said she was. The operation was over, and she was warm in bed and pretty well out of ether before daylight; and therefore the strangulation had existed only three or four hours before it was entirely relieved. Now the point I wish to make is this: that this was a feeble old woman with atheromatous vessels, rather a poor type of patient; the bowel was hardly showing the signs of constriction, and, of course, the operation was in every way the most favorable, and I never saw a case recover so quickly. Not the slightest bad symptom followed the operation, and she got about much sooner than any other person I ever saw. This shows what can be done under the best circumstances if people will submit.

I also wish to add my word to the very deceptive condition of these patients as to bearing any long operation. Instances have occurred a good many times in which, after prolonged etherization in these abdominal operations, the patient has suddenly given out, the heart and lungs have given out together, the bronchi become filled with mucus; sighing, gurgling respiration comes on; the operation is suspended, and death promptly follows. I have seen this occur several times. It is entirely unlooked for by one who has not seen it before. It is always unexpected and unlooked for by the etherizer unless he has had a large experience; and I would emphasize the point that the surgeon's mind must be almost as much on the anæsthetic as on the site of the operation itself. Now, in cases in which patients are considerably reduced, the question comes up whether we had not better allow them to go with an artificial anus, rather than do any prolonged operation. Most cases of artificial anus get

[1] See page 637 of the Journal.

well. I mean to say that [illegible] the immediate dangers of the [illegible] they finally close the opening [illegible] my experience with cases of artificial anus in the groin. I am aware that in cases in which colotomy has been done, what may be called rather ventral openings than openings low down in the groin, have been made, they often do not close, and require subsequent operation; but I think that a considerable percentage of cases of artificial anus that follow ruptured hernia finally close themselves; and in all times it has often been the case, when patients have had the bowel burst from mortification and abscess, that they have recovered finally, first going through the tedious stage of artificial anus. If this is so, I think we ought to be very careful about subjecting the patient to a formal resection of the bowel unless he is in a fresh and good state. If the patient is a strong man with a rupture down only a few hours, and if, on drawing out such a piece of intestine, you find it ecchymosed as result of taxis, if the bowel has lost its shiny appearance, there is a probability that these spots are going to slough. In such a case, if you have made up your mind that it is better not to return the bowel, it is wiser to draw it out, cut out the injured portion, make a clean resection, and such a patient will often get well. But if the strangulation has existed a long time, it is wiser sometimes to make an artificial anus than to resort to the other. Here comes in another very important point. The modern surgeon is very properly tempted to add the operation for a radical cure to the operation for strangulation. It is excellent if the patient can stand it; but it means prolonged handling and shock, and it seems to me that sometimes the combination of these two operations is not wise for the patient. In the treatment of these cases, it is a matter of judgment how much you think the patient can stand, how much he had better have done to him, how quickly it had better be done, and what are the best chances, not for curing the hernia, but for saving life.

In connection with this subject I should like to mention a case I had last week, not of hernia, but it has a bearing on methods of treatment. The patient was a [illegible]; a [illegible] ful young man accustomed to be about horses, and who in an incautious moment got kicked. The horse kicked him across, not squarely, so that the corks and the mark of the shoe showed in the thigh. It was a glancing blow, and the thigh was not broken; but the foot in going across came pretty firmly upon the cord and the upper part of the scrotum, not the testis. The patient had a varicocele for which he had done nothing. The blow landed to a considerable extent over this varicocele. He immediately became sick and faint and nauseated. Ecchymosis of the abdomen took place, and he was brought to the hospital. He had not a previous history of hernia, but the appearance of a rupture caused at the moment existed; the upper part of the scrotum was black with the extravasation of blood running up to the inguinal ring; and as far as [illegible] impossible to say what it was inside. I told him, under the circumstances, he had better take ether, and have an [illegible] hernia. It was entirely a hæmatoma from ruptured varicose veins which bled profusely, and had to be tied thoroughly, and the injury to these and the subsequent ligatures, I think, were the cause of sloughing of the testicle, which he will probably lose. This is the [illegible] tic veins. The other occurred to a delicate young lad who was playing ball, not foot-ball. Suddenly he turned pale, felt faint, and laid down and said something had given way about the inguinal canal. He was brought to my office in the evening. I examined him, and found a large swelling about the site of the ring. Then I insisted on an incision. Ruptured spermatic veins were found. There was no varicocele. The veins were ligatured, and he made a prompt recovery without any injury to the testis. Perhaps other gentlemen have met with these cases, but to me they were rare.

Dr. J. Homans: I think that the most embarrassing thing in these operations is to determine whether or not the intestine is viable. If it is not, you don't want to return it; if it is, of course you do. If you do not return it, you want to make up your mind whether to resect it, or to attach it to the ring, if it is not already sufficiently attached, and open it. Last summer I had a case of strangulated hernia in a lady about fifty years old, who was brought down from Rutland, Vermont. After opening the sac I examined the bowel and thought it had a fair chance of living. I returned it, and she got along very well for four or five days when the bowel gave way, and she died of peritonitis. In that case I made an error of judgment. The question of doing a radical operation for the cure of the hernia, at the same time that you relieve the strangulation, must be settled by the condition of the patient. If the patient is in excellent condition I think it might very well be attempted; if the patient is feeble the less handling you do the better. There are other strangulated hernias besides those of the bowel and omentum. As a general rule when I operate on a strangulated omental hernia I remove the omentum, — sometimes I have removed a number of pounds of it, particularly at the umbilicus. I saw a case of strangulated hernia at the hospital about a year ago, where the contents of the sac were exceptional. I was called in the night to see a woman about thirty-five years old who was four and a half months pregnant. She had a swelling in the left inguinal region over the crural ring which I took to be an ordinary femoral hernia. I opened the sac which contained a good deal of fluid. To my surprise there was no bowel, but there was the left Fallopian tube with its fimbriated extremity, and about four inches of the tube, strangulated. It was difficult to replace this tube after I had enlarged the opening a little because it was like a piece of string, perfectly flaccid and it doubled up. However, I did return it, sewed up the ring, and the external wound, and the woman recovered. She was confined at term without trouble. She had had symptoms of hernia off and on for a number of years, and my theory is that as the uterus grew in size it got up to such a point that the Fallopian tube came opposite to this hernial opening and dropped into it. If she had not been pregnant I think it very likely that the hernia which occurred would not have contained the Fallopian tube.

Dr. C. B. Porter: It seems to me that there is amongst the profession and amongst writers on the subject a certain amount of confusion with regard to the nomenclature of hernia, that is, calling an incarcerated or irreducible hernia, strangulated hernia. It was only a short time ago (in the Edinburgh *Journal*) I saw six cases of strangulated hernia reported. No detailed account was given, but it was said that they all reduced themselves under the internal administration of one-fourth of a grain of extract of belladonna. Evidently there was a mistake in nomenclature. Those were irreducible for the time being, but not strangulated hernia. In strangulated hernia there must be attending the hernia constitutional symptoms like nausea, vomiting, pain, colic, colic in the abdomen, pain at the seat of the constriction and generally constipation. Those in a more or less marked degree having existed a longer or shorter time, mark the condition or make the condition which is considered a strangulated hernia. Given those symptoms in a mild degree, palliative measures it seems to me might be considered perfectly proper, as the application of ice, putting the patient in the exaggerated Trendelenberg position. I have been able to reduce what were previously irreducible hernia, but not strangulated at the time, by putting the patient in the Trendelenberg position, and any one who has operated in that position knows that the tendency is for the intestines to fall towards the thorax and to drag upon the part which has become incarcerated in the internal ring and the patient is in the best possible position for the reduction. If the symptoms are marked, — marked vomiting, colic, — if they have existed any length of time I think any surgeon would hesitate to resort to palliative interference. The first thing is to relieve the constriction; then comes the question, and that is very important to decide, as to what shall be done with the contents of the sac. Those contents are either omentum or gut. If the omentum is strangulated it should be tied off in sections, that is, it should be dragged down until healthy omentum is found, tied off in sections, the gangrenous part cut away and the rest returned to the abdomen. If not gangrenous it may be returned without ligatures. There remains to determine whether or not the gut is viable, — the most important thing in connection with the operation. If there is any doubt I think the best method is to treat either by artificial anus, by excision or by retaining the gut in position, the constriction having been relieved. The constriction having been relieved, if it is doubtful what the condition of the gut is, it seems to me better that it should be packed in the wound and there retained until it is determined whether it is viable. If it is not viable, then an opening should be made into the gut and an artificial anus established, if the patient is not able to stand any further operation. In connection with the establishment of artificial anus I wish to mention some cases in contradistinction to what Dr. Cheever has said, "that the cases of artificial anus usually cure themselves." The first two cases of intestinal suture I ever did were in cases where there had resulted an artificial anus from inguinal hernia, which did not close. There was a constant discharge of fæces from the inguinal opening. The first case was that of an old woman. I relieved the intestine and brought it out until all the ulcerated part could be found. I used the Lembert suture; suture of the intestine was done, the intestine put back into the abdomen and complete recovery followed. Some years afterwards I saw the post-mortem specimen. The other case I saw in Lynn while there in consultation upon another case. I found a man in bed in a pool of fæces; he was reduced to the lowest extremity of flesh, and he said to me: "Dr. Porter, if there is any hope whatever of being cured I should like to have an operation." He said: "This is the first time that a glimmer of hope has been given." I said: "If I were in your place I should want to make the trial." He came to the hospital and a successful operation was done. With reference to the establishment of artificial anus, it must be remembered that the small intestine is more frequently the location of a hernia than the large, and that if the artificial anus is especially high up malnutrition follows and sooner or later some operation must be done, so that if the patient can endure the operation after dividing the stricture, it seems to me wise to do an exsection at that part; but an artificial anus should be established if the patient cannot endure exsection and enterorrhaphy. If the patient has strength to endure exsection of the diseased tissue and the enterorrhaphy, that is the next thing to consider; and in connection with that it is most important to be sure to get beyond the gangrenous portion. Kocher has removed five feet and Koeberle six feet of intestine successfully, so that the loss of a few inches more of intestine is not of moment, but it is of great moment to get to healthy tissue, that which has not been subjected to constriction at all and the intestine should be dragged down until that tissue is found, then enterorrhaphy made; and I believe an enterorrhaphy by continuous suture can be very rapidly made. I do not think that Senn's plates, Abbe's rings or Murphy's button for closing the intestine should be used under these circumstances, because the opening must be made much larger in order to reduce the intestine into the ring. The enterorrhaphy having been made, then comes the question as to what shall be done, whether the intestine shall be returned immediately into the abdomen or watched. There is a great difference of opinion with regard to what shall be done by those who have had the largest experience. Mickulicz says the suture having been made, the intestine should be dropped back into the wound in the groin, that no attempt should be made to close the wound in the groin, that if the intestinal suture is not competent, that then if the wound is open, if the intestine gives way the extravasation of fæces will be towards the wound and there is no danger. There are others who say that that should not be done, that the intestine should be kept outside and the suture watched, just as the intestine should be watched if it is a little doubtful, there being no constriction, and there is another German writer, Hahn, who says it is better to make an opening in middle line having sutured the intestine, leaving it there, close the inguinal opening and keep it there packed in gauze until sure of the suture and then return and close the abdominal wound. I believe it is better to keep the intestine in view if you are not sure of the viability of the intestine and the competency of the suture, otherwise it should be dropped in. I have never kept one outside yet. I have never had occasion to regret dropping an intestine back but once. That was a case of pyosalpinx where the intestines had been adherent to the tumor and torn in the operation. It should have been kept in the wound and an artificial anus established. It did not occur to me that the peritoneal coat was not intact. Where the patient is able to endure it after relieving the constriction I should say do a radical operation; if the patient cannot endure it an artificial anus should be established and left to be treated subsequently.

Dr. Brokaw, of St. Louis: I am a little diffident about making remarks upon this subject. I am sure I did not hear the beginning of the paper, but from the remarks that have been made I catch the drift of the discussion. Personally I speak from a rather limited experience. I have had more or less experience, however, in the matter of intestinal surgery. One or two thoughts occur to me. One remark by Dr. Porter in regard to the matter of aid sutures particularly interests me. When Senn commenced his work in experimental intestinal surgery which had every promise of electrifying the surgical world, I was at work on an intestinal suture, the ring which I devised being the segmented rubber ring filled with catgut. My idea was that the absorption of catgut would take place and that the segments of rubber tube would pass away. Experience on the dog is very satisfactory to the inventor, but every experience has led me to believe that all the aided sutures are not what the inventors claim for them; possibly an exception might be made in the case of gastroenterostomy where the aided suture or ring would answer very well. I have abandoned all the methods. I have tried all except Murphy's button. In the matter of their application to strangulated hernia where you have gangrene, it occurs to me that they are out of place; they necessitate a larger opening than is necessary simply to relieve the constriction. Again, the question comes up, Shall we do anastomosis at once or wait? I think that no experience in the matter of herniotomies will be of sufficient weight at present to dictate to surgeons in general what shall be the procedure in each and every case. I think there is a law fitting to each and every case, and I don't think that we can apply any specific rules covering all cases. I think that each case should be governed by the conditions that are present. I have seen gangrene of the intestine take place where there were very few symptoms; I have seen gangrene of the intestine take place in a very short time with very pronounced symptoms. What shall we do when confronted with such a problem? I think we shall have to rely on our own judgment and not on the experience of others. As to anchoring the intestine and waiting, I believe that is a very good idea, but unfortunately I am a little at sea to know what to do in some of these cases. I call to mind an unpleasant experience in which after anchoring as I supposed fairly securely, I found about four feet of the intestine outside of the partially open wound. Various devices have been called up, such as strapping a glass cap over the wound so that only a limited amount of intestine could be forced out. But it will break away the anchoring sutures in almost every instance if great care is not exercised. I am rather inclined to believe that while experience of individual operators is valuable, yet that each case as the emergencies arise is to be met in the most intelligent manner possible. I am rather in favor in cases where there is any doubt about the condition of the patient of not doing a radical operation such as resection at once. When I have done a resection in cases where the individual was at a low [illegible] amounted to nothing more than a surgical exercise, and I therefore think that to relieve the constriction, place the intestine in the best position within the wound, drawing the integument a little over the intestine, using one or two or more sutures, making latticework as it were with the integument and anchoring the intestine in place is the best we can do in most of the cases. If you subject a patient to the operation of resection that takes time. I am a great advocate of doing all the operations of abdominal surgery in the shortest possible space of time. I think many of the bad results are not to be [illegible] to the operation as to the anaesthetic. That question does not come in here particularly. I want to say while I have done a fairly large amount of experimental work, with some work on the human subject in this line, I have abandoned and I am frank to admit and take back all the recommendations of aided sutures, plugs, plates, etc., I made early after publication of my work on intestinal anastomosis, and I now condemn absolutely the use of the intestinal plates and aided sutures of any kind whatsoever. You can accomplish just as much, and almost as rapidly with the interrupted or the continuous Lembert suture, and you can have an opening quite large enough so that when subsequent contraction takes place, which follows rapidly, a failure in the ultimate result does not follow. You can make an anastomosis with an opening in the bowel two and a half to three inches. If you use a plate you have to introduce within the lumen of the intestine a mass of foreign matter which has to come away, and very frequently parts of it are retained for quite a little while. I have seen a rubber tube come away five or six weeks afterwards, and in gastroenterostomy I have had patients vomit parts of my ring; but taking the so-called absorbable rings, for instance Abbe's ring, that does not hold the parts together I think nearly as well as the simple suture. When you come to Senn's plates it may or it may not be absorbed; they cause kinking and are liable to bring about late obstructive trouble. Stricture is bound to follow. I hope that Murphy's button will prove more than a makeshift. I hoped that my rubber segmented rings would be of value to every surgeon, but I have become convinced that the unaided method by simple suture is the best suture in the hands of experienced abdominal surgeons — the aid sutures for the beginners and unexperienced. I do not believe we can set down definite rules in this matter of herniotomy, and I think each case is to be governed by the circumstances.

Dr. M. H. Richardson: We should always bear in mind the possibility of strangulated hernia in acute intestinal obstructions, even if no tumor can be felt at the usual seats of hernia. A few days ago I saw a case of acute intestinal obstruction at the New England Hospital, in the service of Dr. Mary Smith, due, as I supposed, to the sudden closure of a cancerous stricture. After Dr. Smith had exposed the intestines and had examined them from the jejunum to the sigmoid flexure without finding the cause of the trouble, a small segment of the small intestine was discovered in the internal ring; — it was a case of strangulated hernia with total obstruction discovered only by laparotomy and complete turning out of the contents of the abdomen. There was not the slightest reason for suspecting such a condition except on general principles. In my opinion the best treatment for a gangrenous hernia is, first, that which gives the best promise of life to the patient, and secondly, that which restores the lumen of the intestine; therefore, if the patient's strength is good, I believe in the performance of an excision with suture. This operation ought not to last more than one hour; — if the patient's strength does not admit of this, I think an artificial anus should be made. I have never seen a case in which anastomosis seemed to me the better operation either in acute or in chronic obstruction. Conditions do, of course, exist both in chronic and in acute obstructions in which an anastomosis is indicated, but this operation as I understand it — never having performed or seen it — seems to me as complicated and difficult as end-to end suture. I believe the surgical profession is coming to this opinion that, when possible, immediate excision and end-to-end suture is the best thing. If this cannot be done safely, I think the next procedure in gangrenous hernia is to make an artificial anus. The subsequent resection is comparatively safe, not only because it may be done deliberately with full preparation of the patient and the bowel, but because the peritoneum becomes more tolerant. I remember very well the first operations for the closure of intestinal fistulæ that were performed in this community. I refer to the cases of Dr. Porter in which excision and suture of more or less of the circumference of the bowel was followed by immediate and most gratifying recovery. Recovery has followed all the secondary excisions and sutures that I have made myself; even in cases of resection and suture for acute conditions the results have been encouraging, though the prognosis is more unfavorable in the latter. Instead of leaving the bowel entirely outside, or of fastening it in the wound, the device which I have described elsewhere of protecting the line of suture by means of gauze seems to me to offer a very safe remedy for the dangers of end-to-end suture.[2] The only danger to a patient strong enough to stand the operation is in extravasation and general peritonitis. In two of my cases of complete resection and suture there was a small escape of fæcal matter some days after the operation. This was promptly drained by the gauze I had placed over the stitches, and no harm resulted. A small fistula remained — such as we see in appendicitis — which in each instance cured itself.

Dr. E. H. Bradford: In confirmation of what Dr. Porter said as to the danger of starvation from artificial anus I can contribute one unfortunate case. It was that of ordinary strangulated hernia in a feeble woman. Resection was not done. The woman recovered from the operation and lived ten days. At the autopsy it was found that the patient had died of starvation, owing to the short upper portion of the intestine. If resection had been done the patient might have died from shock, but if she had survived that, she would not, at least, have died of starvation.

Dr. Gay: Dr. Homans brought up two points upon which I want to say a word. The first relates to removing large quantities of omentum. In some cases that is successful, but we had one case at the City Hospital that was unfortunate; a large portion of the omentum was removed; the patient recovered from the operation, but as time went on, the stump of the omentum formed adhesions, which produced internal strangulation and rupture of the intestine, for which we had to do laparotomy, and the result was fatal. Another condition I have met with, is in the case of old women with enormous umbilical herniæ, which have become strangulated. You open a hernia of that sort and find the adhesions very extensive and firm. In one case of that sort I simply found the constricting ring, divided it freely, closed the wound, and left everything as it was before. She made a quick and satisfactory recovery.

Dr. Abner Post presented a

A CASE OF ŒSOPHAGOTOMY.[3]

Dr. M. H. Richardson: I am very much interested in the subject of operations upon the œsophagus, and I am very glad to see this case. The application of the principles of asepsis to this procedure as recommended and practised by the reader is timely, for in our operations upon the œsophagus we may be still clinging too much to the methods of pre-aseptic days. I have always left the œsophagus open, letting the wound close gradually by granulation. If I have another case of this kind without suppuration I shall close the œsophagus at once, leaving the external wound open. I believe the dangers of suturing immediately the œsophagus depend more upon the closure of the external wound than upon the closure of the œsophagus itself. In regard to the treatment of foreign bodies in the œsophagus I speak from a very limited experience, — the experience of most surgeons must, I think, be limited. I have removed foreign bodies from the œsophagus by incision twice: — once by gastrotomy,[4] and once by external œsophagotomy.[5] The former case recovered and the latter died. An external œsophagotomy for stricture was also fatal.[6] I have had better success in opening the pharynx than I have had in external œsophagotomy. I recall three cases in which I have successfully taken out the side of the pharynx for malignant disease. In two of them I removed also the tonsil. The pharynx was left partly open in all the cases. The principle is the same as in external œsophagotomies as to the dangers from sepsis: in pharyngotomy there is greater reason for leaving the wound open from the more complicated movements in deglutition and from the proximity of the larynx. (One of these cases is briefly described, with the specimen — a round-celled sarcoma — on page 320 of the *Boston Medical* and *Surgical Journal* for March 31st, 1892.) From the impacted foreign bodies the patients ran great risk, though one had remained near the cardiac orifice eleven months. The location of the foreign body is of great importance. Below the clavicle a short distance the œsophagus comes in contact anteriorly with the heart or the aorta; lower down it is in close relation with the thoracic aorta, and on the left side with the pleura; the only place in which perforation would not be followed by immediately fatal or very serious results is the posterior wall. It takes a very short time for a foreign body like a coin to erode the aorta or to set up a pleurisy or a pneumonia. I think the dangers from external œsophagotomy under the aseptic conditions which Dr. Post describes are very slight.

It seems to me that this operation for the removal of foreign bodies is not justifiable until gentle efforts at extraction have been made through the mouth. When pointed bodies are impacted the use of the coin-probang may be dangerous, because after the probang is fast it cannot be withdrawn without either dislodging the body or breaking the instrument. Forcible attempts at dislodgement are extremely hazardous, and no instrument should be selected, therefore, that may not be under perfect control. In one of my cases the probang got hooked in this way under a tooth-plate, and the surgeon was obliged to use enough force to break off the metallic end. This part was afterwards discharged by the rectum. On the other hand, in the case of a plate of teeth which had been impacted in the œsophagus at the level of the clavicle eleven months, I used the coin-probang with the greatest ease and success.

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[2] Boston Medical and Surgical Journal, March 3, 1892.

[3] See page 642 of the Journal.

[4] Boston Medical and Surgical Journal, December 16, 1886.

[5] Loc. cit., April 27, 1893, page 421.

[6] Loc. cit., January, 1892, page 58.

The last case of foreign body in the œsophagus that I have seen was in an insane person who had swallowed a teaspoon. I removed the spoon by external œsophagotomy, and the patient died two days afterward. We were unable to find the cause of death, but it is probable that the sharp edge of the silver spoon had cut through the œsophagus. In impacted foreign bodies, exploration should be made early; we should not wait for such symptoms of erosion as pleurisy or pneumonia or septic absorption. In opening the œsophagus above the clavicle we may explore with the finger to a point just below the arch of the aorta, and more or less intelligent use of instruments may be employed, even if the foreign body is lower down. If the impaction is at the cardiac orifice, the stomach route may be used successfully, as in my first gastrotomy and in the cases reported later by Bull and Phinney.

Dr. Brokaw: I have nothing to add of particular interest except one point in regard to the use of probangs and various instruments, particularly the coin-catcher. I am rather afraid to use them after an experience I had a year or two ago in the case of a child who had swallowed quite a large piece of bone. The piece of bone lodged very firmly and I tried everything to dislodge it. I used the coin-catcher and it caught on the sharp edge of the bone. I removed it not without some effort. Quite a profuse hæmorrhage followed. The question arose, What am I going to do if the hæmorrhage keeps on? The hæmorrhage was terrific. He would vomit the blood, and he bled so furiously that I was very much afraid that I was going to lose the patient. What vessel of size I had hurt I did not know. The mucous membrane probably was the origin of the bleeding. I think the use of these mechanical measures for removing a body whose exact location, shape and character we do not know, is like catching fish; we do not know what kind of fish we have on the hook. I think the operation of œsophagotomy should be done more frequently than it is. There are three points where the impaction can take place; at the junction of the pharynx and the œsophagus, then one and a half inches below that and at the cardiac end of the œsophagus. At those three points we have normally some constriction. Of course if the body is well down it is impossible to reach it from above very readily and by making an incision we at least gain the difference in space from the teeth to the beginning of the œsophagus where most frequently, fortunately, the impaction takes place. I wish to congratulate Dr. Post on the success he had. Having recently looked up the literature, I know of no case where immediate union by suture occurred or where it was attempted to suture the œsophagus at once. I see no reason why it should not be done. It requires an aseptic suture and that the sutures be placed with the very greatest accuracy so that there shall be no possibility of leakage; and I believe in these cases it is unwise to feed two early after such operations.

Dr. D. W. Cheever: My contribution will be chiefly historical. In 1868 I revived the subject here by looking up cases, and by operating on two cases, and it is quite interesting to note that previous to 1868, although a great deal of good surgery had been done in the world, yet the operation of œsophagotomy had been done but twenty times in the history of medical literature; the first time in 1760 or 1770, and up to 1868 twenty cases were all that were recorded; and since 1868 one hundred and forty odd cases; so that the latest tables give, I think, one hundred and sixty or one hundred and seventy cases in all. It is curious also to note the fact that the percentage of mortality is the same that it was in those first twenty cases, that it remains obstinately at 25%; that one in four die from the operation of œsophagotomy. The reason of the deaths is the lateness of the operation. If the operation is done early it is almost sure to save the patient. Demarquay, some thirty years ago, made a large number of experiments in France, on dogs, and the results show that foreign bodies impacted in the œsophagus tended to produce inflammation and abscess after the third day, that the third was the latest in animals, — in which inflammatory processes are slower, whose systems are more tolerant than ours, — that the third day was the latest that a foreign body could remain in the œsophagus without provoking inflammation that was sure to end in abscess, and abscess that was destructive of life, frequently. Among the first twenty cases I recorded, four died; and in all of these abscess had occurred. The lung and pleura had been perforated, the aorta had been perforated once, and posterior mediastinal abscess had occurred in another case; and in one case caries of the vertebræ followed and the patient survived a while, but finally died from this. So now, although the operation has become popular, the mortality has not decreased; and I think it is only because it is not done early. The last case I had was about a year ago. My delay, I think, added to the fatal result. My delay was a very foolish one. The patient came to the hospital and was a half-demented, feeble person, an epileptic; his description of himself was very imperfect. He was regarded as probably an hysterical patient; and not seeing any of his friends and not realizing at the moment what might have taken place, I let a day go by. Then some of his friends came and gave an intelligent account, — that the man was found in an epileptic fit, and that he had a set of false teeth, and when picked up part of the teeth were gone. Then I realized that there might be something in the œsophagus. Meanwhile he was sitting up in bed, and swallowing liquids with tolerable facility. On passing the whalebone probang with the ivory knob, at the depth of nine inches from the incisors I came upon a hard substance which was the plate and six or seven teeth attached. The location was below the nipple, nine inches from the incisors. It was rather a question what I had better do, whether I could recover it through an opening in the œsophagus, or had better imitate Dr. Richardson's manœuvre of opening the stomach and getting it from below. I did œsophagotomy, and was a long time extracting the substance. There was no hæmorrhage, but it slipped and slipped, and finally I extracted it. The patient did pretty well for a day or two, but gradually sank and died in the course of the first week. I never saw the œsophagus unite by first intention. I belong to the old school which does not sew it up. I never gave the patient anything to eat in the first twenty-four hours, but nourished by the rectum. It is not always that the wound leaks. It may not unite, but does not leak always. In operations in the pharynx, possibly the muscles of the pharynx are more apt to overlap and close in the act of swallowing. at any rate, operations done on the pharynx from the outside do not leak. The œsophagus is more apt to leak, but they all recover. I see no objection to suturing the œsophagus if the external wound is left open. The dangers are of leakage, deep cervical abscess, mediastinal abscess, and death if this occurs and is not promptly recognized. I should think if the œsophagus is sutured and the wound left open, it might be an advance in the *technique* of the operation.

Dr. J. Homans: I should like to mention a case where a quarter of a dollar was retained four and a half months. The little girl was brought to the hospital some ten years ago. The coin came up at once on the bristle probang. It was very black, as all coins are which have been retained in the alimentary canal. The child had been able to swallow fluids, and no serious trouble had resulted from the presence of this foreign body.

Dr. C. B. Porter: I wish to say a word in reference to two cases under my care. One was at the hospital two or three years ago. It was that of a woman who six weeks before had swallowed the better part of an artificial plate for teeth. The teeth were not on the part swallowed. It was quite readily removed by the coin-catcher. Another case was that of a man who came and said he had swallowed his whole set — two teeth on each side. I tried to catch it with the coin-catcher, but it slipped and went into the stomach. He said he would keep watch, and if symptoms developed he would let me know. About six months after that I received a paper stating that this man had recovered the plate and the four teeth. The teeth had become separated from the plate, and he had passed them per anum and was happy. That is a pretty large body to pass; but I remember as long ago as I was a student under Professor Wyman, of Cambridge, I spoke to him about the passage through the alimentary canal of foreign bodies, and he said never despair of anything after it has once got down. He told me of a case of a man who swallowed a large-sized jack-knife with the blade open, which passed successfully by the rectum, passing through without wound.

Dr. G. W. Gay: I have done œsophagotomy four times. The most satisfactory case was for the removal of a cent from the œsophagus of a child three and a half years old. She had carried it several months. During the last month she grew very thin, and got so that she could not swallow anything. Chloroform was given. The patient recovered. The second case was that of a plate of false teeth. It was removed after five days. The man died of exhaustion and shock. Another instance was for a fish-bone, which recovered very promptly. I once opened the œsophagus in order to pass a probang through a cancerous stricture into the stomach, upon which I could pass the Simond's tube. The lower opening was located upon one side of dilatation in the œsophagus, so that no effort of either Dr. Mixter or myself could get a probang through the stricture. That was successful, and the patient lived several months. Another case is interesting from the fact that the symptoms were so slight, and the patient could swallow so well, that I was misled and missed the opportunity of doing the operation at the right time. The woman had got a little piece of wood into the œsophagus. She died, and the autopsy showed an abscess in the anterior mediastinum, which contained a small sliver. Another case, which happened in the practice of Dr. Garceau, of Roxbury, is interesting. A woman swallowed a small bone, which lodged in the œsophagus. The doctor passed a sponge probang, and pulled out a bone about an inch long. The patient was not relieved by the operation. I saw her the next day. The question arose as whether the bone had caught in the walls of the œsophagus and had been broken and a part been left. She was old and feeble, and I thought we had better wait. The next morning the lady got out of bed, while her attendants were out of the room, and dropped upon the floor dead. The autopsy revealed rupture of the left auricle of the heart. There was no fish-bone nor other foreign body in the œsophagus.

Dr. Post: The fortunate result, I think, occurred in spite of the fact that the operation was so long delayed, and the few bubbles of gas, the commencing emphysema, showed that the operation was delayed as long as it ought to have been, and that symptoms were just beginning which would very likely have led to less favorable ending if interference had not taken place. The coin-catcher made a most uncomfortable sensation as I passed it. I hit upon the coin with it, but did not engage it; but the coin seemed so firmly fixed that the thought went through my mind that if I had caught it with the instrument and failed to extract the coin, it might have been extremely difficult to disengage the instrument itself. The œsophagus was not sutured. The only sutures were in the upper and lower ends of the external wound, leaving the middle of the wound perfectly free, with the intention of giving a free exit to alimentary substances or to any discharge.

Dr. John Homans read a paper on the

REMARKABLE EFFECTS OF DIVULSION OF THE URETHRA.[7]

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Recent Literature.

Outlines of Obstetrics. A Syllabus of Lectures delivered at the Long Island College Hospital. By Charles Jewett, A.M., M.D., Professor of Obstetrics and Pediatrics in the College, and Obstetrician to the Hospital. Edited by Harold F. Jewett, M.D. Philadelphia: W. B. Saunders. 1894.

This little volume is, as its title implies, a syllabus of Dr. Jewett's lectures at the Long Island College Hospital, and is primarily intended as an assistance to the students of that college in their assimilation of their obstetric course, and is certainly admirably adapted for that purpose. It is not sufficiently full to be of value as an independent source of information to the practitioner. We have no doubt that many a busy physician would be enabled, by a perusal of this book, to find many weak points in his knowledge which ought to be brushed up by a study of a more extended work. To the specialist it possesses much interest, since it enables him to gain an accurate idea of Dr. Jewett's position on the many points of interest in obstetrics with a minimum loss of time.

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[7] See page 641 of the Journal.

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ANNUS MEDICUS, MDCCCXCIII.

The medical year now closing, though unmarked by [illegible] of special or unusual importance, has been an interesting one in many ways. The new work in medicine and bacteriology has been along the line of therapeutical application of present theoretic knowledge, rather than of new discoveries. The theory of blood-serum immunity has claimed much attention, and promises good results in the not far distant future. The fear of another cholera epidemic led, during the winter and spring, to important sanitary action on the part of national and municipal governments; and the result of the improved hygienic condition of many large cities has shown most conclusively that the real treatment of epidemic disease is prevention. The medical profession has suffered great loss by the deaths of Jean Charcot and Sir Andrew Clark, both of whom died suddenly in the fulness of their intellectual [illegible].

EPIDEMICS.

The Cholera Epidemic this year was in marked contrast to that of 1890 and 1892. There was not the invasion and steady progress across Europe as in those years, but a relighting of the various centres of disease left smouldering during the winter; and in every place affected this year the disease was light and easily controlled, or virulent and general, just in proportion to the amount of cleaning up which had been done during the months of freedom. Never was a better example of this truth of the preventive value of cleanliness and vigilant isolation than in the city of Hamburg. Last year's terrible epidemic taught the lesson; and this year, owing to the improved sanitation and purified water-supply, the total number of cases was only a few score. The epidemic was chiefly European, and was not a new incursion from India as last year. By February it had pretty nearly died out all over Europe; and even Russia was declared free from the disease, though there is strong reason to believe that there was unavowed cholera present in St. Petersburg [illegible] minimum of 13.5° F. lower than has been recorded for one hundred and thirty-eight years. In Podolia and the Volga provinces there were nearly a thousand cases during January and the first half of February.

On March 18th cholera appeared in a decided form at Odessa, and was suspected to be increasing in St. Petersburg, though denied by the Government. Throughout the Russian provinces it made steady gain, not along any definite route, but appearing simultaneously in many places. Astrakhan, Moscow, Nijni N[illegible] and chiefly infected. Shortly afterwards cases made their appearance [illegible] Austria [illegible] Hungary, and in Galicia, [illegible] from Podolia. By the middle of April, all the southern provinces of Russia and the neighboring frontiers, had a largely increasing number of cases, many of them fatal. At this time the disease, which had been casually reported from Lorient near Brest in France, assumed serious proportions; and simultaneously cases occurred in many [illegible] France [illegible] ports in northern Italy. Up to the middle of May, Russia bore the brunt of the epidemic, Podolia especially having a large number of cases. In Austro-Hungary it spread slowly along the river tributaries, chiefly with isolated cases. On May 27th the first case was reported from Hamburg; and the same week Marseilles, La Rochelle and Toulon became infected.

The most serious outbreak of the year now made its appearance in Mecca, which had been free from disease during the spring. The pilgrimage to the Holy City began the last of May, and by the end of June over 32,000 pilgrims had passed through Suez; and by the middle of June it was estimated that there were over 100,000 persons gathered at the Sacred Mount ready to start for Mecca. The first case of cholera occurred June 8th, and the number grew rapidly. Between the 16th and 20th there were 830 deaths, the next day 455, and by the following day 1,000. A few days later the disease broke out at Jeddah. In three weeks there were 5,000 deaths. The return pilgrimage began the first week in July; and by the middle of August the epidemic had come to an end, with a death-roll of some 10,000 persons. The quarantine established at El Tor for returning pilgrims served a most useful purpose. There were 135 cases and 91 deaths only, and the disease was not carried past into Egypt.

By the middle of July cholera had appeared in Spain, in some twenty towns in France, and in several Italian cities. In Naples there were 90 cases the last week in June; but the Italian Government declared there were none, and no precautions were taken in any way. Not content with this, it officially suppressed dispatches sent by foreign representatives and newspaper men. In August the disease broke out in Palermo; and both here and in Naples there was a serious epidemic, with many hundred cases before it ceased.

In Russia, July and August saw a continued increase in every part of the country, the total number of cases reported from January to September being 62,107, with 24,284 deaths, as against 133,643 cases and 215,137 deaths in the corresponding time in 1892. The epidemic was not only smaller, but less severe, there being one-seventh as many cases, but only one-ninth as many deaths. Germany remained practically free from the disease; a few isolated cases at Berlin, Stetten and Hamburg being all there were.

In Antwerp the disease appeared July 28th, and ran a moderately severe course. In Holland some thirty-four places were infected. In Spain the cases were few in any one town, but nearly fifty centres of disease were reported during the summer.

In England the cholera gained a foothold at Hull and Grimsby in the middle of August, and a considerable number of cases with many deaths occurred. Isolated cases were reported from London, Liverpool, Leicester and several midland towns.

The sanitary regulations, elsewhere referred to, issued by our own government in the spring, and especially the detailing of special inspectors for the chief European ports, to supervise the disinfection of emigrants and baggage before sailing, undoubtedly saved the United States from an invasion of cholera. On August 4th the steamer *Karamania* arrived at New York from Naples, having lost three steerage passengers during the passage. She was quarantined, and the passengers kept under surveillance. Twenty-two subsequently were sent to the hospital with true Asiatic cholera, and three of them died. August 29th two deaths occurred in Jersey City from acute diarrhœal diseases, which bacteriological examination showed to be Asiatic cholera. These cases had not been in contact with the immigrants on the *Karamania*, and no cause was found for the occurrence. No other cases occurred in either city.

Small-pox has been widely distributed during the year. On the Continent it was nowhere epidemic, but in England it has been exceedingly prevalent and wide spread. In London, especially, the disease assumed serious proportions. In February there were over fifty cases a week, and during March and April the number was still very high. From January 1st to June 1st there were 1,450 cases and 86 deaths in London alone, a mortality of nearly six per cent. During the summer there was a falling off in the number of cases, which reached the lowest point early in September, when there were only two or three a week. The last of October saw an increase, and during November there was an average of fifty cases a week. Over all the rest of the island — especially in the Midlands, in Manchester, Birmingham, and Lincolnshire and Yorkshire — there was a seriously large number of cases.

In this country the disease has been reported from nearly every State east of the Mississippi River, showing widespread centres of infection and an insufficiently protected population. New York has naturally had the largest number of cases, but there was a serious outbreak in western Pennsylvania in March. In Reading, Pa., a city of 70,000 inhabitants, there have been 678 cases with 18 deaths between January 1st and December 11th. Chicago has reported many cases since October. In Boston there were two cases stopped at quarantine in May. October 30th several cases occurred in various parts of the city, traced to a case which was allowed to land from the Cunard Steamer *Catalonia*. This series of cases was followed by a second group traced to one family, which, however, had no connection with the steamer cases. In all there have been 26 cases and 4 deaths. In considering the question of protection by vaccination and revaccination it is important to give due weight to these facts.

Typhus Fever was reported from many districts in Europe, but no serious epidemic occurred. In New York there was another outbreak of the disease very much after the fashion of a year ago. On December 29, 1892, several cases of typhus fever were discovered in a block of cheap tenement-houses in one of the lower wards of the city; and within the first week of January, this year, 53 cases were reported. The epidemic while confined to New York City was not without serious menace, for it continued well into June before it subsided. Several nurses and attendants were infected and died. The total number of cases up to June 10th was 466, with 192 deaths, a mortality of 41.2 per cent. This is a more serious record even than that of last year, when there were a few over 194 cases and 29 deaths. This rapid increase in typhus fever in New York during the last few years makes all the more important and timely the new quarantine regulations and more strict supervision of immigration.

Yellow Fever continued its devastation at Santos throughout the first half of this year, which is now the third year of continuous epidemic disease there; scattered cases occurred at various southern ports during the summer, but without gaining foothold. At Brunswick, Ga., the disease appeared in July with a few mild cases, and there were occasional cases during August. In September the disease suddenly became epidemic, lasting until November 23d, when ice formed. A quarantine camp was established, and so efficiently maintained that the disease was confined entirely to Brunswick and Jesup. In all there were 1,001 cases and 53 deaths, 409 of them whites, one Mongolian and 12 blacks.

Influenza. — In the spring and early summer there was a mild outbreak of influenza in Italy and some other parts of Europe; but, generally considered, there was no pandemic, as there was last year. During the last two months many cases have been reported from England and Germany, especially on the lower Rhine and in Hesse. In this country the disease is said to be starting up in many places, but in a milder form than in the last two epidemics.

The whole continent of Europe, and particularly Russia and France, suffered greatly from the cold during the winter, the mortality from cold alone being greater than seventy years. An unusual and prolonged drought during the spring and early summer destroyed the crops and caused great hardship. In parts of France and Italy no rain fell for three months, and the farmers were obliged to kill their cattle for want of water to give them.

QUARANTINE.

The narrow escape of the country from an invasion of cholera in the autumn of 1892, the continuance of epidemic cholera in Russia during the winter of 1893, and the occasional occurrence of cases in different parts of Europe claimed the attention of sanitarians and public health officials, and forced the consideration by Congress of the unsatisfactory position of our quarantine regulations as well as of the imperfect equipment and variable, uncertain and unscientific administration at some of our ports of entry. The importance of securing co-operation from our immediate neighbors to the north and south, and the necessity of regulating the passenger traffic of the great ocean transportation companies became from one week to another more and more evident. Congress was memorialized by several of the large and active medical organizations in the cities of the Atlantic sea-board. It was hoped that some legislation might be secured creating a National Health Bureau by which quarantine might be administered or at least supervised for the whole country. In the month of February an act was passed by Congress granting additional powers and imposing additional duties upon the Marine-Hospital Service. This act abolished the old National Board of Health; gave power to the President to prohibit immigration in whole or in part; authorized him to detail any medical officer of the Government to serve in the office of the consul at any foreign port; affirmed the duties of United States consular officers in regard to the cargo, passengers and crew of vessels sailing for our ports; and authorized the Secretary of the Treasury to remand an infected vessel arriving at any port not provided with proper facilities for its treatment, at its own expense, to the nearest national or other quarantine station where suitable accommodations and appliances were provided for the necessary disinfection and treatment of the vessel, passengers and cargo.

Though not what was desired by those most competent to judge and most conversant with sanitary questions as affecting the country at large, it was all that could be obtained from Congress, and the most and the best was made of it. A conference of health officers from the Atlantic and Gulf ports was held at Washington in March, at the invitation of Surgeon-General Wyman of the Marine-Hospital Service. Some of the best medical officers in the Marine-Hospital Service were detailed to serve in connection with the consular offices at European ports, where their work — notably at Hamburg and Naples — was invaluable. This provision, supplemented by the intelligent co-operation of most of the Steamship Companies, and the judicious vigilance of the health officers at our ports of entry, was attended by the happiest results. Not only did the country escape an epidemic, but hardly a [illegible] within our borders.

Apart from the [illegible] of exceptionally fine weather during the summer of 1893, the fact that Western Europe and the United States escaped a serious epidemic outbreak of cholera is a striking tribute to the advances made by Sanitary Science in recent years.

MEDICAL LEGISLATION.

Medical legislation in the United States, this year has had its usual history: many good bills have failed to pass, and, as in compensation, some very bad ones have also been defeated.

With a view of keeping Canadian pleuro-pneumonia out of the United States, the Secretary of the Treasury instructed collectors of customs on the northern frontier that neat cattle may enter the United States from Canada only at Buffalo, N. Y., after passing the inspection prescribed by the Secretary of Agriculture.

In Massachusetts the law providing for the registration of deaths by physicians, in connection with the obtaining of a burial permit by undertakers, has been amended so that in cases of still-born children and those dying immediately after delivery, the same form is required as in other deaths, and a penalty is provided for making false statements. A law was passed providing that "sweat shops" shall be licensed and superintended by the police, and that in cases of danger from infectious diseases or vermin, the State Board of Health shall take charge and control. A bill was passed requiring local boards of health to notify the State Board of the existence in their districts of any disease dangerous to the public health. Hereafter plumbers must be licensed, and must pass an examination. The examining boards consist of the chairman of the local board of health and the inspector of buildings. It will be no longer possible for any ignoramus to practise plumbing, but the practice of medicine is still unrestricted.

The Michigan State Board of Health unanimously decided that consumption is a dangerous, communicable disease, and must be reported by physicians and householders to the several health boards.

In New York a bill was passed providing for the levying of a special annual tax for the support of the insane. The tax of one-third of a mill, imposed by the bill is expected to yield about $1,350,000 each year. The New York City Board of Health took similar action in regard to tuberculosis to that of the Michigan State Board.

The legislature of Ohio passed a law regulating the practice of veterinary surgery, and requiring an examination before allowing any one to practise upon horses. Ohio has no medical practice law.

In Pennsylvania the legislature passed a bill establishing a medical council and three State boards of medical examiners, corresponding to the three so-called schools. The boards are to be appointed by the Governor, and their work is to be supervised by the medical council, consisting of the Lieutenant-Governor, the Secretary of Interior Affairs, the Superintendent of the State Board of Health, with the presidents of the boards. Applicants will be required to have studied medicine for four years.

In Tennessee an act was passed to prevent the spread of communicable diseases, providing that the local health authorities shall be notified of all cases or suspected cases of communicable disease, except any venereal disease. The local board is required to notify both the State Board of Health and the Board of Education of the district in which the case occurs.

In Washington the State legislature passed an anti-cigarette law, making it a criminal offence to manufacture, buy, sell or give away, or to have in one's possession cigarettes or cigarette paper.

The Superior Court of New York City has ruled that when a married woman is so injured through the negligence of another person as to miscarry, her husband can recover damages for the loss of the child.

The Supreme Court of North Dakota has ruled that mental suffering is as properly considered in estimating damages as is physical pain. The impairment of mental powers, naturally a proper element when proved, is only to be considered by the jury when claimed in the suit and evidence.

The Supreme Court of Illinois has made the following ruling regarding expert medical testimony: "A practising physician who is shown to be a graduate of a regular college and to have practised his profession for many years, is competent to give his opinion upon a hypothetical question, setting forth the symptoms of a deceased person, whether the death was from the effects of arsenical poisoning, although he may not be shown to have had any case of such poisoning. A medical witness, in giving his opinion as an expert, is not confined to opinions derived from his own observation and experience, but may give an opinion based upon information derived from medical books."

The Supreme Court of Wisconsin has ruled that when a married woman sustains a personal injury, and her physician does not caution her to avoid pregnancy, and there is no evidence that her injury was such that he should have done so, her pregnancy occurring after the accident, even if it prolong her injury or delay her recovery, is not necessarily, and as a matter of law, sufficient to justify a reduction of damages.

The Legislative Assembly of the Island of Jersey declared by vote that quarantine is not preventive of cholera, and therefore refused to establish a quarantine against vessels from ports alleged to be cholera infected.

MISCELLANY.

Early in the spring an International Sanitary Conference was held at Dresden, on the initiative of the Austro-Hungarian Government, to discuss the control of cholera epidemics. Delegates were present from nineteen European Governments. A chief part of the time of the Conference was spent in devising regulations for the uniform administration of land quarantine and traffic between infected and non-infected countries. A convention was signed by a majority of the countries represented, by which the Governments agree to notify contracting States of every appearance of a cholera focus in their territory. They also agreed that medical surveillance shall be given to all passengers from such a district for a period corresponding to the incubation of cholera, and decided that this shall be taken as five days.

During the year Haffkine has continued his work upon chemical vaccination against Asiatic cholera, and has inoculated over four hundred persons at Agra, British India — a notorious home of cholera — with no untoward effects and apparently good results.

In the line of bacteriological diagnosis of disease is the establishment by the New York City Board of Health of a laboratory for the free diagnosis of membranous diseases of the throat and fauces. In Boston the Bacteriological Department of the Harvard Medical School has offered to make cultures of all suspected cases of diphtheria for the purpose of securing a more accurate diagnosis by the profession.

The British Leprosy Commission appointed in 1890 made its report in the spring of this year. In their investigations they personally examined over two thousand lepers in India and supplemented their inquiries by prolonged pathological and bacteriological researches. About nine per cent. of the cases offered for examination were found to be wrongly diagnosticated. They reported an actual and relative decrease in the spread of the disease in the last ten years. On the important question of contagiousness, they concluded that though leprosy must be classed as a contagious disease, yet the risk of contagion is so small that it may be disregarded, and that the attention should be directed towards the removal of predisposing factors.

The fiftieth anniversary of Pettenkofer's doctorate was celebrated in Munich on July 1st. Various orders were bestowed upon him by the Emperor, the Prince Regent of Bavaria and the King of Servia. The burgomasters presented him with the "Gold Bürger's Medal," the first time this honor has been given to a person holding an honorary citizenship. Congratulatory addresses were read from various European universities, and a banquet brought the celebration to a close.

On July 5th the centenary of the death of John Hunter was commemorated by an exhibition of relics associated with the great surgeon in the library of the Royal College of Surgeons. In addition to the articles belonging to the college, many valuable articles were loaned by private owners.

The tercentenary of the admission of William Harvey as a student of Gonville and Caius College, Cambridge, was celebrated on the 21st of June by the Master and Fellows of the College. A large and distinguished company were entertained at dinner, and a number of new and interesting Harvey relics were exhibited.

The disasters of the year have been numerous. The Strafford County Insane Asylum at Dover, N. H., was burned to the ground on the night of February 9th, and forty-four of the inmates were killed. Most of them were women who were locked in their rooms at night and were unable to escape owing to the rapid spread of the fire. In June the building in Washington, D. C., which was formerly Ford's Theatre (where President Lincoln was assassinated, but which for several years [illegible] while manœuvering off the African coast. Admiral Tryon and nearly four hundred men were drowned, many being horribly mangled by the revolving propeller as the ship sank bow first. The first of September a terrible hurricane swept over the South Carolina coast, entirely inundating the low range of sea islands. Many hundred persons were drowned, and the destruction of crops and dwellings left the few who survived exposed to the perils of hunger and disease from the unburied bodies of men and beasts. The prompt assistance of the Marine-Hospital Service did much to prevent a widespread epidemic. An equally severe storm swept the English channel during the autumn, causing much damage to shipping and harbors and drowning many hundred seamen. The rush of travel to the World's Fair at Chicago was unfortunately attended by a great and unwarrantable loss of life from railroad accidents. The many extra excursion trains running out of schedule time were almost daily subject to collision.

MEDICAL CONGRESSES AND MEETINGS.

The most important meeting during the year was the first Pan American Medical Congress, which was held in Washington, D. C., September 5th, and opened by the President of the United States in person. The idea of thus bringing together in closer relationship the various nations of the Western Hemisphere was most successfully carried out. The constituent countries of the Congress, all of which sent official delegates in response to the invitation of the President, were Argentine Republic, Bolivia, Brazil, British North America, British West Indies (including British Honduras), Chili, Dominican Republic, Spanish Honduras, Mexico, Nicaraugua, Paraguay, Peru, Salvador, Republic of Colombia, Republic of Costa Rica, Ecuador, Guatemala, Hayti, Kingdom of Hawaii, Spanish West Indies, United States, Uruguay, Venezuela, Danish, Dutch and French West Indies. The work of the Congress was carried on in twenty-two sections; and at the close of the convention the foreign delegates visited different cities of the country as guests of the medical profession in each place.

Among other important meetings of Medical Congresses and Societies during the year were the following:

The American Gynæcological Society, in Philadelphia, May 16th; the American Laryngological Society, in New York, May 22d; the American Pediatric Society, at West Point, May 24th; the American Climatological Association, in Philadelphia, May 25th; the American Surgical Association, in Buffalo, May 30th; the Association of American Physicians, in Washington, May 30th; the American Association of Obstetricians and Gynæcologists, in Detroit, June 1st; the American Academy of Medicine, in Milwaukee, June 3d; the American Medical Association, in Milwaukee, June 6th; the Massachusetts Medical Society, in Boston, June 14th; the American Otological Society, in New London, July 18th; the American Ophthalmological Association, in New London, July 19th; the American Association of Genito-Urinary Surgeons, in Harrogate, June 20th; the American Neurological Association, in Long Branch, July 25th; the Association of Military Surgeons of the National Guard of the United States, in Chicago, August 8th; the American Dermatological Association, in Milwaukee, September 5th; the American Public Health Association, jointly with the World's Fair Auxiliary Congress of Public Health, in Chicago, October 10th.

The seventh French Surgical Congress met in Paris, April 3d; and the twenty-second Congress of the Association of German Surgeons was held in Berlin, April 12th. The twelfth German Congress of Internal Medicine was held in Wiesbaden, April 12th. The third French Congress for Tuberculosis, met in Paris, July 27th. The sixty-first annual meeting of the British Medical Association was held in Newcastle-on-Tyne, August 1st. The fourth International Congress for Temperance met at Haag, August 16th; and the Association of German Naturalists and Physicians in Nürnberg, September 11th. The eleventh International Medical Congress, which was to have been held in Rome, September 24th, was postponed on account of the prevalence of cholera in Italy, until March 29, 1894.

LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Mütter Lectures, in Philadelpha, by De Forest Willard, M.D., on "The Surgical Pathology and Surgery of the Spinal Cord, the Vertebræ and the Peripheral Nerves"; the Shattuck Lecture, before the Massachusetts Medical Society, by William Osler, M.D., on "Tuberculous Pleurisy"; the Lowell Institute Lectures, in Boston, on "Bacteriology," by William T. Sedgwick, Ph.D., Professor of Biology in the Massachusetts Institute of Technology. In Great Britain, the Croonian Lectures, on "The Pharmacological Action and Therapeutic Uses of the Nitrites and Allied Compounds," by D. J. Leech, M.D., Lond., F.R.C.P.; the Morton Lectures, on "The Parasitism of Protozoa in Carcinoma," by James Galloway, A.M., M.D., Aberdeen, F.R.C.S., M.R.C.P.; the Milroy Lectures, on "Changes of Type in Epidemic Diseases," by B. Arthur Whitelegge, M.D., B.Sc.; the Goulstonian Lectures, on "The Chemical Physiology of the Animal Cell," by W. D. Halliburton, M.D., F.R.C.P., F.R.S.; the Croonian Lectures, before the Royal Society, on "The Position of Pathology among the Biological Studies," by Rudolf Virchow; the Lettsomian Lectures, on "Syphilitic Affections of the Nervous System," by J. S. Bristowe, M.D., LL.D., F.R.C.P., F.R.S.; the Combe Lectures, on "Physiology," by Professor Stirling; the Cavendish Lecture, on "Some Changes in Surgical Opinion regarding the Diseases of the Urinary Organs," by Henry Morris, M.A., M.B., Lond., F.R.C.S., Eng.; the Bradshaw Lecture, on "Some Diseases of the Thyroid Gland," by William S. Greenfield, M.D., F.R.C.P.; the Lumleian Lectures, on "Aëro-therapeutics in Lung Diseases," by C. Theodore Williams, M.A., M.D., F.R.C.P.; the Harveian Oration, on "Pathology as the Basis of Rational Medicine," by Philip Henry Pye-Smith, M.D., F.R.C.P., F.R.S.; the Bowman Lecture, on the "Abandonment of Iridectomy in the Extraction of Hard Cataract," by T. Pridgin Teale, M.A., F.R.S., F.R.C.S.; the Hunterian Oration, on "The Life of John Hunter," by Thomas Bryant, F.R.C.S., Eng. and I., M. Ch.; the Hunterian Lectures, on "Certain Branches of Operative Surgery," by Walter Rivington, M.S., Lond., F.R.C.S., and by M. Armand Ruffer, M.D., on "Recent Researches on Protozoa and Diseases"; the Romanes Lecture at Oxford, on "Evolution and Ethics," by John Huxley.

NECROLOGY. — FOREIGN.

Epaminonda Abate, M.D., well known for his study in the methods of petrifying human corpses, died in Naples, September 26, aged seventy.

Hjalmar A. Abelin, M.D., formerly professor of children's diseases in the Carolina Institute, Stockholm, died September 13, aged seventy-six.

Marcus Beck, M.D., F.R.C.S., professor of surgery in the University College Hospital, London, died May 25, aged fifty.

E. Warren Bey, M.D., an American physician and formerly surgeon-general in the Egyptian army, died in Paris, September 16.

Antoine Blanche, M.D., the distinguished French alienist, died at Auteuil, August 15.

Arnaldo Cantani, M.D., professor of clinical medicine in the University of Naples, died May 1, aged fifty-six.

Jean Martin Charcot, professor of the diseases of the nervous system at the Salpêtrière, Paris, died at Morvan, August 16, aged sixty-eight.

Sir Andrew Clark, Bart., M.D., F.R.S., LL.D., president of the Royal College of Physicians of England, and consulting physician and lecturer on clinical medicine to the London Hospital, died in London, November 6, aged sixty-seven.

Charles Clay, L.R.C.S., Eng., L.R.C.P., Lond., who was considered in England as "the Father of Ovariotomy," died in Blackpool, September 19, aged ninety-two.

Robert Foster Dill, M.D., professor of midwifery in Queen's College, Belfast, died July 20, aged eighty-one.

Thomas R. Dupuis, M.D., professor of clinical surgery and anatomy in the Medical Department of Queen's University, Kingston, Ont., died June 25, aged sixty.

Alfred Hardy, M.D., professor of dermatology and of clinical medicine in the Paris Medical Faculty, died in Paris, January 22, aged eighty-one.

W. M. Graily Hewitt, M.D., consulting obstetric physician to University College Hospital and emeritus professor of obstetric medicine in University College, died in London, August 27, aged sixty-five.

Otto Kahler, M.D., professor of clinical medicine in the University of Vienna, died January 24, aged forty-four.

Hans Kundrat, M.D., professor of pathological anatomy in the University of Vienna, died April 27, aged forty-nine.

Professor Le Fort, Vice-President of the Académie de Médecine of Paris, died at Paris, October 19, aged sixty-six.

Casimiro Manassei, M.D., professor of dermatology and syphilis in Rome, died January 14.

Jacob Moleschott, M.D., professor of physiology in the University of Rome, died in May, aged seventy.

Prof. Rawdon McNamara, one of the surgeons of the Meath Hospital and the representative of the Royal College of Surgeons in Ireland, in the General Medical Council, died in Dublin, April 12.

Césare Olivieri, M.D., director of the Pellegrini Hospital and one of the most prominent physicians of the Naples school, died in Naples, September 17, aged seventy-one.

Arnold Paltauf, M.D., professor of legal medicine in the University of Prague, died May 29.

Surgeon-Major Thomas Heazle Parke, who was chief medical officer under Stanley in the search for Emin Pasha, died at Alt-na-Craig, Scotland, September 10, aged thirty-six.

Charles Felix Michel Peter, M.D., professor of clinical medicine in the Faculty of Medicine, Paris, France, died June 15, aged sixty-nine.

John Rae, M.D, a noted Arctic explorer who had charge of one of the Sir John Franklin expeditions, died in London, July 24.

J. Schnitzler, M.D., professor extraordinary of internal medicine and laryngology at the University of Vienna, died May 4, aged fifty-eight.

John Tyndall died in Haselmere, England, December 4.

Walter Hayle Walshe, LL.D., M.D., F.R.C.P., emeritus professor of medicine and clinical medicine, University College, London, died December 14, 1892, in the eighty-first year of his age. He was for twenty-one years professor in University College, London, and was one of the most widely-known medical men of England.

Severin Wieiobycki, M.D., died in St. John's Wood, London, September 7, aged one hundred years and eight months.

NECROLOGY — UNITED STATES.

Henry W. Buell, M.D., at one time president of the Connecticut State Medical Society, died in Litchfield, Conn., January 30, aged seventy-two.

J. W. Branham, M.D., assistant surgeon in the Marine-Hospital Service, died at Brunswick, Ga., of yellow fever contracted while on quarantine duty August 20, aged twenty-five.

John J. Craven, M.D., once prominent in military and scientific circles, who superintended the building of the first telegraph line between New York and Philadelphia, died at Patchogue, Long Island, February 14, at the age of seventy-one.

J. S. Dorsay Cullen, M.D., professor of surgery and Dean in the Richmond Medical College, died in Richmond, Va., March 24, aged sixty.

Charles Warrington Earle, M.D., president of the board of directors of the College of Physicians and Surgeons and of the Women's Medical College of Chicago, died in Chicago, November 19, aged forty-eight.

Charles H. Fisher, M.D., secretary of the Rhode Island State Board of Health, died at Buffalo, N. Y., October 21, aged seventy-one.

Benjamin A. Fordyce, M.D., at one time president of the New York State Medical Association, died at Union Springs, N. Y., June 3, aged seventy.

Norvin Green, M.D., president of the Western Union Telegraph Company, died February 12, aged seventy-four.

Hermann August Hagen, M.D., professor of entomology at Harvard College, died in Cambridge, November 10, aged seventy-six.

David Harlan, M.D., a medical director in the

United States Navy, died at [illegible] 12, [illegible].

Henry M. [illegible], M.D., for many years superintendent of the Maine Insane Hospital, [illegible] in 188[illegible], died in Augusta, Me., April [illegible], aged [illegible]-two.

Lyman B. How, M.D., of Manchester, professor of anatomy in the Dartmouth Medical School and at one time president of the New Hampshire Medical Society, died in Hanover, N. H., September 15, aged fifty-five.

Edward H. James, M.D., for twenty-seven years a member of the New York City Board of Health, died in New York, March 12, aged seventy-three.

John M. Keating, M.D., LL.D., formerly of Philadelphia and well known as the editor of the "Cyclopædia of the Diseases of Children," died at Colorado Springs, November 17.

Charles Carroll Lee, M.D., professor of gynæcology at the New York Post-Graduate Hospital and School, died in New York, May 10, aged fifty-four.

Samuel Logan, M.D., professor of surgery in the Tulane University, New Orleans, died January 12, aged sixty-nine.

Samuel E. Mumford, M.D., at one time president of the Indiana State Medical Society, died in Princeton, Ind., July 31.

Charles W. Parsons, M.D., professor of physiology in Brown University, died at Providence, R. I., September 2, aged seventy.

Timothy Stone Pinneo, M.D., professor of belles lettres in Marietta College, Ohio, and the author of Pinneo's Grammars, died at Norwalk, Conn., August 9, aged ninety.

William H. Stokes, M.D., for thirty years in charge of the Mount Hope Retreat, the largest insane asylum in Maryland, died in Baltimore, May 7, aged eighty-one.

William B. Towles, M.D., professor of anatomy in the University of Virginia and the University of Vermont, died in Charlotte, Va., September 18, aged fifty-three.

Walter Vought, M.D., who was in charge of the Fire Island Quarantine Station during the cholera quarantine last year, died in New York, September 25, aged thirty-one.

James H. Wheeler, M.D., formerly president of the New Hampshire Medical Society, died in Dover, N. H., January 26, aged sixty-one.

NECROLOGY [illegible]

George Frederic Bigelow, M.D., of Boston, died [illegible].

James Henry Bodge, M.D., of Newton Centre, died October 19, aged fifty-three.

Cyrus Faulkner Carter, M.D., of Boston, died June 14, aged thirty-one.

Henry Colman, M.D., of Lynn, died November 12, aged fifty-three.

Charles Frederick Crehore, M.D., of Newton Lower Falls, died November 8, aged sixty-five.

[illegible]ford, died June 12, aged seventy-three.

[illegible]

[illegible]

William Donnison Hodges, M.D., of Nahant, died March 6, aged thirty-nine.

[illegible], M.D., of [illegible], died November 16, aged seventy-eight.

[illegible], M.D., of South Boston, died November [illegible].

John Furness Jarvis, M.D., of Boston, died February 10, aged sixty-six.

James Abercrombie Latimer, M.D., of East Cambridge, died [illegible].

Samuel Moore Logan, M.D., of Riverside, Cal., [illegible].

[illegible] 29, aged seventy-four.

Stephen Crosby Martin, M.D., of Brookline, died November 5, aged forty-three.

Asa Millet, M.D., of East Bridgewater, died March 21, aged eighty.

[illegible], M.D., of [illegible], died August 13, aged forty-three.

Samuel N. Nelson, M.D., of Revere, died February [illegible].

Horatio Nelson Page, M.D., of Chelsea, died September 6, aged eighty-seven.

John Renton, M.D., of Boston, died December 15, aged seventy-four.

Richard Henry Salter, M.D., of Boston, died August 4, aged eighty-six.

George Woodbury Sargent, M.D., of Lawrence, died January 1, aged fifty-eight.

George Cheyne Shattuck, M.D., of Boston, a former President of the Society, died March 22, aged seventy-nine.

Benjamin Shurtleff Shaw, M.D., of Boston, died May 3, aged sixty-five.

Andrew Francis Shea, M.D., of Lawrence, died July 25, aged thirty-five.

Thomas Foster Sherman, M.D., of Boston, died September 26, aged thirty-seven.

George Williams Snow, M.D., of Newburyport, died May 21, aged fifty-eight.

Walter Gay Stebbins, M.D., of Springfield, died October 8, aged twenty-eight.

Charles Pratt Strong, M.D., of Boston, died March 14, aged thirty-seven.

Charles Carroll Tower, M.D., of South Weymouth, died May 29, aged fifty-nine.

William Tecumseh Sherman Wardwell, M.D., of Roslindale, died June 24, aged thirty-two.

Albert Poland Weeks, M.D., of Chelsea, died April 7, aged fifty-four.

Moses Williams Weld, M.D., of Boston, died January 16, aged seventy-five.

Henry Wheatland, M.D., of Salem, died February 27, aged eighty-one.

Elbridge Gerry Wheeler, M.D., of Middlefield, died in December.

John Birtwistle Whitaker, of Fall River, died August 24, aged seventy-seven.

George Franklin Woodbury, M.D., of Worcester, died June 18, aged forty-two.

Samuel Lane Young, M.D., of Ferry Village, Me., died April 19, aged eighty.

Since our report of last year, thirty-eight members of the Society have died, three less than in the previous year. The average age is a little lower than in the past year, being sixty and four-tenths instead of sixty-one and a half. Five had lived to be eighty years old, but eight had not reached forty.

METEOROLOGICAL RECORD,

For the week ending December 16, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..10	[illegible]	41	[illegible]	34	[illegible]	[illegible]	76	S.W.	W.	15	18	F.	C.	.03
M..11	[illegible]	[illegible]	[illegible]	18	40	43	[illegible]	W.	W.	[illegible]	10	C.	C.	
T..12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	N.W.	7	12	N.	O.	[illegible]
W..13	[illegible]	[illegible]	14	[illegible]	[illegible]	[illegible]	51	N.W.	N.W.	17	[illegible]	C.	C.	
T..14	30.78	[illegible]	[illegible]	[illegible]	54	[illegible]	[illegible]	W.	S.	[illegible]	[illegible]	C.	N.	
F..15	30.19	[illegible]	[illegible]	[illegible]	[illegible]	94	[illegible]	N.W.	N.E.	[illegible]	7	N.	R.	.61
S..16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	96	W.	N.W.	8	3	G.	R.	.82
☞	[illegible]		31	[illegible]			69							1.48

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, December 16, 1893

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	1,891,306	776	289	17.42	20.93	1.04	9.23	.78
Chicago	[illegible]	—	—	—	—	—	—	—
Philadelphia	1,115,562	491	[illegible]	[illegible]	18.00	2.00	5.20	1.20
Brooklyn	[illegible]	[illegible]	102	6.96	[illegible]	1.36	[illegible]	[illegible]
St. Louis	[illegible]	—	—	—	—	—	—	—
Boston	487,397	[illegible]	[illegible]	11.34	24.36	—	[illegible]	2.10
Baltimore	[illegible]	—	—	—	—	—	—	—
Washington	308,431	[illegible]	27	7.36	13.80	2.76	3.68	—
Cincinnati	[illegible]	—	—	—	—	—	—	—
Cleveland	[illegible]	[illegible]	41	[illegible]	[illegible]	—	[illegible]	1.78
Pittsburg	263,709	169	[illegible]	[illegible]	[illegible]	1.77	1.77	[illegible]
Milwaukee	[illegible]	118	[illegible]	11.05	19.55	—	[illegible]	[illegible]
Nashville	[illegible]	[illegible]	12	—	20.00	—	—	—
Charleston	[illegible]	[illegible]	8	2.86	11.44	—	—	—
Portland	40,000	19	[illegible]	—	31.56	—	—	—
Worcester	96,217	33	15	12.12	3.03	3.03	6.06	—
Fall River	87,411	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—
Lowell	87,191	42	16	14.28	21.42	[illegible]	7.14	—
Cambridge	[illegible]	28	[illegible]	21.42	[illegible]	—	7.14	[illegible]
Lynn	62,656	17	5	17.64	[illegible]	—	11.76	—
Springfield	48,684	19	3	15.78	21.04	10.52	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	[illegible]	22	9	18.20	13.65	9.10	—	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	12	3	16.66	8.33	—	[illegible]	—
Brockton	32,140	14	2	7.14	[illegible]	—	—	—
Haverhill	31,396	11	2	—	27.27	—	—	—
Chelsea	30,264	17	3	[illegible]	29.40	—	5.88	—
Malden	[illegible]	9	—	—	—	—	—	—
Newton	27,556	—	—	—	—	—	—	—
Fitchburg	27,146	4	0	—	—	—	—	—
Taunton	26,972	4	0	—	—	—	—	—
Gloucester	[illegible]	—	—	—	—	—	—	—
Waltham	22,058	5	0	20.00	20.00	20.00	—	—
Quincy	19,642	4	1	—	—	—	—	—
Pittsfield	[illegible]	2	2	—	—	—	—	—
Everett	[illegible]	3	3	—	—	—	—	—
Northampton	16,331	6	0	—	16.66	—	—	—
Newburyport	14,073	9	2	11.11	—	—	11.11	—
Amesbury	10,920	5	2	40.00	—	—	—	[illegible]

Deaths reported 2,909: under five years of age 941; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 355, acute lung diseases 554, consumption 320, diphtheria and croup 167, diarrhœal diseases 43, typhoid fever 42, scarlet fever 41, whooping-cough 21, measles 15, cerebro-spinal meningitis 12, erysipelas 6, malarial fever 4, small-pox 4.

From diarrhœal diseases New York 17, Pittsburg 6, Brooklyn 4, Philadelphia, Boston and Cleveland 2 each, Fall River, Springfield, New Bedford and Salem 1 each. From whooping-cough New York 13, Philadelphia and Brooklyn 3 each, Boston and New Bedford 1 each. From measles New York 7, Milwaukee 4, Philadelphia 2, Brooklyn and Fall River 1 each. From cerebro-spinal meningitis New York, Cleveland and Lowell 2 each, Philadelphia, Brooklyn, Washington, Worcester, Lynn and Brockton 1 each. From erysipelas New York 4, Boston 2. From small-pox New York 3, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending December 2d, the death-rate was 25.5. Deaths reported 5,248: acute diseases of the respiratory organs (London) 737, whooping-cough 129, diphtheria 108, fever 78, scarlet fever 70, measles 61, diarrhœa 45, small-pox (Birmingham 5, Bradford 3, Leicester and Oldham 2 each) 12.

The death-rates ranged from 13.4 in Croydon to 34.7 in Birkenhead; Birmingham 22.4, Bradford 22.6, Cardiff 20.1, Hull 29.7, Leeds 22.7, Leicester 28 0, Liverpool 33.0, London 27.1, Manchester 33.3, Newcastle-on-Tyne 26.7, Nottingham 29.1, Salford 27.2, Sunderland 24.4, West Ham 25.5, Wolverhampton 30.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 16, 1893, TO DECEMBER 23, 1893.

Leave of absence for one month, to commence about December 22, 1893, is hereby granted to Major Daniel G. Caldwell, surgeon, U. S. A.

Leave of absence for one month, to take effect about the 20th instant, is granted Captain W. B. Banister, assistant surgeon, U. S. A.

First-Lieut. Madison M. Brewer, assistant surgeon, having relinquished the unexpired portion of his sick leave of absence, will report in person to the commanding officer, Fort Monroe, Virginia, for temporary duty at that post.

First-Lieut. John S. Kulp, assistant surgeon, now on temporary duty at Jackson Park, Chicago, Ill., is relieved from further duty at Columbus Barracks, Ohio, and when his services are no longer needed with the troops at Jackson Park, will report in person to the commanding officer, Fort Sheridan, Illinois, for duty at that post.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, January 1, 1894, at 8 o'clock.

Dr. M. F. Gavin: "The Radical Cure of Hydrocele."

Dr. George W. Gay: "Malignant Disease of the Rectum." Discussion by Dr. Burrell, Dr. F. S. Watson and Dr. J. C. Stedman. Important business will come before the meeting.

John C. Munro, M.D., *Secretary.*

The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place on Wednesday evening, January 3, 1894, at 8 o'clock.

Dr. Herbert L. Smith will read a paper entitled "An Experimental Study of the Reduction of Elbow Fractures."

Dr. F. S. Watson will report "Some Cases of Urinary Retention from Unusual Causes."

Charles L. Scudder, M.D., *Secretary*, 1 Marlborough St.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, on Thursday evening, December 28, 1893, at 8 o'clock.

Dr. F. W. Johnson: "A Report of Seven Cases of Extra-Uterine Pregnancy." Discussion by Dr. A. T. Cabot, Dr. E. W. Cushing, Dr L. V. Ingraham and Dr. W. F. Whitney.

Dr. John Dixwell, "A Case of Rupture of Vagina."

Any members having similar cases to report are requested to take part in the discussion.

Edward Reynolds, M.D., *Chairman.*
Geo. H. Washburn, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Two Cases of Laryngeal Neoplasms. By Robert Levy, M.D. Reprint. 1893.

Medicine as a Career for Educated Men. By William W. Keen, M.D., LL.D. 1893.

How Shall We Make Our Homes Healthy? By Benjamin J. Portugaloff, M.D. Chicago. 1893.

An Economical System of Sanitary Drainage for City and Country. By M. Nadiein, Captain of the Russian Army. Chicago. 1893.

A Manual of Practical Hygiene Designed for Sanitary and Health Officers, Practitioners and Students of Medicine. By W. M. L. Coplin, M.D., Adjunct Professor of Hygiene, Demonstrator of Pathology and Curator of the Museum, Jefferson Medical College, etc., and D. Bevan, M.D., Instructor in Hygiene and Clinical Microscopy, Jefferson Medical College, etc., with an introduction by H. A. Hare, M.D., Professor of Therapeutics, Materia Medica and Hygiene, Jefferson Medical College. With 140 illustrations. Philadelphia: P. Blakiston, Son & Co. 1893.

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